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Florida's Ocean Future: Toward a State Ocean Policy

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Cover Page Footnote

This article is based on a report prepared for the Executive Office of the Governor of the State of Florida. Funds for the project were provided by the Florida Department of Environmental Regulation, Coastal Zone Management Section, using funds made available through the National Oceanic and Atmospheric Administration under the Coastal Zone Management Act of 1972, as amended. Several sections of the original report have been deleted or substantially edited. Copies of the complete report may be obtained by writing to the Executive Office of the Governor, Office of Environmental Affairs, The Capitol, Tallahassee, Florida 32399-0001. The author is indebted to all the cooperative people in both the state agencies and the private sector who provided information and reviewed numerous drafts of the report. The author particularly wishes to thank Paul Johnson of the Governor's Office of Environmental Affairs for his work and commitment to the project, and to Juan P. Bauta II, Susan Tassell, and Sara D. Baggett, who spent countless hours in research and assistance.

FLORIDA'S OCEAN FUTURE: TOWARD A STATE OCEAN POLICY†

DONNA R. CHRISTIE*

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I. INTRODUCTION

Florida is often referred to as an ocean state, and the title is well deserved. Florida has the second longest coastline of the fifty states. The ocean has made Florida unique. The surrounding warm waters have created a year-round climate that has made the state a major agricultural producer, as well as an ideal vacation spot. Nearly all of the state's population lives within an hour's drive from the coast. More than seventy-five per cent of Florida's population lives in coastal counties, and over eighty per cent of the state's population growth during this decade has concentrated in coastal areas.

The coastline of Florida is often recognized as the state's most important asset. Yet, just beyond the sandy beaches lies an ocean area of resource potential of equal or greater importance to the state: the submerged offshore lands of Florida extending three geographic miles into the Atlantic Ocean and 10.36 land miles—three marine leagues or nine geographic miles—into the Gulf of Mexico. Florida holds title to 6.7 million acres of offshore land, making it the second largest "ocean-owning" state.

Ocean areas and the resources they encompass offer a wide range of uses to both the state and nation. The maritime industry relies on safe shipping channels for importing and exporting goods to and from Florida and throughout the world. The commercial and recreational fishing industries reap the benefits of productive marine habitats, including offshore coral reefs, seagrass beds, and artificial reefs. Universities and other academic research institutions rely on a natural marine environment to conduct research and to provide educational and economic opportunities for future generations. Mineral resources off Florida's coast prompt industry interest in oil and gas leasing and ocean mining of sand and gravel, phosphates, and heavy mineral reserves. Sites of historical and archeological significance are also found here. Our marine waters are also sites for sewage effluent discharges, ocean dumping, and proposed incineration of wastes.

Nearshore and coastal impacts from these activities can affect estuaries, land uses, local services, and economies. Offshore resource development can result in various forms of pollution that can affect estuarine and other coastal systems. Land-based support facilities, whether for fisheries, petroleum, or for other offshore development, directly affect local land uses and the level of local service requirements. The impacts of ocean resource development are an inherent part of the problem of multiple-use conflict on the coast.

Marine resource management involves responsibilities of every level of government and a myriad of agencies, at both the state and federal levels. Management of the oceans means reconciling a broad array of

conflicting uses, jurisdictional claims and competencies, and policies. Effective territorial sea policy development and management should be as important to Florida as an "ocean state" as management of shorelines is to Florida as a coastal state.

A. Background

As early as 1978, Robert Knecht, then Assistant Administrator of the National Oceanic and Atmospheric Administration for Coastal Zone Management, encouraged states to consider more active involvement in what he referred to as the "wet side" of coastal management. Knecht emphasized the importance of managing territorial seas from the perspective of intrastate uses and conflicts, as well as providing opportunities for the states to exert positive management influences over outside activities and policies influencing waters of the territorial sea.

During the 1980's, international and national ocean law and policy developed extremely rapidly. Without clearly enunciated ocean resource policies, states will be in the position of merely reacting on an ad hoc basis to these developments. This approach inevitably leads to conflict rather than cooperation; rarely is a state in its strongest posture when viewed as reactionary. Well-defined state policy precludes such a perception and provides opportunities for positive state input into developing federal policy.

In a recent report, "Coastal States and the U.S. Exclusive Economic Zone," the Coastal States Organization recognized that ocean management is the logical extension of coastal management. Several states have already accepted that proposition and have developed or have begun to develop comprehensive state ocean policy plans. A number of rationales for development of state ocean policies have been advanced:

Demands on . . . ocean resources are steadily increasing. Growth in . . . resident and visitor populations, increasing affluence, and changes in consumption patterns have intensified the demands for recreation, oceanic transshipment of goods and supplies, harvesting of products from the sea, and places to dispose wastes.

— HAWAII DEP'T OF PLANNING AND ECONOMIC
DEVELOPMENT, STATE OF HAWAII OCEAN
MANAGEMENT PLAN (Apr. 1985).

There are several reasons for . . . new interest in ocean resource planning and management. First, the ocean . . . is a valuable economic resource that supports a commercial and recreational

fishing industry, pleasure boating, commercial navigation and waste disposal. Other uses are on the horizon or have potential, among them oil and gas development, marine mineral mining and increased waste disposal. While these new uses present opportunities for economic diversification, they also have potential for causing adverse environmental effects, and for creating disputes over use of ocean space and resources.

- Good, Hildreth, Rose & Skillman,
EXECUTIVE SUMMARY: OREGON
TERRITORIAL SEA MANAGEMENT STUDY
(June 1987).

[W]e believe it behooves the states to pursue their own independent analyses of their individual and collective policy relationship to ocean and coastal issues, not only for their own benefit but also to prepare their contributions for future federal-state dialogues.

- OCEAN POLICY COMMITTEE OF THE NORTH
CAROLINA MARINE SCIENCE COUNCIL,
NORTH CAROLINA AND THE SEA: AN OCEAN
POLICY ANALYSIS (Nov. 1984).

With the aid of coastal management grants, North Carolina and Hawaii have taken the lead in defining state ocean policies. Oregon's and Washington's plans are nearing completion; Alabama, California, Massachusetts, and Mississippi are now in the early stages of ocean policy studies.

Florida's Coastal Management Program (FCMP) recognizes in Section II of the FCMP "Final Environmental Impact Statement" that ocean management and ocean policy development are logical extensions of coastal management. Many of the "Issues of Special Focus" relate directly to ocean resources and their uses. Coral reefs, navigation, ocean disposal of dredged or waste material, commercial and recreational fisheries, and water-related energy facilities all relate directly to offshore management.

To a large extent, however, the FCMP addresses these primarily offshore issues from a "land-planner" perspective and pays insufficient attention to the "wet side" of the coastal zone. Development of a state ocean policy would reinforce and enhance the state's efforts to deal with these issues. Better coordination of agency efforts and more efficient decision-making will result from broadening the focus of analysis and identifying state policy that relates to the territorial sea. Development of a state ocean policy would be one more step toward reasoned management of the coastal zone.

Florida has no comprehensive policy for ocean resource use. The competing demands and conflicting governmental jurisdictions over ocean resources continue to become more complex and confusing. The desire to mitigate the negative impacts of offshore uses on estuaries and shores, while reaping the many benefits of offshore resources, grows increasingly difficult without a defined, comprehensive state ocean policy. Management of coastal resources, including those of the territorial sea, require definition and coordination through a state ocean policy.

In January 1988, the Environmental Policy Unit of the Governor's Office of Planning and Budgeting contracted with the Policy Studies Clinic of the Florida State University College of Law to conduct research and to produce a report and recommendations on the development of ocean policy for the State of Florida. The grant was funded through the Florida Coastal Management Program's federal Coastal Zone Management Act grant program as a project to improve coastal management. The creation of a state ocean policy was recommended by the Governor's Coastal Resources Citizens Advisory Committee and others in 1986. This project was approved for funding by the Interagency Management Committee and the federal office of Ocean and Coastal Resources Management.

The first stage of the project involved the identification of major ocean policy issue areas for the state. This was accomplished by researching and reviewing legislation and regulations, interviewing managers and user groups, and conducting a public workshop for informational purposes to bring agencies, user groups, and interested citizens into the process of issue identification and policy recommendation at an early stage of the project. The research and commentary from the workshops formed the basis for a working paper which was reviewed by state agencies and user groups. The final report was extensively revised based on the comments of these groups. This study was intended to form the basis for development of a comprehensive state ocean policy for Florida. As the study shows, there are a myriad of pieces to the puzzle of ocean management in Florida. This article, which was originally the final report, is a first step at laying out the pieces. It does not provide, however, the degree of analysis of those pieces to propose a comprehensive ocean policy. Rather, it provides background and recommendations with which the state can better begin to articulate its policies.

B. Objectives

This article reflects the three major objectives of the study:

- 1) to provide a review and summary of the state government's role in coastal and ocean management within Florida's boundaries and in the adjacent seas;

2) to identify problem areas in ocean and coastal management, such as gaps, overlaps, or duplication of responsibilities; outmoded laws; the need for more intergovernmental coordination and cooperation in planning and programs; increased enforcement and public education programs, and a mechanism to guide research on coastal and ocean management problems; and

3) to identify issues that must be addressed in ocean policy development and to make recommendations for resolutions.

II. SUMMARY: POLICIES APPLICABLE TO FLORIDA'S SEAS

The following subsections reflect an attempt to glean from statutes, rules, plans, and case law clearly enunciated statements embodying policies applicable to Florida's offshore waters and submerged lands. The sources are indicated. One should not assume that these summaries represent a complete picture, because no attempt has been made in this section to elaborate or to extrapolate additional policies from other state activities by interpreting or applying policies or by reading policies together. Likewise, no attempt has been made to resolve any potentially conflicting policies in this section. The reader should consult the discussion in the relevant section of this article for a more complete identification of policy issues and conflicts. This section is intended to be merely a broad summary of this article.

A. State Planning

1. "Florida shall ensure that development and marine resource use and beach access improvements in the coastal areas do not endanger public safety or important natural resources. Florida shall, through acquisition and access improvements, make available to the state's population additional beaches and marine environment, consistent with sound environmental planning."¹

2. The State of Florida shall reasonably apply the following policies:

4. Protect coastal resources, marine resources, and dune systems from the adverse effects of development.

. . . .

6. Encourage land and water uses which are compatible with the protection of sensitive coastal resources.

7. Protect and restore long-term productivity of marine fisheries habitat and other aquatic resources.

8. Avoid the exploration and development of mineral resources which threaten marine, aquatic, and estuarine resources.

1. State Comprehensive Plan, FLA. STAT. § 187.201(9)(a) (1989).

10. Give priority in marine development to water-dependent uses over other uses.²

3. The Florida Coastal Management Plan, based on existing state authorities, shall be part of the State Comprehensive Plan.³

B. Submerged Lands and Jurisdiction

1. Florida holds "all right, title, and interest" to the land beneath the navigable waters and to the natural resources of the territorial sea within the boundaries of the state.⁴

2. Florida's boundaries extend three geographic miles into the Atlantic Ocean and three marine leagues, which is nine nautical miles or 10.36 land miles, into the Gulf of Mexico.⁵

3. Land below navigable waters within the state's boundaries is held by the state for the people and may be sold when authorized by law, but only when in the public interest. "Private use of portions of such lands may be authorized by law, but only when not contrary to the public interest."⁶

4. All state lands must be managed to "provide the greatest combination of benefits to the people of the state," and *all* submerged lands must be considered single-use lands, "managed primarily for the maintenance of essentially natural conditions, the propagation of fish and wildlife, and public recreation."⁷

5. Submerged land management policies include the following:

a) Discourage all private, exclusionary uses of submerged lands.

b) Limit use of state-owned submerged lands to water-dependent uses, unless the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees) finds that a greater public purpose would be served by a specific exception.

c) Prohibit all future leases for stilt houses on state submerged lands.

d) Terminate all unauthorized uses of state submerged lands.

e) Ensure that all activities on state submerged lands avoid adverse impacts on other authorized uses.⁸

2. *Id.* § 187.201(9)(b).

3. Florida Coastal Management Act of 1978, FLA. STAT. § 380.21(3)(b) (1989).

4. Submerged Lands Act of 1953, 43 U.S.C. §§ 1301-1315 (1982 & Supp. V 1987).

5. *United States v. Florida*, 425 U.S. 791 (1976).

6. FLA. CONST. art. X, § 11.

7. FLA. STAT. § 253.034(1)(b) (1989).

8. BUREAU OF STATE LANDS MANAGEMENT, DEP'T OF NATURAL RESOURCES, CONCEPTUAL STATE LANDS MANAGEMENT PLAN (adopted by the Board of Trustees of the Internal Improvement Trust Fund Mar. 17, 1981)[hereinafter DNR CONCEPTUAL PLAN].

6. The Department of Natural Resources's goals in managing marine and coastal resources include the following:

a) Protecting and restoring long-term productivity of marine fisheries habitat and other aquatic preserves, and

b) Avoiding the exploration and development of mineral resources which threaten marine, aquatic, and estuarine resources.⁹

7. "The title to lands under navigable waters, within the boundaries of the state, which have not been alienated, including beaches below mean high water lines, is held by the state, by virtue of its sovereignty, in trust for all the people."¹⁰

C. *Marine Salvage, Finds, and Historic Preservation*

1. In *in rem* admiralty cases, federal courts have no power to adjudicate the state's interest in a shipwreck or its antiquities without the state's consent.¹¹

2. The state holds title to historic shipwrecks within its territorial sea boundaries.¹²

3. Historic properties are irreplaceable, nonrenewable resources and should be managed to preserve the legacy for future generations.¹³

4. Exploration, excavation, or salvage of archaeological materials from state sovereignty submerged lands may only be conducted pursuant to an agreement with the Division of Historical Resources of the Florida Department of State.¹⁴

D. *The Florida Coastal Management Program*

Federal agency activities "directly affecting" the state's coastal zone must be consistent "to the maximum extent practicable" with the Florida Coastal Management Program (FCMP). Federally-permitted activities which affect the coastal zone must also be consistent with the FCMP.¹⁵

9. FLORIDA DEP'T OF NATURAL RESOURCES, AGENCY FUNCTIONAL PLAN 1987-1991 (Jan. 1988)[hereinafter DNR AGENCY PLAN].

10. FLA. CONST. art. X, § 11.

11. Florida Dep't of State v. Treasure Salvors, Inc., 458 U.S. 670 (1982).

12. The Abandoned Shipwreck Act of 1987, 43 U.S.C.A. §§ 2101-2106 (West Supp. 1989); Florida Historical Resources Act, FLA. STAT. ch. 267 (1989).

13. Florida Historical Resources Act, FLA. STAT. § 267.01(1)(a) (1989).

14. FLA. ADMIN. CODE ANN. r. 1A-31.0035(2) (1987).

15. Coastal Zone Management Act of 1972, 16 U.S.C. §§ 1451-1464 (1988).

E. Management of Marine Habitat and Protected Species

1. Florida Aquatic Preserves

1. Policies for use and management of aquatic preserves include the following:

1. No sale, lease or transfer of state-owned submerged lands within aquatic preserves shall be approved unless it is in the public interest.
2. No bulkhead line shall be located or relocated waterward of the mean high water line in an aquatic preserve unless necessitated by a public road or bridge construction project where no reasonable alternative exists and the project is not contrary to the public interest.
3. There shall be no drilling of gas or oil wells within any aquatic preserve.
4. There shall be no excavation of minerals within aquatic preserves except the dredging of dead oyster shells as approved by the Department of Natural Resources.
5. (a) There shall be no dredging of state-owned lands within aquatic preserves for the purpose of providing upland fill.
(b) There shall be no dredging or filling of submerged lands within aquatic preserves except minimum dredging and spoiling as may be necessary for the following activities:
 - i) public navigation projects
 - ii) maintenance of existing navigation channels
 - iii) creation and maintenance of marinas, piers, docks and their attendant navigation channels
 - iv) public utility installation or expansion
 - v) installation and maintenance of fuel transportation facilities
 - vi) alterations necessary to enhance the quality or utility of the preserve or the public health generally.
6. No structures shall be erected within a preserve except:
 - (a) Private docks for reasonable ingress and egress of riparian owners.
 - (b) Commercial docking facilities shown to be not contrary to the use or management criteria of the preserve.
 - (c) Shore protection structures, approved navigational aides, or public utility crossings authorized under policy [5(b)].
7. No wastes or effluents which substantially inhibit the accomplishment of the purposes of the Aquatic Preserve Acts shall be discharged into an aquatic preserve.
8. Management of human activities within aquatic preserves will not unreasonably interfere with traditional public uses such as fishing, boating and swimming.

9. Management of aquatic preserves shall not infringe upon the traditional rights of riparian land owners within or adjacent to an aquatic preserve.
10. Other uses of an aquatic preserve may only be approved subsequent to a formal finding of compatibility with the purpose of the Aquatic Preserve Acts and rules, and of the type designation of the preserve in question.¹⁶

2. *Estuarine Research Reserves and Marine Sanctuaries*

Estuarine research reserves are to provide natural field laboratories to study the processes of estuaries.¹⁷

3. *Endangered, Threatened, and Protected Marine Species*

1. The state's policy is to provide for research and management to conserve and wisely manage endangered and threatened species.¹⁸
2. Harming or possessing any endangered or threatened species is prohibited, except by permit and under circumstances that will enhance the potential for survival of an endangered species or will not have a negative impact on the survival of a threatened species.¹⁹
3. The State of Florida is a refuge and a sanctuary for manatees.²⁰
4. Taking, disturbing, or killing marine turtles is prohibited, except "by accident in the course of normal fishing operations."²¹

4. *Other Protection and Restoration Programs*

1. Land use planning in the Florida Keys must protect coral reef systems.²²
2. Taking, possessing, destroying, or selling sea fans, stony coral, or fire coral is prohibited, except in limited circumstances when permitted for educational or scientific purposes.²³
3. Waters designated "Outstanding Florida Waters" will receive the highest degree of protection.²⁴
4. The policy of the Department of Environmental Regulation is to

16. DNR CONCEPTUAL PLAN, *supra* note 8, at 57-59.

17. Coastal Zone Management Act of 1972, 16 U.S.C. § 1461 (1988).

18. Florida Endangered and Threatened Species Act of 1977, FLA. STAT. § 372.072 (1989).

19. FLA. ADMIN. CODE ANN. r. 39-27.002(1),(2) (1989).

20. Florida Manatee Sanctuary Act, FLA. STAT. § 370.12(2) (1989).

21. *Id.* § 370.12(1).

22. Florida Keys Protection Act, FLA. STAT. § 380.0552(7)(b) (1989).

23. FLA. STAT. § 370.114 (1989).

24. FLA. ADMIN. CODE ANN. r. 17-3.041(2) (1989).

designate waters within national parks, seashores, estuarine research reserves, marine sanctuaries, wildlife refuges, state parks, aquatic preserves, wilderness areas, and areas purchased under the Save Our Coast Program as "Outstanding Florida Waters."²⁵

F. Marine Fisheries Management

1. Florida's renewable marine fisheries resources shall be managed and preserved based on the best available information, emphasizing protection and enhancement of marine and estuarine environments, and in a manner that provides optimum sustained benefits and use to present and future generations.²⁶

2. Marine fisheries resources shall be managed based on the following principles:

(a) The paramount concern of conservation and management measures shall be the continuing health and abundance of the marine fisheries resources of this state.

(b) Conservation and management measures shall be based upon the best information available, including biological, sociological, economic, and other information deemed relevant by the commission.

(c) Conservation and management measures shall permit reasonable means and quantities of annual harvest, consistent with maximum practicable sustainable stock abundance on a continuing basis.

(d) When possible and practicable, stocks of fish shall be managed as a biological unit.

(e) Conservation and management measures shall assure proper quality control of marine resources that enter commerce.

(f) State marine fisheries management plans shall be developed to implement management of important marine fisheries resources.

(g) Conservation and management decisions shall be fair and equitable to all the people of this state and carried out in such a manner that no individual, corporation, or entity acquires an excessive share of such privileges.

(h) Federal fishery management plans and fishery management plans of other states or interstate commissions should be considered when developing state marine fishery management plans. Inconsistencies should be avoided unless it is determined that it is in the best interest of the fisheries or residents of this state to be inconsistent.²⁷

25. *Id.* r. 17-3.041(10)(a),(b).

26. FLA. STAT. § 370.025(1) (1989).

27. *Id.* § 370.025(2)(a)-(h).

3. The state may regulate a fishing vessel outside territorial waters if the vessel is registered in Florida.²⁸
4. The state's policy is to foster aquaculture when it is "consistent with state resource management goals, proprietary interest, environmental protection and antidegradation goals."²⁹
5. In aquatic preserves, aquaculture is presumed to be in the public interest.³⁰

G. Marine Pollution

1. The state's policy is to conserve and protect natural resources. Thus, adequate provision by law must be made to abate water pollution.³¹
2. The state's policy is to protect, maintain, and improve the quality of waters for the propagation of fish and other aquatic life and for industrial, recreational, and other beneficial uses.³²
3. The highest protection will be provided to waterbodies designated as "Outstanding Florida Waters."³³
4. The EPA Administrator may issue permits for ocean dumping of nondredged materials that "will not unreasonably degrade or endanger human health, welfare, or amenities, or the marine environment, ecological systems, or economic potentialities."³⁴
5. Discharges of oil and other hazardous substances into the navigable waters of the United States or into Florida waters is prohibited.³⁵
6. Spillers of oil or other hazardous substances in state or federal waters are responsible for reporting any spill to federal and state authorities and for cleaning up, or paying to clean up, the spill.³⁶
7. No state moneys shall be expended for pollutant cleanup until federal funds have been depleted or the federal government declines to clean up the spill.³⁷

28. Magnuson Fishery Conservation and Management Act, 16 U.S.C. § 1856(a)(3) (1988).

29. FLA. ADMIN. CODE ANN. r. 18-21.004(2)(l) (1987).

30. FLA. STAT. § 258.42(1) (1989).

31. See FLA. CONST. art. II, § 7.

32. Florida Air and Water Pollution Control Act, FLA. STAT. §§ 403.011-.4153 (1989).

33. See *id.* § 403.061(27)(a). See also FLA. ADMIN. CODE ANN. r. 17-3.041(9) (1989).

34. Ocean Dumping Act, 33 U.S.C. § 1412(a) (1982).

35. See Federal Water Pollution Control (Clean Water) Act, 33 U.S.C. §§ 1251-1387 (1982 & Supp. V 1987); Pollutant Spill Prevention and Control Act, FLA. STAT. §§ 376.011-.17, 376.19-.21 (1989).

36. Clean Water Act, 33 U.S.C. § 1321 (1982 & Supp. V 1987); Pollutant Spill Prevention and Control Act, FLA. STAT. § 376.09(1) (1989).

37. FLORIDA DEP'T OF COMMUNITY AFFAIRS, FLORIDA COASTAL OIL SPILL HANDBOOK 8-11 (Feb. 1987).

8. Dischargers of petroleum products are strictly liable for state cleanup costs and for damages to any person or property.³⁸

H. Ocean Energy

11. The federal offshore leasing program for development of oil and gas is intended to reflect, "to the maximum extent practicable, . . . a proper balance between the potential for environmental damage, the potential for discovery of oil and gas, and the potential for adverse impact on the coastal zone."³⁹

2. The Secretary of Interior must accept the recommendations of governors of affected states on outer continental shelf (OCS) lease sales, and development and production plans, if the recommendations "provide for a reasonable balance between the national interest and the well-being of the citizens of the affected State."⁴⁰

3. Outer continental shelf exploration plans, and development and production plans, must be consistent with the coastal zone management plans of affected states.⁴¹

4. "[T]he State of Florida does not object to ecologically sound exploration and development of offshore petroleum resources, provided that such exploration, extraction and transportation activities can be undertaken without endangering Florida's sensitive marine and coastal resources"⁴²

5. The state's policy is to "conserve and control the natural resources of oil and gas of [the] state . . . [and] to encourage and cause the development . . . of [the] natural resources of oil and gas"⁴³

6. Unless the governing authority of a municipality agrees, oil and gas leases are prohibited in the following areas:

(a) . . . lands within the corporate limits of any municipality

(b) . . . lands in the tidal waters of the state, abutting on or immediately adjacent to the corporate limits of a municipality, or within 3 miles of such corporate limits

(c) . . . any improved beach located outside an incorporated town or municipality, or . . . lands in the tidal waters of the state abutting on

38. Pollutant Spill Prevention and Control Act, FLA. STAT. § 376.12(1) (1989).

39. Outer Continental Shelf Lands Act, 43 U.S.C. § 1344(a)(3) (1982).

40. *Id.* § 1345.

41. *See id.* § 1351; Coastal Zone Management Act of 1972, 16 U.S.C. § 1456(c)(3)(B) (1988).

42. Executive Office of the Governor, Governor and Cabinet Resolution of June 2, 1987.

43. FLA. STAT. § 370.06 (1989).

or immediately adjacent to any improved beach, or within 3 miles of an improved beach⁴⁴

7. The Board of Trustees' sovereignty lands management rule prohibits oil and gas leasing less than "one mile seaward of the outer coastline of Florida . . . [unless the] lease stipulates that any drilling shall be conducted from outside said area."⁴⁵

8. Drilling oil or gas wells is prohibited within areas designated as aquatic preserves.⁴⁶

9. Florida law prohibits any structure intended for drilling or production of oil, gas, or other petroleum products to be permitted or constructed one mile inland of the coastline of the state.⁴⁷

10. No petroleum-product drilling structures may be permitted or constructed within one mile of the seaward boundary of any state, local, or federal park, or aquatic or wildlife preserve.⁴⁸

11. No petroleum-product drilling structures may be permitted or constructed within any bay or estuary.⁴⁹

12. Oil and gas leases of submerged sovereignty lands of the state will be approved only "upon adequate demonstration that the proposed activity is *in the public interest*, that the impact upon aquatic resources has been thoroughly considered, and that every effort has been made to minimize potential adverse impacts upon sport and commercial fishing [sic], navigation, and national security."⁵⁰

I. Marine Recreation

1. The Department of Natural Resources has authority to establish by rule restricted boating areas "for any purpose deemed necessary for the safety of the public"⁵¹

2. "Because beach erosion is a serious menace to the economy and general welfare of the people of this state and has advanced to emergency proportion, it is . . . a necessary governmental responsibility to properly manage and protect Florida beaches from erosion and . . . [to] make provision for beach restoration and renourishment projects."⁵²

44. *Id.* § 253.61(1)(a)-(c).

45. FLA. ADMIN. CODE ANN. r. 18-21.004(2)(k) (1987).

46. FLA. STAT. § 258.42(3)(c) (1989).

47. *Id.* § 377.242(1)(a)(4).

48. *Id.* § 377.242(1)(a)(3).

49. *Id.* § 377.242(1)(a)(1).

50. FLA. ADMIN. CODE ANN. r. 18-21.004(2)(k) (1987)(emphasis added).

51. FLA. STAT. § 327.46(1) (1989).

52. *Id.* § 161.088.

3. A beach management program which selects and recommends management measures shall be developed for all the state's sandy beaches.⁵³
4. Beaches below the mean high water line belong to the state and are open to the public.⁵⁴
5. "If the recreational use of the sandy area adjacent to mean high tide has been ancient, reasonable, without interruption and free from dispute, such use, as a matter of custom, should not be interfered with by the owner."⁵⁵
6. "Where the public has established an accessway through private lands to lands seaward of the mean high tide or water line by prescription, prescriptive easement, or any other legal means, development or construction shall not interfere with such right of public access unless a comparable alternative accessway is provided."⁵⁶

III. STATE PLANNING

A. *Planning and Coordination in Florida*

Florida's comprehensive planning is a decentralized process involving planning at the state, regional, and local levels. Planning at the regional and local levels implements state policies and must be consistent with the State Comprehensive Plan (State Plan).

The State Plan was developed by the Executive Office of the Governor (EOG) pursuant to the State and Regional Planning Act of 1984⁵⁷ and was enacted by the legislature in 1985 as chapter 187 of the Florida Statutes. The Plan was intended to provide policy guidance by identifying long-range goals and specific policies for attaining orderly "social, economic, and physical growth" in the state. The statement of legislative intent provides:

The State Comprehensive Plan is intended to be a direction-setting document. Its policies may be implemented only to the extent that financial resources are provided pursuant to legislative appropriation or grants. . . . The plan does not create regulatory authority or authorize the adoption of agency rules, criteria or standards not otherwise authorized by law.⁵⁸

53. See *id.* § 161.161(1)(l).

54. See FLA. CONST. art. X, § 11.

55. *City of Daytona Beach v. Tona Rama, Inc.*, 294 So. 2d 73, 78 (Fla. 1974).

56. FLA. STAT. § 161.55(6) (1989).

57. Ch. 84-257, 1984 Fla. Laws 1166 (codified as amended in scattered sections of FLA. STAT. ch. 186 (1989)).

58. FLA. STAT. § 187.101(2) (1989).

The State Plan comprises twenty-six goals and associated policies. The Coastal and Marine Resources Goal states: "Florida shall ensure that development and marine resource use and beach access improvements in the coastal areas do not endanger public safety or important natural resources. Florida shall, through acquisition and access improvements, make available to the state's population additional beaches and marine environment, consistent with sound environmental planning."⁵⁹

Policies intended to provide direction in implementing this goal relate primarily to coastal development. The policies relevant to marine planning and management include the following:

4. Protect coastal resources, marine resources, and dune systems from the adverse effects of development.
-
6. Encourage land and water uses which are compatible with the protection of sensitive coastal resources.
7. Protect and restore long-term productivity of marine fisheries habitat and other aquatic resources.
8. Avoid exploration and development of mineral resources which threaten marine, aquatic, and estuarine resources.
-
10. Give priority in marine development to water-dependent uses over other uses.⁶⁰

Through state agency functional plans, agencies set out policy directives to guide programs and functions and to implement the State Plan. Functional plans must be consistent with the State Plan and must not conflict with other agency functional plans. The EOG has the responsibility to review agency functional plans for consistency with the State Plan and to mediate conflicts between agencies concerning programs, policies, or functional plans. There is no specific requirement that rules adopted by agencies or that permits issued by them be consistent with the State Plan or the agency's plan.

The State Water Use Plan (SWUP),⁶¹ the State Land Development Plan (SLDP),⁶² and the State Strategic Plan for Information Resources Management⁶³ comprise a special category of agency functional plans. These plans must be prepared in advance of other agency

59. *Id.* § 187.201(9)(a).

60. *Id.* § 187.201(9)(b).

61. *Id.* § 373.036.

62. *Id.* § 380.031(17).

63. *Id.* § 282.3061.

plans and are intended to provide guidance to all state agencies in development of their plans.

The Florida Coastal Management Act of 1978 provides that "[t]he state coastal zone management plan shall be a part of the state comprehensive plan."⁶⁴ At the time of enactment, this provision referred to the state plan mandated by the State Comprehensive Planning Act of 1972. The SWUP and SLDP were also plans required by laws passed prior to the State and Regional Planning Act of 1984. Those plans, however, were specifically incorporated into the new planning process as agency functional plans. There is no reference in the State and Regional Planning Act to the Florida Coastal Management Program (FCMP). The current State Plan is defined in the Act as the "goals and policies contained within the state comprehensive plan initially prepared by the [EOG] and adopted pursuant to [a process involving review by the Administration Commission and enactment by the legislature]."⁶⁵ Because these procedures are not applicable to the FCMP, and the FCMP was not incorporated into the State and Regional Planning Act in any manner, the current status of the FCMP in the state's planning process is not clear. Conversely, however, the State and Regional Planning Act *is* part of the FCMP.

Regional policy plans have been developed by each of the state's eleven regional planning councils. These plans are reviewed by the EOG for consistency with the State Plan and adopted by rule. Along with the State Plan, regional policy plans serve as a basis of review for local government plans.

Local comprehensive plans for coastal communities under the Local Government Comprehensive Planning and Land Development Regulation Act⁶⁶ must contain a coastal element. As would be expected, the requirements relate primarily to land use, but several components directly or indirectly concern the offshore. The coastal element requires an analysis of the impacts of point and nonpoint sources on estuarine water quality.⁶⁷ The comprehensive master plan of any deepwater port within the jurisdiction is also a component of the coastal element. Rules of the Department of Community Affairs require that when several local governments have jurisdiction over parts of a bay, estuary, or harbor, coastal elements should be "consistent and coordinated."⁶⁸

64. *Id.* § 380.21(3)(b).

65. *Id.* § 186.003(8).

66. *Id.* §§ 163.3161-.3243.

67. *See id.* § 163.3178(2)(c).

68. *Id.* § 163.3177(9)(d).

B. *Issues and Recommendations*

Issue: Status of the Coastal Management Plan in the state planning process. Although Florida has a coastal management program that has been approved by the federal government under the Coastal Zone Management Act of 1972,⁶⁹ to say that the state has a coastal management *plan* that identifies the program's goals and policies may be stretching the facts. Florida's program has integrated numerous state programs and has attempted to coordinate agency activities that will affect the coastal zone. For this program to become a plan, the goals, policies, and objectives of the coastal management program in Florida must be articulated in a manner that can be incorporated meaningfully into the state's planning processes.

Recommendation: The goals, objectives, and policies of Florida's Coastal Management Program should be articulated in a coastal management plan that is incorporated fully into the state's planning scheme. The plan would provide a frame of reference for all state agencies in attempting to coordinate activities affecting the coastal zone and would provide guidance for local governments in development of the coastal element of local comprehensive plans.

Note: The Coastal Resources Interagency Management Committee was required to prepare a report for the Governor and legislature addressing integration and coordination of the state coastal zone plan with state, regional, and local plans. See FLA. STAT. § 380.32(6) (1989). The eight-page report, which was submitted on March 1, 1990, contends that the FCMP was "not written or intended to be a direct part of the State Comprehensive Plan" The report identifies several ways the FCMP is integrated into state agency, regional, and local planning. See COASTAL RESOURCES INTERAGENCY MANAGEMENT COMMITTEE REPORT TO THE GOVERNOR AND CABINET, SPEAKER OF THE HOUSE OF REPRESENTATIVES, PRESIDENT OF THE FLORIDA SENATE ON IMPLEMENTATION OF THE FLORIDA COASTAL MANAGEMENT PROGRAM: STATUS REPORT (Mar. 1, 1990).

Issue: Interstate coastal management planning. Although the federal Environmental Protection Agency (EPA) has developed a number of national and regional programs addressing coastal pollution and habitat destruction,⁷⁰ the coastal states of the Southeast and Gulf regions

69. 16 U.S.C. §§ 1451-1464 (1988).

70. See *infra* section VII of this article (discussing federal initiatives relating to the management of marine habitats and protected species).

have not attempted to deal with area-wide coastal management issues in a coordinated manner.

The 1980 amendments to the federal Coastal Zone Management Act of 1972 encourage interstate cooperation in "coordinating . . . coastal zone planning, policies, and programs . . . [and] implementing unified coastal zone policies."⁷¹ In addition to providing for the possibility of federal funding for such efforts, the amendments also give prior congressional consent to interstate agreements or compacts to carry out those purposes.⁷²

Recommendation: The Governor's Office should explore mechanisms for cooperation with other states, including an interstate compact, to coordinate coastal planning, policy development, and state action in the region.

Note: Implementing legislation was passed in 1989 to create the South Atlantic and Gulf States Coastal Protection Compact. In addition to authorizing the Governor to execute a compact on behalf of the state, the legislation set out the purposes and structure of the proposed regional organization. See FLA. STAT. § 380.28(1) (1989).

IV. SUBMERGED LANDS AND JURISDICTION

A. Jurisdiction

1. Federal

Prior to 1945, the only United States claim to the ocean was a three-mile territorial sea. In 1945, the United States started an era of expansive ocean claims by asserting jurisdiction and control over the continental shelf through the famous Truman Proclamation.⁷³ Although the extent of the claim was not specifically delimited, a State Department press release suggested that the claim encompassed the seabed within a depth of 200 meters. The United States later became a party to the 1958 Convention on the Continental Shelf,⁷⁴ which recognized claims to the shelf bounded only by the limits of technology and exploitability.

71. 16 U.S.C. § 1456b(a) (1988).

72. *See id.* § 1456b(b).

73. Proclamation No. 2667, 3 C.F.R. § 67 (1945).

74. Convention on the Continental Shelf, *done* Apr. 29, 1958, 15 U.S.T. 471, T.I.A.S. No. 5578, 499 U.N.T.S. 311.

During the 1960's, ocean claims proliferated internationally. The majority of coastal nations claimed twelve-mile territorial seas. The United States continued to claim a three-mile territorial sea, but also claimed a contiguous zone and fishery zone extending to twelve miles offshore.

A decade of international negotiations during the 1970's culminated in the comprehensive Law of the Sea Treaty⁷⁵ in 1982. Although the United States has not signed or ratified the treaty, the nation has adopted many of the treaty's principles: In 1976, the United States extended exclusive fishery jurisdiction to 200 miles offshore through the Magnuson Fishery Conservation and Management Act;⁷⁶ in 1983, a 200-nautical-mile Exclusive Economic Zone was claimed by proclamation of President Reagan;⁷⁷ and in 1988, President Reagan proclaimed a twelve-mile territorial sea.⁷⁸

2. Florida

Prior to 1947, the State of Florida had exercised its jurisdiction to manage territorial sea resources and to regulate citizens and registered vessels even beyond the territorial sea.⁷⁹ In 1947, the United States Supreme Court found that the coastal states did not own the lands or resources of the territorial sea seaward of the mean low water line and that the federal government had "paramount rights" in and "full dominion over the resources" of the territorial sea.⁸⁰ The Florida Supreme Court interpreted this as authorizing state concurrent jurisdiction over the territorial sea in areas where the federal government had not exercised its paramount rights.⁸¹

Congress attempted to clarify the interests of the state and federal governments in the Submerged Lands Act of 1953.⁸² The states were given "all right, title, and interest" to the land and natural resources of the lands beneath navigable waters within the boundaries of the

75. United Nations Convention on the Law of the Sea, *done* Dec. 10, 1982, U.N. Doc. A/CONF. 62/122, *reprinted in* 21 I.L.M. 1261 (1982).

76. See 16 U.S.C. § 1811 (1988).

77. Proclamation No. 5030, 3 C.F.R. § 22 (1983).

78. Proclamation No. 5928, 3 C.F.R. § 547 (1988).

79. See *Skiriotes v. Florida*, 313 U.S. 69, 77 (1941), in which the United States Supreme Court stated:

If the United States may control the conduct of its citizens upon the high seas, we see no reason why the State of Florida may not likewise govern the conduct of its citizens upon the high seas with respect to matters in which the State has a legitimate interest and where there is no conflict with acts of Congress.

80. *United States v. California*, 332 U.S. 19 (1947).

81. *Carnasion v. Paul*, 53 So. 2d 304 (Fla. 1951).

82. 43 U.S.C. §§ 1301-1315 (1982 & Supp. V 1987).

states. The federal government retained its navigational servitude and constitutional authority to regulate and control commerce, navigation, national defense, and international affairs. Congress also confirmed federal jurisdiction over the seabed and natural resources of the continental shelf beyond the territorial sea boundaries.⁸³

B. Boundaries

The seaward boundaries of the states were declared in the Submerged Lands Act of 1953 to be three geographic miles for each of the original coastal states. States subsequently admitted to the Union could claim the three-mile boundary, the boundary as it existed before the state entered the Union, or a more expansive claim with the approval of Congress.⁸⁴ The term "boundaries" was specifically limited to three geographic miles in the Atlantic and Pacific Oceans and three marine leagues in the Gulf of Mexico.⁸⁵

In two separate suits against the United States, Florida claimed extended jurisdiction in the Gulf of Mexico and the Atlantic Ocean. In the 1960 decision, the United States Supreme Court upheld the three-marine-league claim in the Gulf of Mexico based on approval by Congress of Florida's 1868 Constitution.⁸⁶ The subsequent action resulted in a consent decree in 1976 which (1) limited Florida's boundary to three geographic miles in the Atlantic Ocean; (2) reaffirmed the three-marine-league boundary in the Gulf of Mexico, but limited its measurement to the coastline as it existed in 1868; (3) recognized no inland waters or historic bays on Florida's coast; and (4) delimited the boundary between the Gulf of Mexico and the Atlantic Ocean.⁸⁷ A 1986 amendment to the Submerged Lands Act provided that any boundary between a state and the United States that is fixed by a final decree of the United States Supreme Court will remain immobile; that is, the boundary will not be ambulatory and will not reflect changes in the coastline from which the boundary is measured.⁸⁸

Florida's lateral seaward boundaries—the boundaries between the territorial sea of Florida and the waters of Alabama and Georgia—have been established by interstate compact and approved by Congress. The boundaries are described both in the Florida Constitution

83. See Outer Continental Shelf Lands Act, 43 U.S.C. §§ 1331-1356 (1982 & Supp. V 1987).

84. 43 U.S.C. § 1312 (1982).

85. *Id.* § 1301(b) (Supp. V 1987).

86. *United States v. Florida*, 363 U.S. 121 (1960).

87. *United States v. Florida*, 425 U.S. 791 (1975).

88. See Outer Continental Shelf Lands Act Amendments of 1985, Pub. L. No. 99-272, § 8005, 100 Stat. 82, 151 (1986) (amending 43 U.S.C. § 1301(b) (1982)).

and in the Florida Statutes.⁸⁹ The Alabama-Florida boundary was approved by Congress in 1954 and extends in a generally southerly direction from the mouth of the Perdido River to the limit of the territorial sea. The Georgia-Florida boundary, approved in 1970, extends due east from the mouth of the St. Marys River through the territorial sea.

C. *The Territorial Sea as State Lands*

The Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees) is vested with title to all state lands under chapter 253 of the Florida Statutes. The Board of Trustees was established in 1855 to administer internal improvement lands conveyed to Florida by the United States at statehood and lands acquired under the federal Swamp and Overflowed Lands Act.⁹⁰ In 1919, sovereignty tidal lands were also conveyed by the Florida Legislature to the Board of Trustees. Currently, the Board of Trustees is charged with acquisition, administration, management, control, supervision, conservation, protection, and disposition of state lands, including all lands owned by the state by virtue of its sovereignty (lands under navigable waters), tidal lands, and all lands covered by shallow waters of the ocean and gulf, including bays and lagoons.⁹¹

Section 253.77 of the Florida Statutes prohibits use of sovereign lands without permission of the Board of Trustees. Moreover, both the Florida Constitution and Florida Statutes limit the sale or use of tidal lands. For example, article X, section 11, of the Florida Constitution provides that lands below navigable waters within the boundaries of the state may be sold when authorized by law, but only when in the public interest. "Private use of portions of such lands may be authorized by law, but only when not contrary to the public interest."⁹²

Chapter 253 of the Florida Statutes requires the Department of Natural Resources (DNR) to prepare a written report on the conservation effects of any conveyance of submerged tidal lands. Sale or transfer of the land requires a finding that the conveyance is in the public interest,⁹³ a vote of at least five of the seven Trustees,⁹⁴ and public notice of the sale.⁹⁵ If objections to the sale are filed, the Board of

89. See FLA. CONST. art. II, § 1; FLA. STAT. ch. 6 (1989).

90. Act of Sept. 28, 1850, ch. 84, 9 Stat. 519 (codified at 43 U.S.C. §§ 982-984 (1988)). Although the official short title is the Swamp Land Act of 1850, the Act is commonly referred to as the Swamp and Overflowed Lands Act.

91. FLA. STAT. § 253.03(1) (1989).

92. FLA. CONST. art. X, § 11.

93. FLA. STAT. § 253.12(2)(a) (1989).

94. *Id.* § 253.02(2).

95. *Id.* § 253.115.

Trustees must determine the merits of the objections and withdraw the tidal lands from sale if the Board finds that the sale would

- (a) Be contrary to the public interest;
- (b) Interfere with the lawful rights granted riparian owners;
- (c) Be, or result in, a serious impediment to navigation;
- (d) Interfere with the conservation of fish, marine and other wildlife, or other natural resources, including beaches and shores, to such an extent as to be contrary to the public interest; or
- (e) Result in the destruction of oyster beds, clam beds, or marine productivity, including, but not limited to, destruction of natural marine habitats, grass flats suitable as nursery or feeding grounds for marine life, and established marine soils suitable for producing plant growth of a type useful as nursery or feeding grounds for marine life to such an extent as to be contrary to the public interest.⁹⁶

The current policy of the Board of Trustees, however, is not to sell additional submerged lands. The state will continue ownership and management of such lands, but will allow private use only through leases, easements, or other such forms of conveyances.

D. Management of Submerged Tidal Lands

Florida law requires that all state lands be managed to “provide the greatest combination of benefits to the people of the state.”⁹⁷ However, the law also mandates that *all* submerged lands be considered single-use lands, “managed primarily for the maintenance of essentially natural conditions, the propagation of fish and wildlife, and public recreation.”⁹⁸

Policy for planning and management of the territorial sea is affected by at least three documents: 1) the Conceptual State Lands Management Plan; 2) the Department of Natural Resources Agency

96. *Id.* § 253.12(4)(a)-(e).

97. *Id.* § 253.034(2).

98. *Id.* § 253.034(1)(b). Single-use management is “management for one particular purpose to the exclusion of all other purposes.” State agencies may include compatible secondary purposes that do not detract from or interfere with the primary management purpose. *Id.*

Compare, however, subsection (6) of the same section, which provides:

This section [§ 253.034] shall not be construed so as to affect:

(a) Other provisions of this chapter relating to oil, gas, or mineral resources.

(b) The exclusive use of state-owned land subject to a lease by the Board of Trustees . . . of state-owned land for private uses and purposes.

How one is to reconcile this subsection with the concept of single-use management is unclear; it appears to be clearly inconsistent.

Functional Plan; and 3) state agency land management plans.⁹⁹ The Conceptual State Lands Management Plan¹⁰⁰ was adopted by the Board of Trustees in 1981 as the first phase in development of a comprehensive plan for all state lands. In addition to incorporating the concept of single-use management, the Program Element Policy addressing submerged lands includes the following policies:¹⁰¹

- 1) Discourage all private exclusionary uses of submerged lands.
- 2) Limit use of state-owned submerged lands to water-dependent uses, unless the Board of Trustees finds that a greater public purpose would be served by a specific exception.
- 3) Prohibit all future leases for stilt houses on state submerged lands.
- 4) Terminate all unauthorized uses of state submerged lands.
- 5) Ensure that all activities on state submerged lands avoid adverse impacts on other authorized uses.

The DNR Agency Functional Plan¹⁰² was developed to set out how DNR will carry out the goals and policies of the State Comprehensive Plan.¹⁰³ Although the Functional Plan does not specifically address submerged lands management, the Coastal and Marine Resources Goal of the Plan touches on submerged lands management in the Protection of Marine Resources policy cluster:

Protect and restore long-term productivity of marine fisheries habitat and other aquatic preserves.

Avoid the exploration and development of mineral resources which threaten marine, aquatic, and estuarine resources.

The Protection of Natural Systems policy cluster also touches on submerged lands management issues and reflects the single-use management strategy required for submerged lands: "Conserve forests,

99. Policy for planning and management of state lands also relies on chapters 253 and 258 of the Florida Statutes, parts 16-18 and 16-20 of the Florida Administrative Code, and the 1985 Blue Ribbon Committee Report of the Florida Department of Natural Resources entitled *Towards a Proactive Marina Siting Program Policy*.

100. BUREAU OF STATE LANDS MANAGEMENT, DEP'T OF NATURAL RESOURCES, CONCEPTUAL STATE LANDS MANAGEMENT PLAN (adopted by the Board of Trustees of the Internal Improvement Trust Fund Mar. 17, 1981).

101. *Id.* at 46-47. Resource and Program Element Policies of the Conceptual Plan concerning other aspects of marine habitat and marine species will be discussed in other sections of this article.

102. FLORIDA DEP'T OF NATURAL RESOURCES, AGENCY FUNCTIONAL PLAN 1987-1991 (Jan. 1988) [hereinafter DNR AGENCY FUNCTIONAL PLAN].

103. FLA. STAT. § 186.021(1) (1989).

wetlands, fish, marine life, and wildlife to maintain their environmental, economic, aesthetic and recreational values.”

In addition to the above plans, all state agencies are required to submit land management plans to the Division of State Lands regarding lands managed by the agency.¹⁰⁴ Land management plans that affect submerged tidal lands include plans for aquatic preserves, state parks (especially John Pennekamp Coral Reef State Park), marine sanctuaries (Key Largo and Looe Key), and estuarine research reserves (Rookery Bay and Apalachicola River and Bay). The Agency Functional Plan sets 1991 as a target date for completion of management plans for all of Florida’s state parks and reserves.

E. *The Public Trust Doctrine*

The public trust doctrine in Florida has flowed from the English and United States common-law theory that the sovereign holds title to lands beneath navigable waters in trust for the people “for, at least, the purposes of navigation and fishing, and other implied purposes.”¹⁰⁵ Two early cases, *State v. Black River Phosphate Co.*¹⁰⁶ and *Broward v. Mabry*,¹⁰⁷ firmly established the public trust doctrine in Florida common law. More recently, the Florida Supreme Court buttressed the doctrine in *Coastal Petroleum Co. v. American Cyanamid Co.*,¹⁰⁸ and the United States Supreme Court reiterated the doctrine in *Phillips Petroleum Co. v. Mississippi*.¹⁰⁹ Article X, section 11, now incorporates the public trust doctrine into Florida constitutional law: “The title to lands under navigable waters, within the boundaries of the state, which have not been alienated, including beaches below mean high water lines, is held by the state, by virtue of its sovereignty, in trust for all the people.”

The public trust concept, as reflected in Florida case law, statutes, and rules, incorporates at least the following principles:

1) Both tidal lands under the territorial sea and inland submerged lands under navigable waters are sovereignty lands subject to the public trust. Lands under navigable waters conveyed by the Submerged Lands Act of 1953 are lands held by the state by virtue of its sover-

104. *Id.* § 253.034(4).

105. *State v. Black River Phosphate Co.*, 32 Fla. 82, 106, 13 So. 640, 648 (1893).

106. 32 Fla. 82, 13 So. 640 (1893).

107. 58 Fla. 398, 50 So. 826 (1909).

108. 492 So. 2d 339 (Fla. 1986), *cert. denied sub nom. Mobil Oil Corp. v. Board of Trustees*, 479 U.S. 1065 (1987).

109. 484 U.S. 469 (1988).

eignty in the same manner as submerged lands that passed from the United States to Florida upon statehood.¹¹⁰

2) The Board of Trustees has the duty to hold sovereignty lands in the public trust.¹¹¹

3) The trust in which sovereignty lands are held is governmental and cannot be wholly alienated.¹¹²

4) The public trust in Florida extends to protection of public interests beyond the traditional uses of navigation and fishing. Florida courts have specifically mentioned "bathing" as a public trust use and have discussed trust uses in terms of "navigation, commerce, fishing, bathing, and *other easements* allowed by law"¹¹³ and "navigation and *other useful purposes* afforded by the waters over such lands."¹¹⁴

5) Sovereignty lands are held by the state primarily for the use of the people in common and not for conversion to other values or reduction to private ownership.¹¹⁵

6) The state may make limited disposition of portions of submerged lands when in the public interest, but not so as to divert the lands from their proper uses or materially impair the rights of the people as a whole as to navigation and other public trust uses.¹¹⁶

F. Local Government Jurisdiction¹¹⁷

Florida's coastal counties are described in chapter 7 of the Florida Statutes as including waters of the Atlantic and the Gulf of Mexico within state jurisdiction. Theoretically then a municipality may annex coastal waters; neither the Florida Legislature nor Florida courts have addressed this issue specifically.

Local governments can substantially influence offshore activities through land use regulation and input into state leasing decisions. Because offshore uses generally require onshore support facilities, local government planning and zoning to include or exclude such facilities from their jurisdictions can greatly influence offshore development. Local land use decisions also greatly impact the ability of the state to protect and manage aquatic preserves, estuarine research reserves, and

110. See FLA. STAT. §§ 253.01(1)(a), 253.12(1) (1989).

111. See *id.* § 253.03(1).

112. *State ex rel. Ellis v. Gerbing*, 56 Fla. 603, 612, 47 So. 353, 356 (1908).

113. *Broward v. Mabry*, 58 Fla. 398, 407-08, 50 So. 826, 829 (1909)(emphasis added).

114. *Gerbing*, 56 Fla. at 612, 47 So. at 356 (emphasis added).

115. *Id.* at 608-09, 47 So. at 355.

116. *Id.* at 611-12, 47 So. at 356.

117. For a complete discussion of this issue, see Hamann, *Florida Local Governments and Oil and Gas Leasing of State Territorial Waters*, in J. MILLER & M. RINKEL, A REPORT ON OIL AND GAS LEASING IN FLORIDA OFFSHORE WATERS, Appendix B (1984).

other fragile habitats. In addition, municipalities have a veto power over state oil and gas leases in the limits of the cities and within three miles of the cities' limits. County consent is required for state oil and gas leases within three miles of an improved beach.

G. *Issues and Recommendations*

Issue: Effect of inconsistencies in the state and federal territorial sea boundaries. Until recently, the United States government claimed only a three-mile territorial sea jurisdiction in international relations, yet it recognized a three-marine-league boundary for Florida in the Gulf of Mexico. This situation made the relationship between the federal government and the state in the area from three miles to three leagues offshore often unclear. On December 27, 1988, President Reagan proclaimed the extension of the territorial sea of the United States to twelve miles. The proclamation primarily affected only the federal government in international relations and purported to leave domestic relations unchanged. The statement provided: "Nothing in this Proclamation: (a) extends or otherwise alters existing Federal or State law or any jurisdiction, rights, legal interests, or obligations derived therefrom" ¹¹⁸

The terms "territorial sea" and "navigable waters" occur frequently in federal legislation. In acts dealing directly with the allocation of resources, such as the Outer Continental Shelf Lands Act,¹¹⁹ Florida's three-marine-league jurisdiction in the Gulf of Mexico is recognized. The Magnuson Fishery Conservation and Management Act (MFCMA) delimits the interior boundary of the federal exclusive economic zone as a "line coterminous with the seaward boundary of each of the coastal states."¹²⁰ Other federal legislation treats the territorial sea only in terms of the asserted United States jurisdiction. For example, the general definitions of the Clean Water Act provide:

118. Proclamation No. 5928, 3 C.F.R. § 547 (1988).

119. 43 U.S.C. §§ 1331-1356 (1982 & Supp. V 1987). In section 1331(a), "outer continental shelf" is defined as submerged lands lying seaward of navigable waters as defined in the Submerged Lands Act of 1953. The Submerged Lands Act definition of lands under navigable waters includes submerged lands within a seaward state "boundary as it existed at the time such State became a member of the Union, or as heretofore approved by Congress" beyond three miles. *Id.* § 1301(a)(2) (1982).

120. 16 U.S.C. § 1802(6) (1988). The MFCMA is generally inconsistent in distinguishing "territorial sea of the United States" from the "seaward boundary of a coastal state." The fishery conservation zone is also described as being "contiguous to the territorial sea of the United States." "High seas" is defined as "all waters beyond the territorial sea of the United States and beyond any foreign nation's territorial sea, to the extent that such sea is recognized by the United States." *Id.* § 1802(13). The section on State jurisdiction, however, is clear in stating that the Act does not affect jurisdiction of a state *within its boundaries*. *See id.* § 1856(a)(1).

(7) The term "navigable waters" means the waters of the United States, including the territorial seas.

(8) The term "territorial seas" means the belt of seas measured from the line of ordinary low water along that portion of the coast which is in direct contact with the open sea and the line marking the seaward limit of inland waters, and *extending seaward a distance of three miles*.¹²¹

The federal Coastal Zone Management Act of 1972 (CZMA) defines the seaward extent of the coastal zone as the limit of the United States' territorial seas, *i.e.*, three nautical miles at the time of enactment.¹²² The Act does not explicitly limit, however, the definition of territorial sea to three miles. Although Florida's Coastal Management Program recognizes the federal three-mile limit,¹²³ the state's operating procedures have treated the entire territorial sea as part of the state's coastal zone.

Because the terms "territorial sea" and "navigable waters" have different meanings in different contexts, and because Florida's and the federal government's interpretations of what was transferred by the Submerged Lands Act of 1953 differ, conflicts have arisen. The federal government's position essentially is that the Submerged Lands Act boundary defines only the limits within which the state has "resource rights" that are paramount to the federal government. The Submerged Lands Act could not convey title or rights the United States did not claim or have. The State of Florida, on the other hand, asserts that the Submerged Lands Act did much more than allocate mineral rights. Section 1311(a) of the Act "recognized, confirmed, established, and vested" title to and ownership of lands and natural resources beneath navigable waters and the "right and power to manage, administer, lease, develop, and use" the lands in "accordance with applicable State law." As a consequence of the state's title, ownership, right, and power, Florida claims authority to regulate, through its police power, uses of the territorial sea's land and waters that affect the natural resources.¹²⁴

If the presidential proclamation has no effect on domestic claims and interest, extension of the federal territorial claim does not address

121. 33 U.S.C. § 1362 (1982) (emphasis added). Florida is currently contesting rules under these provisions.

122. See 16 U.S.C. § 1453(1) (1988).

123. U.S. DEP'T OF COMMERCE & FLA. DEP'T OF ENVTL. REG., THE FLORIDA COASTAL MANAGEMENT PROGRAM, FINAL ENVIRONMENTAL IMPACT STATEMENT II-11 (Aug. 1981).

124. For a complete discussion of this issue, see Christie, *Making Waves: Florida's Experience with Extended Territorial Sea Jurisdiction*, 1 TERRITORIAL SEA J. 81-103 (1990).

these issues. These conflicting assertions, therefore, will continue to raise a number of questions:

1) What did the Submerged Lands Act of 1953 convey to Florida—"title and ownership," or merely "all right, title, and interest of the United States, if any it has, in and to all said lands"?

2) Does the Submerged Lands Act of 1953 create a type of "legal estoppel" requiring federal recognition of Florida's *title* to the three-marine-league territorial sea upon the United States claiming the area?

3) Should Florida's entire territorial sea be recognized for purposes of the Clean Water Act and consistency provisions of the Coastal Zone Management Act?

4) Do all Florida laws that apply to the territorial sea within three miles also apply to the area from three miles to three marine leagues?

5) Does the public trust doctrine apply to Florida's entire territorial sea?

Recommendations: The State of Florida should continue to assert full jurisdiction over the state territorial sea in the Gulf of Mexico. To assure recognition of Florida's authority within its seaward boundaries, the state should also take the following actions:

1) The State should attempt to negotiate memoranda of understanding with the Environmental Protection Agency (EPA) and the United States Army Corps of Engineers (Corps), providing that the EPA and the Corps (a) will recognize state water quality standards and the state's authority to regulate beyond three miles, and (b) will find that federal activity within the marine boundaries of the state may "directly affect" the coastal zone within the meaning of the consistency provisions of the Coastal Zone Management Act.

2) The State should petition its congressional legislators to introduce a Clean Water Act amendment requiring water quality certification by Florida for federal National Pollutant Discharge Elimination System permits issued in the three-mile to three-league zone of the Gulf of Mexico.

3) The State should petition its congressional legislators to introduce a CZMA amendment which redefines coastal zone boundaries to include all lands under tidal waters within a state's seaward boundaries; or, alternatively, which provides that federal activities within a state's seaward boundaries may directly affect the coastal zone within the meaning of the consistency provisions.

4) The State should, if necessary, litigate federal attempts to limit the nature of Florida's title to tidal lands within its seaward boundaries or to limit the authority of the state to regulate that area through its police power.

Issue: Federal legislation addressing extension of the twelve-mile territorial sea. Until recently, the United States was one of only twelve nations that continued to claim a three-mile territorial sea. Defense Department concerns for navigation of strategic international straits had historically been the basis for maintaining the three-mile jurisdiction, but the prospect of states demanding jurisdiction and control of resources in the three- to twelve-mile area had also been a factor in continuation of the limited claim. One of the anticipated benefits of an expansion of the United States territorial sea was the concurrent extension of a twenty-four-mile contiguous zone for customs, drug enforcement jurisdiction, and environmental protection. Unfortunately, the presidential proclamation does not address the issue.

Federal extension of jurisdiction also does not clarify the federal/state relationship in the extended territorial sea. Because state territorial sea limits are expressed in specific distances in the Submerged Lands Act of 1953, the legislation would not automatically extend state jurisdiction to the limits of the federal territorial sea. Moreover, because the proclamation purports to affect only international relations, domestic relations remain unclear. Numerous federal laws require detailed analysis to determine whether their application should be extended to twelve miles.

Recommendations: Florida should support legislation that more definitively addresses issues raised by extension of the territorial sea. Federal legislation should also extend a twenty-four-mile contiguous zone to enhance drug enforcement and environmental protection. In addition, the State should support the establishment of a commission for a national ocean policy study. The study would provide a forum and an opportunity to review the application of federal laws beyond three miles and to reexamine the federal/state relationship offshore.

V. MARINE SALVAGE, FINDS, AND HISTORIC PRESERVATION

A. Background

Shipwrecks are some of Florida's most important historic sites. Despite the fact that shipwrecks within the territorial sea are located on or in state lands, these sites may be among the least protected historical and archaeological features of the state. New technologies and improved research techniques have led to the discovery of numerous vessels and have triggered major disputes among private salvors, recreational divers, historians and archaeologists, and the State of Florida.

George R. Bass, President of the Institute of Nautical Archeology, states succinctly the view of many marine archaeologists:

Early shipwrecks are being looted at an alarming rate around the world. There is no public outcry. The public, in fact, usually applauds the looters. Intelligent people who would stoutly defend land monuments such as Mount Vernon from being dismantled for private gain, by the sale of bricks and stones as souvenirs, feel that shipwrecks are resources to be mined in the name of free enterprise.¹²⁵

Private salvors, on the other hand, do not perceive themselves as "looters." They argue that shipwrecks are not usually found by archaeologists, because states and institutions generally lack the funding for the archival research and the expensive expeditions used to find or excavate historic wreck sites. Wrecks are most often found by sport divers or professional salvors, making state archaeologists largely dependent on the cooperation of these groups to document, recover, and preserve artifacts of historical significance. Moreover, salvors assert that a large percentage of privately salvaged artifacts become part of museum or research collections through donation or sale. The discovery of shipwrecks and the use of proper archaeological procedures in the recovery and preservation of artifacts benefit historians, and public and private archaeologists, and therefore should be encouraged and rewarded.

"Treasure hunting" is perceived by the public as a glamorous and exciting life, filled with prospects of wealth beyond one's wildest dreams.¹²⁶ Even courts have contributed to the aura of romance and adventure surrounding the treasure hunters. In *Cobb Coin Co. v. The Unidentified, Wrecked and Abandoned Sailing Vessel (Cobb Coin I)*, for example, a federal district court dramatically described the historical background of the case:

In the early morning hours of July 31st [1715], the wind suddenly shifted to the east-northeast, and the hurricane struck with all its

125. Bass, *The Men Who Stole the Stars*, 12 SEA HISTORY 30, 30 (Fall 1979), reprinted in 4 EARLY MAN MAGAZINE 3, 3 (1982).

126. Disputing this perception, treasure salvor Bob Marx has stated:

[N]o one, no matter how lucky or skillful, can ever make a reasonable living from the commercial salvage of ancient shipwrecks. I have been one of the most successful salvors in the field and have found millions of dollars worth of treasures and artifacts, yet after paying all the costs involved in the search, recovery, and preservation of the artifacts, not to mention the shares paid to financial backers, governments, and the divers employed on each venture, I have not made a proper living from this work. . . . The only people who make any big money in this field are those who get gullible people to invest in wildly hyped, highly publicized treasure hunt schemes which grossly exaggerate the actual amounts of treasure.

Giesecke, *The Abandoned Shipwreck Bill: Protecting Our Threatened Cultural Heritage*, —ARCHAEOLOGY 50, 53 (July/Aug. 1987).

fury. . . . Ultimately, as the oaken hulls of the once proud and mighty Spanish Treasure Fleet were ripped by the cruel coral of the Florida coast, the seawater poured into the smashed ships and they heeled over and sank. . . . Destiny brought the ghosts of these Spanish Galleons, that had set sail bravely from Havana Harbor July 24, 1715, to a rendezvous in an Admiralty Court at the United States Courthouse in Key West, Florida, two hundred and sixty-six years later on July 27, 1981.¹²⁷

During the last two decades, numerous shipwreck cases have addressed the propriety of the applying the maritime law of salvage or finds and the issues of jurisdiction, preemption, ownership, and eleventh amendment immunity of states from suit. The courts have not been entirely consistent in their conclusions. The most important principle to emerge from these cases is that in *in rem* admiralty cases federal courts have no power to adjudicate a state's interest in a shipwreck or its antiquities without the state's consent.¹²⁸ In addition, the federal government apparently cannot claim ownership of wrecks on the continental shelf outside the territorial sea based on the Abandoned Property Act,¹²⁹ the Antiquities Act of 1906,¹³⁰ the Truman Proclamation,¹³¹ or the Outer Continental Shelf Lands Act.¹³² The federal government does protect, however, under the Antiquities Act, shipwreck sites on lands owned or controlled by the federal government, including national parks and national marine sanctuaries.¹³³

Even in the application of federal maritime and admiralty law, questions persist concerning whether the law of salvage or of finds is appropriate and how the tests for these laws are to be applied. Under the law of salvage, the original owner retains title to goods saved from peril by a salvor. However, the salvor who meets certain requirements is entitled to a reward for rescuing the goods from marine peril based on the labor, expense, skill, degree of peril to the salvors and the property, and value of the property involved. In the case of ancient shipwrecks, many courts, including the Fifth and Eleventh Circuit Courts of Appeals, reject the legal fiction of salvage law that the

127. 525 F. Supp. 186, 190 (S.D. Fla. 1981).

128. See, e.g., Florida Dep't of State v. Treasure Salvors, Inc., 458 U.S. 670 (1982).

129. 40 U.S.C. § 410 (1982).

130. 16 U.S.C. §§ 431-433 (1988).

131. Proclamation No. 2667, 3 C.F.R. § 67 (1945).

132. 43 U.S.C. §§ 1331-1356 (1982 & Supp. V 1987). See also *Treasure Salvors, Inc. v. The Unidentified Wrecked and Abandoned Sailing Vessel*, 569 F.2d 330, 337-40 (5th Cir. 1978).

133. See *Treasure Salvors, Inc.*, 569 F.2d at 337. See also *Klein v. The Unidentified Wrecked and Abandoned Sailing Vessel*, 758 F.2d 1511 (11th Cir. 1985).

“owner intends to return” and the application of salvage law to ancient shipwrecks.¹³⁴

Under the law of finds, a finder who takes possession and exercises control over lost or abandoned property acquires title. However, the property is not considered legally lost if it is embedded in the soil or if the owner of the land has constructive possession of the property.¹³⁵

Common law principles do not specifically address the issue of preservation of historical and archaeological artifacts during salvage operations, but admiralty courts have begun to fashion rules. For example, in *Chance v. Certain Artifacts Found & Salvaged from The Nasheville*, the court refused any salvage award because, instead of “rescuing” the antiquities from marine peril, the salvors were increasing the likelihood of their deterioration.¹³⁶ Likewise, the court in *Cobb Coin Co. v. The Unidentified, Wrecked and Abandoned Sailing Vessel (Cobb Coin II)* held “that in order to state a claim for salvage award on an ancient vessel of historical and archaeological significance, it is an essential element that the salvors document to the Admiralty Court’s satisfaction that it has preserved the archaeological provenance of a shipwreck.”¹³⁷ In other words, these courts have found that evidence of preservation is not just a standard for determining the amount of or enhancing the salvage award, but is also a threshold requirement for determining entitlement to any salvage award.

Caught in the middle of the emotional, highly technical, and enormously expensive legal dispute between the private salvors and the state are the recreational and sport divers. Preservation is clearly in the interest of divers who enjoy the opportunity and excitement of “diving on” historic wrecks, and teams of archaeologists and recreational divers often jointly research wreck sites. However, divers often side with the salvors because of fear that state management will mean registration requirements, fees, and restricted access and, perhaps, because of some anticipation of finding an unexpected treasure trove. Since the transition from sport diver to private salvor may take place quite rapidly upon the discovery of a gold doubloon, some commentators suggest that the sport diver/salvor dichotomy is a false one.

134. See, e.g., *Treasure Salvors, Inc.*, 569 F.2d 330; *Klein*, 758 F.2d 1511.

135. See *Klein*, 758 F.2d 1511 (finding that the United States had constructive possession of a ship embedded in the soil of Biscayne Bay National Park and that a “finder” was entitled to no salvage award). See also *Chance v. Certain Artifacts Found & Salvaged from The Nasheville*, 606 F. Supp. 801 (S.D. Ga. 1984), *aff’d*, 775 F.2d 302 (11th Cir. 1985) (declaring Georgia the owner of a Confederate raider embedded in the Ogeechee River).

136. 606 F. Supp. 801 (S.D. Ga. 1984), *aff’d*, 775 F.2d 302 (11th Cir. 1985).

137. 549 F. Supp. 540, 559 (S.D. Fla. 1982) (emphasis in original).

B. *The Abandoned Shipwreck Act of 1987*¹³⁸

After several years of debate, Congress enacted the Abandoned Shipwreck Act of 1987 (Shipwreck Act) in the spring of 1988. Congress exercised its sovereign prerogative in claiming title to any abandoned shipwreck embedded in submerged lands or coralline formations of a state. Congress then transferred that title to the state in or on whose submerged lands the wreck may lie.¹³⁹ Thus, federal admiralty jurisdiction over salvage activities no longer applies to such shipwrecks within a state's territorial sea, except for salvage actions instituted in federal court prior to April 28, 1988.¹⁴⁰

Congress found that certain abandoned shipwrecks are the type of resources that states should manage, because they are "irreplaceable State resources for tourism, biological sanctuaries, and historical research," and because they offer unique recreational and educational opportunities.¹⁴¹ The Shipwreck Act attempts to address the multi-use aspects of the situation by directing states to develop the following "appropriate and consistent" policies:

- (A) protect natural resources and habitat areas;
- (B) guarantee recreational exploration of shipwreck sites; and
- (C) allow for appropriate public and private sector recovery of shipwrecks consistent with the protection of historical values and environmental integrity of the shipwrecks and the sites.¹⁴²

The Act also encourages the states to create underwater parks to provide additional protection and provides funds under the National Historic Preservation Act¹⁴³ for the "study, interpretation, protection, and preservation of historic shipwrecks and properties."¹⁴⁴

The Shipwreck Act requires the Director of the National Park Service within the Department of Interior to issue guidelines "to encourage the development of underwater parks and . . . administrative cooperation."¹⁴⁵ The proposed guidelines issued in April 1989 seek "to enhance cultural resources, foster a partnership among the vari-

138. 43 U.S.C.A. §§ 2101-2106 (West Supp. 1989).

139. The Shipwreck Act creates no complex jurisdictional problems, however, since the Act relies on the Submerged Lands Act definition of "submerged lands," which recognizes Florida's extended jurisdiction in the Gulf of Mexico. In other words, even shipwrecks in the area of the Gulf between three-miles and three-leagues are undisputedly the property of the state.

140. *See id.* § 2106(c).

141. *Id.* § 2103(a)(1).

142. *Id.* § 2103(a).

143. 16 U.S.C. § 470 (1988).

144. 43 U.S.C.A. § 2103(b) (West Supp. 1989).

145. *Id.* § 2104(a).

ous interested groups, facilitate recreational access and use, and recognize the interests of those engaged in shipwreck discovery or salvage."¹⁴⁶ The guidelines are available to assist states in developing legislation and management programs for shipwreck sites covered by the legislation.¹⁴⁷ The federal government is granted no authority to review state programs, and the transfer of ownership of shipwrecks is not dependent on federal approval of state management schemes.

C. *Florida's Management of Historic Shipwreck Sites*

It is . . . declared to be the public policy of the state that all treasure trove, artifacts, and such objects having intrinsic or historical and archaeological value which have been abandoned on state-owned lands or state-owned sovereignty submerged lands shall belong to the state with the title thereto vested in the Division of Historical Resources of the Department of State for the purposes of administration and protection.¹⁴⁸

Through the provisions of the Florida Historical Resources Act,¹⁴⁹ Florida has claimed title to shipwrecks and other submerged antiquities since 1967. The Division of Historical Resources, in which title to historic wrecks abandoned on state lands is vested, has the responsibility to survey and maintain an inventory of historic resources and to develop a comprehensive statewide historic preservation plan. The Division, which was established to develop and administer a state program meeting the requirements of the National Historic Preservation Act,¹⁵⁰ also cooperates with federal and state agencies, local governments, organizations, and individuals in planning, development, programs, and public education and information. The Division has broad authority to "[t]ake such other actions necessary or appropriate to locate, acquire, protect, preserve, operate, interpret, and promote the location, acquisition, protection, preservation, operation, and interpretation of historic resources."¹⁵¹ The Division also has authority to establish professional standards for preservation of historic resources in state ownership or control. State policy in the Florida Historical Resources Act emphasizes that historic properties are irreplaceable,

146. Abandoned Shipwreck Act Guidelines, 54 Fed. Reg. 13,642 (1989)(proposed April 4, 1989).

147. *Id.*

148. FLA. STAT. § 267.061(1)(b) (1989).

149. FLA. STAT. ch. 267 (1989) (formerly the Florida Archives and History Act).

150. 16 U.S.C. § 470 (1988).

151. FLA. STAT. § 267.061(3)(i) (1989).

nonrenewable resources and should be managed to preserve the legacy for future generations. State-owned and state-controlled historic resources, therefore, should be administered in "a spirit of stewardship and trusteeship."¹⁵²

The Division of Historical Resources carries out its responsibilities with respect to shipwreck sites primarily through (1) permitting and standards for exploration and salvage on historic shipwreck sites, (2) permitting standards for archaeological research, (3) establishing archaeological reserves within which no salvage may occur, (4) creating underwater archaeological parks, (5) encouraging public education and public participation, and (6) protecting historic sites and recovering property through litigation when necessary.¹⁵³ Any person wanting to explore, excavate, or salvage archaeological materials from sovereignty submerged lands must enter into an agreement with the Division.¹⁵⁴ Finders are not guaranteed any priority to a salvage agreement, nor are they provided any reward or protection. Moreover, the Division will not enter into an agreement unless the applicant demonstrates both professional qualifications to conduct salvage operations and archaeological expertise to recover, process, and preserve artifacts in accordance with accepted archaeological practice.¹⁵⁵ If artifacts are recovered, the state asserts ownership over them pursuant to the agreement, but awards a substantial part of the artifacts for salvage services based on the terms of the salvage agreement.¹⁵⁶ Although neither the Act nor rules contain criteria for determining compensation for salvage, the state's standard form contract provides that the state retains a one-fifth, representative cross-section of the artifacts. The division of the artifacts, however, is largely dependent on the state's commitment to retain artifacts that are historically significant, that are well-suited to public display, and that are unique or unrepresented in the state's collection.¹⁵⁷

152. *Id.* § 267.061(1)(a)(2).

153. Salvage of a shipwreck site also requires a use agreement from the Department of Natural Resources and a permit from the Department of Environmental Regulation.

154. FLA. ADMIN. CODE ANN. r. 1A-31.0035(2) (1987).

155. *Id.* r. 1A-31.0065(1).

156. *Id.* r. 1A-31.009.

157. In *Cobb Coin I*, Florida's salvage requirements were held to be inconsistent with federal maritime principles and thus preempted by federal admiralty law. 525 F. Supp. 186 (S.D. Fla. 1981). However, a more recent case from the Eleventh Circuit upheld Florida's statutory scheme, finding it not inconsistent with federal maritime law. *Jupiter Wreck, Inc. v. The Unidentified, Wrecked and Abandoned Sailing Vessel*, 691 F. Supp. 1377, 1385 (S.D. Fla. 1988).

More than thirty cases involving salvage of shipwrecks in Florida's territorial seas are still pending in federal courts. Two cases involve shipwrecks located within archaeological reserves. Although the current provisions of Florida law would appear to be an allowable exercise of state management authority under the Shipwreck Act, cases filed prior to the Act are not affected by its passage.

Four broad areas of the territorial sea have been set aside by order of the Governor and Cabinet as archaeological reserves. In those areas, no salvage contracts will be granted. Reserve areas are set aside exclusively for research by properly qualified institutions. Neither the criteria for establishment of reserve areas nor the basis for the designation of the current reserves has been established by statute or rule.

Chapter 1A-32 of the Florida Administrative Code sets out criteria for archaeological research permits. Institutions which permanently employ professional archaeological staff who meet standards set out by the Division are considered accredited and need not obtain a permit for each project on state lands. However, accredited institutions must notify the Division of projects prior to initiation; the Division reserves fifteen days to approve or disapprove the project. Other institutions must apply for a research permit for every project.

The first underwater archaeological park, *Urca de Lima* Underwater Archaeological Preserve, opened in September 1987 near Fort Pierce Inlet. The site is marked by a buoy and sunken plaque setting out regulations for divers. State archaeologists hope the site will furnish educational as well as recreational opportunities for divers. A second underwater park at the site of the *San Pedro* shipwreck in the Florida Keys was opened in April 1989.

Establishing an underwater park requires (1) a lease or management agreement with the Division by the Board of Trustees, (2) a buoy for marking the site and providing mooring so that anchors do not damage the site, (3) an underwater plaque or trail markers, (4) a brochure, and 5) public cooperation in not defacing the site. Enforcement of regulations to protect a site is virtually impossible without the involvement and cooperation of local diving groups. This participation will be fostered in the development of future parks by designating sites based on the interests of diving groups, local governments, and the public.

Public participation in archaeological research is encouraged by the Division. Currently two private groups, the Paleontological and Archaeological Research Team of Florida and the Marine Archaeological Divers Association, participate in state underwater archaeological research. Interpretive museum displays, traveling exhibits of collections, and publication of research comprise the public education element of the Division's efforts. Working with dive shops and diving organizations in the establishment of underwater archaeological parks will also greatly increase public educational and recreational opportunities in the future.

D. Issues and Recommendations

Issue: Litigation over shipwrecks in Florida's territorial seas. At least thirty cases are pending that are not controlled by the Shipwreck Act.

Based on *Jupiter Wreck, Inc. v. The Unidentified, Wrecked and Abandoned Sailing Vessel*, "the State may assert ownership in [a] vessel by virtue of its dominion over the territory in which the res rests, [which] necessarily indicates that the State may control the manner in which the res is salvaged."¹⁵⁸ Moreover, state sovereign immunity precludes determination of state property rights without state consent. Application of the law of finds, rather than the law of salvage, means that the owner can dictate the terms of salvage or can refuse salvage and deny a "trespassing" salvor an award. The emergence of these principles demonstrates that the state is clearly not involved in a purely quixotic quest to attempt to protect and recover historic artifacts.

Cases controlled by the Shipwreck Act raise other issues. Initially, the Act itself will likely be subject to constitutional challenge. If the Act is upheld, questions may arise as to whether a shipwreck has been "abandoned" or whether the owner has "relinquished ownership rights." Whether the vessel is the type of historic vessel intended to be protected, *i.e.*, whether a particular shipwreck is affected by the Act, will undoubtedly be another source of litigation. Under the Shipwreck Act, "embedded" means "firmly affixed in the submerged lands or in coralline formations such that the use of tools of excavation is required in order to move the bottom sediments to gain access to the shipwreck, its cargo, and any part thereof."¹⁵⁹ Florida, however, claims artifacts and shipwrecks "on state-owned sovereignty submerged lands."¹⁶⁰ The difference may be academic in the case of ancient shipwrecks, but litigation may arise to determine each statute's scope.

Recommendation: The ability to control state submerged lands and the resources of the territorial sea is essential to the principle of state sovereignty. The state must establish its right to control the use of its lands. Thus, because these cases involve fundamental issues of state sovereignty, the state must continue to litigate the status of historic shipwrecks and their artifacts.

Issue: Implementation of the Abandoned Shipwreck Act of 1987. Current state management programs are generally consistent with the standards articulated in the Shipwreck Act. Recently, federal regulations were proposed to provide "guidance" to the states in developing management programs for shipwreck sites. The guidelines suggest that

158. 691 F. Supp. at 1393.

159. 43 U.S.C.A. § 2102(a) (West Supp. 1989).

160. FLA. STAT. § 267.061(1)(b) (1989).

the rights of finders and user groups be more explicitly defined and that designation of special areas like underwater archaeological preserves and reserve areas be formalized in rules or legislation. The Shipwreck Act does not condition state ownership of shipwrecks on concurrence with federal guidelines. However, access to federal funds for new underwater parks and public education and participation programs may be affected by failure to comply with them.

Recommendations: (1) Florida should attempt to conform to federal guidelines for management of abandoned shipwreck sites to the extent that the guidelines reflect the factual realities that exist in the state and the needs of Florida's citizens and affected user groups.

(2) The Division of Historical Resources should continue its present direction and policies to (a) expand education of the public and user groups about the historical significance of underwater archaeological sites, (b) establish additional underwater archaeological parks, and (c) cooperate and coordinate with the National Park Service and the National Oceanic and Atmospheric Administration in research and program development in national parks and marine sanctuaries.

(3) Rules or legislation should be developed to formalize criteria for designation of archaeological reserves and underwater parks or preserves.

(4) Legislation, or more explicitly articulated rules, should be developed to regulate the recovery of artifacts from abandoned shipwreck sites and to define the rights of finders. This legislation or rule should provide, at a minimum, incentives for the discovery and reporting of wrecks, including priorities or rewards for finders, opportunities for the controlled recovery and protection of artifacts consistent with the preservation of historical values, and clear authority for the assertion of state claims for specific items of historical significance.

Issue: Coordination and cooperation in the development of underwater archaeological parks. Within the Division of Historical Resources only four staff people are involved directly with underwater archaeological resources. With the current level of staffing and funding, it is impossible to even inventory prospective sites. Onshore exhibits in the vicinity of an underwater park would extend the educational experience to nondivers, but more resources are necessary. Likewise, as more parks are established, maintaining buoys and interpretive displays will require staff and expense. The enforcement of regulations and the protection of sites require the cooperation of user groups.

Recommendations: The Division should continue to coordinate with user groups, local governments, and private parties to locate, record, develop, and maintain sites. The Division should also negotiate with

the Florida Department of Natural Resources, Division of Recreation and Parks, to include underwater archaeological preserves within the state park system. The prospect of funding for such parks through grants under the National Historic Preservation Act should make a joint effort of the agencies a more attractive proposition.

VI. THE FLORIDA COASTAL MANAGEMENT PROGRAM

A. Background

In 1972, the federal Coastal Zone Management Act of 1972 (CZMA)¹⁶¹ was passed "to preserve, protect, develop, and where possible, to restore or enhance, the resources of the nation's coastal zone for this and succeeding generations"¹⁶² These purposes are accomplished by development of state coastal management programs that meet certain federal standards and guidelines. Although participation by states in the coastal zone management program is voluntary, the CZMA provides substantial inducements for participation. Federal funding for development and administration of programs has been available, and the Act asserts that federal activities and federally-permitted activities will be consistent with state coastal management plans that meet the Act's requirements.

Although coastal planning efforts had been ongoing in Florida prior to 1978, development of the current Florida Coastal Management Program (FCMP) was authorized by legislation in that year. Often referred to as the "No New Nothing Act," the Florida Coastal Management Act of 1978¹⁶³ designated the Department of Environmental Regulation (DER) as lead agency and authorized DER "to compile a program based on existing statutes and existing rules."¹⁶⁴ The resulting plan received federal approval in September 1981. The FCMP networks twenty-six acts and their implementing rules and involves sixteen state agencies, making DER, the Department of Natural Resources, and the Department of Community Affairs responsible for the majority of the day-to-day program administration.

161. Pub. L. No. 92-583, 86 Stat. 1280 (codified as amended at 16 U.S.C. §§ 1451-1464 (1988)).

162. 16 U.S.C. § 1452(1). The CZMA is implemented by the Office of Ocean and Coastal Resource Management within the Department of Commerce's National Oceanic and Atmospheric Administration.

163. FLA. STAT. §§ 380.19-.33 (1989).

164. *Id.* § 380.21(2). DER's Coastal Zone Management Section is responsible for day-to-day administration of the FCMP.

B. Florida Statutes in the Approved FCMP

Chapter 119 Public Records
Chapter 120 Administrative Procedure Act
Chapter 161 Beach and Shore Preservation
Chapter 186 State and Regional Planning
Sections 201.02-.15 Excise Tax on Documents
Chapter 252 Emergency Management
Chapter 253 State Lands
Chapter 258 State Parks and Preserves
Chapter 259 Land Conservation Act of 1972
Chapter 260 Florida Recreational Trails Act of 1979
Chapter 267 Florida Historical Resources Act
Chapter 288 Commercial Development and Capital Improvements
Chapter 315 1959 Port Facilities Financing Law
Chapter 334 Transportation Administration
Chapter 339 Transportation Finance and Planning
Chapter 366 Public Utilities
Chapter 370 Saltwater Fisheries
Chapter 372 Wildlife
Chapter 373 Water Resources
Chapter 375 Outdoor Recreation and Conservation Act of 1963
Chapter 376 Pollutant Discharge Prevention and Removal
Chapter 377 Energy Resources
Chapter 380 Land and Water Management
Chapter 388 Mosquito Control
Chapter 403 Florida Air and Water Pollution Control Act
Chapter 582 Soil and Water Conservation

The key to transforming the network of Florida laws into a program is the Coastal Resources Interagency Management Committee (IMC). The IMC, created by Joint Resolution of the Governor and Cabinet in 1980, is currently composed of the heads of eleven agencies responsible for major programs affecting coastal management. The committee is responsible for integration and coordination of agency policies and coastal activities, identification and resolution of jurisdictional conflict and overlap, and recommendations for rules, legislation, and memoranda of understanding.¹⁶⁵ The IMC receives staff

165. U.S. DEP'T OF COMMERCE & FLA. DEP'T OF ENVTL. REG., THE FLORIDA COASTAL MANAGEMENT PROGRAM, FINAL ENVIRONMENTAL IMPACT STATEMENT II-256 to -260 (1981). The IMC was originally composed of the secretaries of the Departments of Commerce, Environmental Regulation, Community Affairs, and Transportation; the directors or executive directors of the

support from DER's Coastal Zone Management Section, and input from the state Interagency Advisory Committee (IAC) on coastal management and the Governor's Coastal Resources Citizens Advisory Committee (CAC).

The IAC, which includes representatives of all agencies with coastal management responsibilities, was originally conceived in 1975 to provide agency input into development of the FCMP. Since program approval, the IAC serves as the interagency liaison for implementation of the FCMP and prepares background and issue papers for the IMC.

The CAC is the mechanism for public participation in the coastal management process. The members of the CAC are appointed by the Governor for two-year terms and represent various regions of the state, private and public interest groups, and different levels of government in the state. The committee serves as an advisory group for DER, the IMC, the Governor, and the legislature.

C. State Coastal Program Achievements

While coordination of agency activities affecting the coastal zone is a major function of the coastal management program, the program has also supported and coordinated activities intended to carry out the purposes of the CZMA and has developed new initiatives to preserve and protect the state's coastal resources. FCMP grants have assisted agencies in addressing a wide variety of coastal issues. Although it is not possible to include a complete listing in this article of activities supported, coordinated, or conceived as part of the FCMP, the following have been particularly important for protection of Florida's ocean resources:

1. Florida's aquatic preserves program has benefited greatly from FCMP grants for development of management programs.
2. The FCMP's estuarine initiative has been an ongoing program to develop a statewide perspective on estuarine pollution, to establish policies for estuary management, and to develop practical management and regulatory tools.
3. Hurricane evacuation and hazard mitigation have been a major focus of the FCMP.

Department of Natural Resources, the Game and Fresh Water Fish Commission, the Division of Historical Resources of the Department of State, the Division of Forestry of the Department of Agriculture and Consumer Services, and the Governor's Office of Planning and Budgeting; and the Assistant State Health Officer for Environmental Health in the Department of Health and Rehabilitative Services. The IMC now numbers eleven with the addition of the executive director of the Marine Fisheries Commission. See FLA. STAT. § 380.31 (1989).

D. Federal Consistency

Although federal funding was an initial impetus for states to participate in coastal zone planning, the federal consistency provision of the CZMA is the primary incentive to continue and maintain state coastal programs.¹⁶⁶ Section 1456(c) of the CZMA provides that federal agency activities "directly affecting" the state's coastal zone must be consistent "to the maximum extent practicable" with the FCMP. In addition, federally-permitted activities which affect the coastal zone must be consistent with the FCMP. Specific provisions concerning oil and gas exploration and development plans also require consistency with the state coastal program if the activity affects the coastal zone.¹⁶⁷

The consistency provision contains a number of terms that are subject to interpretation. One of the most troublesome phrases is the language in section 1456(c)(1) concerning the consistency of federal agency activities "directly affecting" the coastal zone. The CZMA does not define the phrase "directly affecting." The United States Supreme Court reviewed the phrase in the context of oil and gas lease sales of outer continental shelf (OCS) lands in *Secretary of Interior v. California*.¹⁶⁸ A narrow reading of the holding of the case is that OCS oil and gas lease sales do not directly affect the coastal zone and therefore require no determination of consistency with a state coastal plan. Unfortunately, the Court was ambiguous about its basis for this conclusion. One possible interpretation is that federal activities must be conducted or supported *within* the coastal zone to directly affect the coastal zone.

The Department of Commerce's National Oceanic and Atmospheric Administration (NOAA) regulations currently reflect the more narrow interpretation. The regulations state that, except for OCS oil and gas lease sales, federal activities within *and* outside the coastal zone "are subject to . . . review to determine whether they directly affect the coastal zone."¹⁶⁹ However, federal agencies themselves decide whether their activities require consistency determinations. For example, in promulgating regulations implementing the Clean Water Act¹⁷⁰ and

166. Funding from the federal government for coastal programs is likely to continue to decline or eventually to disappear. If this happens, the federal consistency requirement will be the only "carrot" for continued state participation.

167. 16 U.S.C. § 1456(c)(3)(B) (1988).

168. 464 U.S. 312 (1984).

169. 15 C.F.R. § 930.33 (1989).

170. Federal Water Pollution Control (Clean Water) Act, 33 U.S.C. §§ 1251-1387 (1982 & Supp. V 1987).

the Ocean Dumping Act,¹⁷¹ the United States Army Corps of Engineers (Corps) adopted the position that the consistency provisions of section 1456(c)(1) apply only to activities in the coastal zone. The analysis of the regulations includes the Corps' position that "the CZMA and case law leave some doubt regarding the authority of a state to control Corps dredging and disposal activities not physically located 'within' a state's coastal zone"¹⁷²

The Corps' regulations also question the relationship of the CZMA to the Ocean Dumping Act. The Corps' analysis which accompanied the final regulations states that the Corps will "voluntarily and as a matter of comity" seek water quality certification and determine consistency for disposal within the three-mile territorial sea. The Corps retained its legal rights, however, and maintained its opinion that the Ocean Dumping Act may preempt the CZMA even within the territorial sea.¹⁷³

Another issue that has arisen concerning application of the consistency requirement relates to so-called conditional consistency determinations by the state. Rather than merely concur with or object to consistency determinations, states often find that an activity will be consistent with the coastal plan if certain additional conditions are met. NOAA regulations seemed to anticipate and support the state's use of conditions to ensure consistency by requiring that state objections to a consistency determination describe what measures could be taken to make the activity consistent with the state management plan.¹⁷⁴ The Office of Ocean and Coastal Resource Management's (OCRM) most recent interpretation, however, is that the state is authorized only to "concur in or object to consistency certifications."¹⁷⁵ Comments to the Corps' ocean disposal regulations provide that "the NOAA Office of Coastal Resource Management has advised the Corps that the NOAA regulations do not contemplate conditional concurrences."¹⁷⁶

171. 33 U.S.C. §§ 1401-1445 (1982 & Supp. V 1987).

172. 53 Fed. Reg. 14,902, 14,905 (April 26, 1988) (to be codified at 33 C.F.R. pt. 336).

173. *Id.* at 14,908. See also *supra* Section III of this article (discussing submerged lands and jurisdiction).

174. See 15 C.F.R. § 930.64(b) (1989). For a complete discussion of this issue, see Archer & Bondareff, *Implementation of the Federal Consistency Doctrine—Lawful and Constitutional: A Response to Whitney, Johnson, & Perles*, 12 HARV. ENVTL. L. REV. 115, 127-36 (1988).

175. OFFICE OF OCEAN AND COASTAL RESOURCE MANAGEMENT, U.S. DEP'T OF COMMERCE, FINAL EVALUATION OF THE FLORIDA COASTAL MANAGEMENT PROGRAM 1985-1987, at 13 (1988) [hereinafter OCRM FINAL EVALUATION].

176. 53 Fed. Reg. 14,902, 14,906 (April 26, 1988).

*E. State Consistency Review Process*¹⁷⁷

The state reviews over 1,000 consistency determinations each year. The complexity of dealing with this large number of reviews, of applying the policies of a networked program, and of meeting time limitations imposed by federal regulations¹⁷⁸ requires clear procedures and a high level of agency cooperation. The Federal Consistency Manual, which sets out state review procedures, has recently been revised and updated to incorporate new statutes and changes in agency organization.¹⁷⁹

A Memorandum of Understanding (MOU) designates DER as the lead agency and the Governor's Office of Planning and Budgeting (OPB) as the coordinator of intrastate federal consistency review. In coordinating the review, OPB is assisted by two units: the Growth Management and Planning Unit (GMPU) (formerly the Management Support Unit) and the Environmental Policy Unit (EPU). The GMPU, which includes the State Clearinghouse (SCH), initially receives the documentation, logs it, and routes it to agency reviewers. The SCH reviews the documentation to determine if it meets program eligibility criteria and compiles agency comments. The EPU also reviews consistency documents and agency comments. The EPU summarizes agency comments and formulates a recommended state response. Consistency evaluations are routed by the SCH to the Intergovernmental Coordination Section (IGCS) of DER and other agencies for review. IGCS staff review may include consultation with other sections of DER and with DER district offices. The agency's comments are returned to the SCH. If the state concurs with a project, the final consistency letter is prepared by the SCH and signed by the GMPU Coordinator. If a finding of inconsistency is recommended, a letter is prepared in cooperation with DER and signed by the Secretary of DER. If there is disagreement between state agencies concerning a consistency review, OPB is responsible for initiating conflict resolution discussions. OPB may recommend that the IMC mediate serious interagency conflicts.

F. Recurring Issues

On April 18, 1988, OCRM issued its most recent evaluation of the Florida Coastal Management Program for the period from February

177. Information in this subsection is taken primarily from FLORIDA DEP'T OF ENVTL. REG., RESPONSE TO THE NOAA SECTION 312 EVALUATION OF THE FLORIDA COASTAL MANAGEMENT PROGRAM, Item 5 (Aug. 30, 1988).

178. See 15 C.F.R. pt. 930 (1989).

179. See FLORIDA DEP'T OF ENVTL. REG., GOVERNOR'S OFFICE OF PLANNING AND BUDGETING & GOVERNOR'S OFFICE OF ENVTL. AFFAIRS, FLORIDA COASTAL MANAGEMENT PROGRAM FEDERAL CONSISTENCY EVALUATION PROCEDURES (Sept. 1989).

1985 through October 1987.¹⁸⁰ The Director of OCRM found that "Florida has not complied with several requirements of the CZMA's implementing regulations."¹⁸¹ Many of the problems cited in the Director's report are minor and nonsubstantive. However, other issues are more fundamental and are shared by many states in the implementation of their coastal programs. The review cited two problems that are inherent to a networked program: how DER, as the lead agency, functions to monitor and coordinate the FCMP, and whether the IMC and IAC actually carry out the role of interagency coordination, policy implementation, and conflict resolution. A third concern focused primarily on the state's interpretation and application of principles of consistency review.

Agency interaction and program coordination have been recurring problems cited in all three OCRM reviews of the state program. The report for the review period 1983-1985 primarily recommended that agency interaction through the IMC be increased and that "a broad range of actions to further strengthen the interagency approach" be considered by the state.¹⁸² The evaluation report for the 1985-1987 period was much more critical, questioning the ability of DER to provide program leadership and coordination, and finding that the IMC is not functioning and should be "reassess[ed] . . . as the principal coordinating mechanism for the FCMP"¹⁸³

Part of the problem is that agency coordinating mechanisms, MOU's, and the resolution to establish the IMC are out of date and do not reflect current realities. The IAC has been charged by the IMC to review resolutions and agency MOU's for needed changes to improve coordination among agencies and the functioning of the IMC. This review should be finished in the near future.

The criticisms by OCRM concerning conduct of federal consistency review were much the same for Florida as for other states that have recently undergone federal review, and were fundamentally related to the nature of the federal consistency doctrine. OCRM objected to the "unauthorized use of conditional concurrences" and "invalid requirements that federal agenc[ies] obtain state . . . permits" for consistency.¹⁸⁴

180. OCRM FINAL EVALUATION, *supra* note 175. Section 1458 of the CZMA requires continuing review of the performance of state programs by OCRM. See 16 U.S.C. § 1458 (1988).

181. See OCRM FINAL EVALUATION, *supra* note 175, at 26.

182. OFFICE OF OCEAN AND COASTAL RESOURCE MANAGEMENT, U.S. DEP'T OF COMMERCE, DRAFT EVALUATION FINDINGS FOR THE FLORIDA COASTAL MANAGEMENT PROGRAM 1983-1985, at 21 (1985).

183. OCRM FINAL EVALUATION, *supra* note 175, at 8.

184. *Id.* at 13.

G. *Issues and Recommendations*

Issue: State program coordination and agency interaction. Redefinition of agency coordination responsibilities in revised MOU's is an important step toward better cooperation and interaction. However, committees such as the IMC and the IAC require more than documentary guidelines to make them effective; they require the political will to make them work.

Recommendation: Because the IMC is the vital bond for an effectively functioning coastal management program, the IMC and its functions should be codified. Although this step may not functionally alter the IMC, it would at least signify legislative support for the program and bolster participation of agencies in the FCMP.

Note: The organization of the IMC and its duties and responsibilities were codified by the legislature in 1989. See FLA. STAT. § 380.31-.32 (1989). New memoranda of understanding have also been negotiated to insure better interagency cooperation and coordination.

Issue: Conditional consistency concurrences and state permit requirements. Florida's position on conditional consistency opinions and applicability of state permits to federal activities is one shared by a number of coastal states and is the subject of national debate. A group of authors recently stated that "Congress made a troublesome mistake when it enacted what it conceived to be the innovative consistency process"¹⁸⁵ In their argument for repeal of federal consistency provisions of the CZMA, the authors went on to say that "states have used the consistency process to nullify directly unwanted federal programs and to impose an unending procession of dilatory data requirements as a means of bargaining for the imposition of terms and conditions beyond those that the federal statute requires."¹⁸⁶

The requirement that states may only concur or object to consistency certifications creates additional arguments for repeal. If states are forced to object to activities that could be made consistent by minor but justifiable and necessary conditions, an inordinately high number of activities would be found to be inconsistent with state coastal plans, reinforcing arguments that state consistency implementation is undermining federal programs.

185. Whitney, Johnson & Perles, *State Implementation of the Coastal Zone Management Consistency Provisions—Ultra Vires or Unconstitutional?*, 12 HARV. ENVTL. L. REV. 67, 111 (1988).

186. *Id.* at 112.

These arguments and the current OCRM interpretation misconceive the nature of the federal consistency provisions. The federal consistency doctrine is a substantive requirement imposed on federal agencies and federal permittees by Congress, subjecting actions affecting the coastal zone to state land and water use management programs. Requirements necessary for consistency with a state program are therefore not merely additional state terms and conditions. For example, consistency with the FCMP is as much a substantive *federal* requirement for a federal dredge and fill permit affecting Florida's coastal zone as are the relevant provisions of the Clean Water Act.

Issuing conditional consistency determinations has been common practice and furthers the purposes of the CZMA, which include encouraging federal/state cooperation and resolving conflicts expeditiously. Prohibiting conditional concurrences forces the state or a federal permit applicant to use more formal, adversarial, expensive, and time-consuming appeal processes that further neither the purposes of the CZMA nor the interests of the parties.

State requirements made applicable to federal activities through the federal consistency doctrine or other federal legislation have also been a source of debate. In essence, the issue is whether the federal government must obtain state permits for certain activities for the federal action to be consistent with the FCMP. The federal government often rejects state permitting authority by broad claims of sovereign immunity or federal preemption. But recent federal cases highlight the facts that (a) many federal statutes, including the Clean Water Act, waive sovereign immunity in requiring federal activities to comply with all state and local requirements;¹⁸⁷ and (b) federal preemption must be determined on a case-by-case basis.¹⁸⁸

Recommendations: Federal consistency correspondence should be carefully drafted when the state reviews projects in early stages to clarify that consistency at a particular stage does not mean the project will continue to be consistent at later stages. Projects that are not planned in accordance with comments made during early reviews may be found inconsistent during subsequent reviews. Comments on potential impacts of a project are intended to aid in the planning of the

187. See *Friends of the Earth v. United States Navy*, 841 F.2d 927 (9th Cir. 1988) (enjoining the Navy from dredge and fill activities until it received a permit under Washington's Shoreline Management Act).

188. See *California Coastal Comm'n v. Granite Rock Co.*, 480 U.S. 572, 579-81 (1987) (reiterating the test that state law is preempted only where Congress has evidenced an intent to occupy a certain field, or where Congress has not entirely displaced state regulation, only if state law conflicts with federal law).

project and are not to be construed as conditional consistency determinations. The state should also continue to support legislation and litigation intended to reestablish a broad definition of federal activities "directly affecting" the coastal zone and requiring consistency with state coastal plans.

Note: DER and the Governor's Offices of Planning and Budgeting, and Environmental Affairs have developed a new consistency procedures manual, FLORIDA COASTAL MANAGEMENT PROGRAM FEDERAL CONSISTENCY EVALUATION PROCEDURES (Sept. 1989).

VII. MANAGEMENT OF MARINE HABITAT AND PROTECTED SPECIES

As the State of Florida moves into the twenty-first century, population growth and resultant development will have an ever-increasing impact on the environment. The protection of the state's natural resources will become even more critical as the demands of population encroach on an already-diminished wildlife habitat. This encroachment has taken a tremendous toll on the coastal areas of the state. But the state has begun to address this problem of protection of wildlife and its habitat through legislation to set aside and manage designated preserves and sanctuaries. In addition to the creation and regulation of protected areas, the state has also recognized the need for conserving the various species which inhabit the preserves and sanctuaries.

A. Florida Aquatic Preserves

By the time the Aquatic Preserves Act of 1975 (Preserves Act)¹⁸⁹ was passed by the Florida Legislature, the aquatic preserves program was already firmly established with thirty-five preserves designated by the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees). The Preserves Act set out the legislative intent that "state-owned submerged lands in areas which have exceptional biological, aesthetic, and scientific value . . . be set aside forever as aquatic preserves or sanctuaries for the benefit of future generations."¹⁹⁰

The Preserves Act also established uniform criteria for the maintenance of preserves. These criteria are reflected in rules adopted by the Board of Trustees¹⁹¹ and in the aquatic preserve policies of the Conceptual State Lands Management Plan, which provides:

189. FLA. STAT. §§ 258.35-.399, 258.40-.46 (1989).

190. *Id.* § 258.36.

191. See FLA. ADMIN. CODE ANN. r. 18-20 (1987).

1. No sale, lease or transfer of state-owned submerged lands within aquatic preserves shall be approved unless it is in the public interest.
2. No bulkhead line shall be located or relocated waterward of the mean high water line in an aquatic preserve unless necessitated by a road or bridge construction project where no reasonable alternative exists and the project is not contrary to the public interest.
3. There shall be no drilling of gas or oil wells within any aquatic preserve.
4. There shall be no excavation of minerals within aquatic preserves except the dredging of dead oyster shells as approved by the Department of Natural Resources.
5. (a) There shall be no dredging of state-owned lands within aquatic preserves for the purpose of providing upland fill.
(b) There shall be no dredging or filling of submerged lands within aquatic preserves except minimum dredging and spoiling as may be necessary for the following activities:
 - i) public navigation projects
 - ii) maintenance of existing navigation channels
 - iii) creation and maintenance of marinas, piers, docks and their attendant navigation channels
 - iv) public utility installation or expansion
 - v) installation and maintenance of fuel transportation facilities
 - vi) alterations necessary to enhance the quality or utility of the preserve or the public health generally.
6. No structures shall be erected within a preserve except:
 - (a) Private docks for reasonable ingress or egress of riparian owners.
 - (b) Commercial docking facilities shown to be not contrary to the use or management criteria of the preserve.
 - (c) Shore protection structures, approved navigational aides, or public utility crossings authorized under policy [5(b)].
7. No wastes or effluents which substantially inhibit the accomplishment of the purposes of the Aquatic Preserve Acts shall be discharged into an aquatic preserve.
8. Management of human activities within aquatic preserves will not unreasonably interfere with traditional public uses such as fishing, boating and swimming.
9. Management of aquatic preserves shall not infringe upon the traditional rights of riparian land owners within or adjacent to an aquatic preserve.
10. Other uses of an aquatic preserve may only be approved subsequent to a formal finding of compatibility with the purpose

of the Aquatic Preserve Acts and rules, and of the type designation of the preserve in question.¹⁹²

There are currently forty-two aquatic preserves designated in the state, mostly in coastal waters. Although most of the state's aquatic preserves have been designated legislatively, the Preserves Act does contain a provision for the establishment of preserves by the Board of Trustees, subject to confirmation by the legislature. The process requires (1) a proposal for designation as an aquatic preserve, (2) public notice and a public hearing in the county where the proposed preserve is located, (3) adoption of a resolution by the Board of Trustees, (4) confirmation by the legislature, and (5) recording of the legal description of the aquatic preserve in public records of the affected county.¹⁹³

Management plans, which must be adopted by rule by the Board of Trustees, are currently being developed for all aquatic preserves.¹⁹⁴ The Functional Plan of the Department of Natural Resources (DNR) projects that all forty-two plans will be completed by 1991. As of April 1990, twenty-two aquatic preserves have been included in various management plans.¹⁹⁵ Plans are implemented in two ways: 1) implementation of plan objectives by DNR through rule and on-site management, and 2) coordination with other agencies, primarily through review of permit applications and coastal development planning.

The Department of Natural Resources currently provides legislatively-funded, on-site management for twenty-six of the forty-two preserves. Twenty-five full-time environmental specialists, law enforcement officers, and administrative personnel manage the preserves. These on-site managers carry out the directives of management plans, develop comprehensive resource inventories, oversee research projects, monitor the preserves' natural systems, enforce the statutes and rules, and determine the impacts of natural and man-made activities on the preserves. They also provide educational programs for local schools and the public.

Intergovernmental coordination is a vitally important element in the protection and management of aquatic preserves. Although the Board of Trustees holds title to the preserves and DNR has management authority, the Department of Environmental Regulation (DER) has the

192. DNR CONCEPTUAL PLAN, *supra* note 8, at 57-59.

193. FLA. STAT. § 258.41 (1989).

194. Funds for completion of the plans are provided through Coastal Zone Management grants.

195. Telephone interview with Charles Knight, Bureau of Aquatic Preserves, Dep't of Natural Resources (May 7, 1990).

statutory responsibility for water quality in aquatic preserves, which includes the issuance of permits for effluent discharges. For dredging and filling activities, DER and the United States Army Corps of Engineers submit joint permit applications and biological assessments to DNR, which then conveys recommendations to DER and the Board of Trustees.¹⁹⁶ In reviewing permit applications, DER must determine that the project is "not contrary to the public interest."¹⁹⁷ The public interest test for dredge and fill permitting is extremely broad,¹⁹⁸ and in general DER has the authority to take into account most concerns that DNR may have with a particular project. For water quality permitting of discharges, however, the applicable statute does not provide any guidance for applying the public interest test.¹⁹⁹ Court cases and DER interpretation currently limit the public interest test to factors relating to environmental impact.²⁰⁰ This more limited test may fail to take into account DNR's broader proprietary concerns for sovereignty lands subject to the public trust and for aquatic preserve management. Moreover, DNR has little recourse, because unlike dredging or filling of submerged lands discharges are not necessarily a "use" of submerged sovereignty lands requiring consent of the Board of Trustees.

State legislation passed in 1988 provides for the delegation of authority from the Environmental Protection Agency (EPA) to DER to issue National Pollutant Discharge Elimination System (NPDES) permits.²⁰¹ In addition, the provision requires DER to respond *in writing*

196. This process is the same for dredge and fill projects on all sovereignty lands, but is particularly important in the case of projects within aquatic preserves.

197. FLA. STAT. § 403.918(2) (1989). DER also designates most aquatic preserves "Outstanding Florida Waters," which requires a determination that the project is "clearly in the public interest." *See id.*

198. Section 403.918(2)(a) of the Florida Statutes requires DER to consider the following: 1) the effects on public health, safety, welfare, and the property of others; 2) the effects on fish, wildlife, endangered species, and their habitats; 3) the effects on fishing and marine productivity; 4) the effects on water flow, erosion, and navigation; and 5) the effects on historical and archeological resources.

199. Section 403.088(2)(b) of the Florida Statutes provides only that when DER finds that a proposed discharge will not pollute waters beyond the established classification for the water body, "it may issue . . . [a] permit if it finds that such degradation is necessary or desirable under federal standards and under circumstances which are clearly in the public interest." Such a broad public interest test is arguably justified under the language of section 403.021 of the Florida Statutes, which provides an expansive public policy basis for chapter 403.

200. *See, e.g.,* Grove Isle, Ltd. v. Florida Dep't of Env'tl. Reg., 454 So. 2d 571 (Fla. 1st DCA 1984).

201. *See* ch. 88-393, § 23, 1988 Fla. Laws 2224, 2242-43 (1988) (codified at FLA. STAT. § 403.0885 (1989)). The Clean Water Act requires that the EPA delegate NPDES permitting to a state when the state requests the authority and can demonstrate adequate authority to carry out the program. *See* 33 U.S.C. § 1342(b) (1982).

to comments received from DNR and the Game and Fresh Water Fish Commission on pending NPDES permits.²⁰² To date, however, DER does not issue NPDES permits.

Because permission from the Board of Trustees is required for non-traditional use of sovereignty lands—dredging and filling, for example—the Board of Trustees can condition or prohibit activities within the preserves or in navigable water near preserves to minimize impacts on natural systems. Upland development can have significant adverse effects on adjacent water bodies, but in most cases is beyond the jurisdiction of the aquatic preserves program. DNR staff review applications and make recommendations to the agencies responsible for permitting upland development. Coordination with local planning and zoning staff are the primary means of carrying out the management and protection goals of the preserves.

DNR review of upland developments that affect aquatic preserves has been targeted by advocates of “environmental efficiency.” The basis for their argument has been that additional review and conditions are inconsistent with upland permit requirements and that DNR review duplicates DER review for water quality and biological impacts. These advocates often confuse the state’s police power authority over private land with the proprietary and public trust interests of the state on adjacent submerged sovereignty lands and in public navigable waters. DNR participation in upland development decisions is extremely important to assure that other agencies and local governments use their police power authority to protect the state’s proprietary interests and the public trust.

In addition to the reviews already discussed, several other mechanisms exist for interagency and intergovernmental coordination to protect aquatic preserves. Within the state’s coastal management program, opportunity exists for coordination through both the Interagency Management Committee and the Interagency Advisory Committee. A fundamental part of the coastal management program is a memorandum of understanding between DER, DNR, and the Department of Community Affairs setting out agency responsibilities and procedures for a coordinated approach to programmatic issues. The state’s planning processes also provide additional opportunities for DNR participation. These include review of the State Land Use Plan, review of developments of regional impact, and review of local government comprehensive plans. It should be emphasized, however, that all these mechanisms provide only *opportunities* for coordination and

202. Ch. 88-393, § 23, 1988 Fla. Laws 2224, 2242-43 (1988) (codified at FLA. STAT. § 403.0885 (1989)).

cooperation and therefore require institutional and political will to be effective.

Issue: Major objectives for aquatic preserves identified by DNR. DNR has identified the following major objectives for aquatic preserves:

- 1) Management plans for all aquatic preserves must be completed.
- 2) Preserves need adequate staffing and operational funding.
- 3) More effective mechanisms for intergovernmental coordination must be developed, including local government coordination.
- 4) Submerged land rules and aquatic preserve rules should be combined to develop a comprehensive submerged land rule that incorporates the management needs and natural resource requirements of aquatic preserves, and that reflects recent actions of the Board of Trustees.²⁰³

Issue: The public interest test. The public interest test in the Florida Statutes must be broad enough to include the state's proprietary and public trust interests in submerged sovereignty lands and navigable waters.

Recommendation: The permitting test for effluent discharges should be amended to provide a broad public interest test which will reflect not only pollution control standards, but also other legitimate state interests in its navigable waters and affected submerged lands.

B. Estuarine Reserves and Marine Sanctuaries

1. Estuarine Research Reserves

The National Estuarine Sanctuaries Program, now the National Estuarine Reserves Research System, was created in 1972 as a part of the Coastal Zone Management Act.²⁰⁴ The National Oceanic and Atmospheric Administration (NOAA) in the Department of Commerce has the responsibility to administer the program and to work with states in establishing and managing reserves. Under this program, the federal government provides matching start-up funds for acquiring estuarine areas and for developing and operating research facilities and educational programs.

The purpose of the reserve system is to create and preserve natural field laboratories representative of estuarine systems.²⁰⁵ Reserves are

203. See DNR AGENCY FUNCTIONAL PLAN, *supra* note 102, at 95-110.

204. See 16 U.S.C. § 1461 (1988).

205. See *id.* § 1461(b).

to be used primarily for research and education. NOAA is responsible for developing estuarine research guidelines to establish common research principles and objectives for the national reserve research system.²⁰⁶

Eighteen estuarine research reserves have been designated nationally and two additional proposals are pending that are characteristic of different coastal regions and estuarine types. Florida has two designated reserves: Rookery Bay and Apalachicola River and Bay. The state does not have specific legislation or rules, however, addressing these areas as estuarine reserves. State management of these reserves is currently conducted in concert with the legal authorities of the aquatic preserves program.

2. Marine Sanctuaries

The National Marine Sanctuaries Program was created in 1972 as part of the Marine Protection, Research, and Sanctuaries Act of 1972.²⁰⁷ The purpose of the program is "to identify areas of the marine environment of special national significance due to their resource or human-use values . . . [and] to provide authority for comprehensive and coordinated conservation and management of these marine areas" where existing regulatory authority is inadequate to assure coordinated conservation and management.²⁰⁸ National significance is determined by assessment of the "conservation, recreational, ecological, historical, research, educational, or esthetic qualities" of a marine area.²⁰⁹

Key Largo National Marine Sanctuary encompasses 100 square miles off the Atlantic coast of Key Largo, adjacent to John Pennekamp Coral Reef State Park. It was designated in 1975 "to protect and preserve the coral reef ecosystem in its natural state and to regulate uses within the Sanctuary to ensure the health and well-being of the coral and associated flora and fauna."²¹⁰ A number of activities are regulated or prohibited to achieve these purposes. No natural features, marine life, or archaeological and historical resources may be removed or destroyed. This includes a prohibition on handling or standing on coral. Operating, anchoring, and mooring watercraft is strictly regulated. Discharging pollutants and dredging, filling, and excavating are also generally prohibited.²¹¹

206. See *id.* § 1461(c).

207. See 16 U.S.C. §§ 1431-1434 (1988).

208. *Id.* § 1431(b).

209. *Id.* § 1431(a)(2).

210. 15 C.F.R. § 929.2 (1989).

211. *Id.* § 929.7.

Looe Key National Marine Sanctuary, designated in 1981, includes only a five-square-mile area southwest of Big Pine Key. The purposes for providing special protection to this area are broader than for the Key Largo sanctuary and include availability of the area for public education and as a commercial, ecological, research, and recreational resource. The restrictions are substantially the same, except that in the Looe Key Sanctuary historical and archaeological resources are not protected, and fishing is generally allowed.²¹²

The National Marine Sanctuaries Program was reauthorized by Congress in 1988 with provisions to improve timeliness and predictability in the sanctuary designation process. New provisions for promoting and coordinating research were also included. The legislation requires NOAA to investigate three areas off Florida's coast—American Shoal, Sombrero Key, and Alligator Key—and report to Congress within two years on the suitability of the sites for marine sanctuaries.²¹³ More recently, Representative Dante Fascell and Senator Bob Graham have introduced legislation to create a Florida Keys National Marine Sanctuary, which would encompass the entire Florida reef tract.²¹⁴

Issue: A lack of state statutes or rules specifically addressing estuarine reserves or marine sanctuaries. Federal and state officials interact informally on issues relating to estuarine reserve and marine sanctuaries research programs and management. DNR has recently reorganized and created the Bureau of Sanctuaries and Research Reserves within the Division of Marine Resources. Although the aquatic preserves program is compatible with the federal programs, aquatic preserve management is not as specifically directed as the federal programs.

Recommendation: The State of Florida should continue to complement the federal sanctuary and reserve programs, taking full advantage of the opportunities for habitat protection, resource management, research coordination, and funding these programs provide.

Issue: The need for coordinated management and research. Additional areas need the coordinated management and research provided by the national park, marine sanctuary, and research reserve programs. The state should also make recommendations to NOAA to initiate the designation of additional sanctuaries and reserves. For

212. 15 C.F.R. pt. 937 (1989).

213. See Act of Nov. 7, 1988, Pub. L. No. 100-627, 102 Stat. 3213 (codified in scattered sections of 33 U.S.C.A. §§ 1401-1445 and 16 U.S.C.A. §§ 1431-1445 (West Supp. 1989)).

214. See H.R. 3719, 101st Cong., 1st Sess. (1989); S. 2247, 101st Cong., 2d Sess. (1990).

example, the Marqueses Keys, the Big Bend Seagrasses Area, and the Florida Middle Grounds should be designated marine sanctuaries, and Indian River Lagoon should be designated an estuarine research reserve. In addition, the state should encourage designation of the Dry Tortugas and surrounding waters as a national aquatic park.

C. *Endangered, Threatened, and Protected Marine Species*

The Florida Endangered and Threatened Species Act of 1977 was enacted in recognition of the fact that Florida possesses more native endangered and threatened species of animals than any other continental state.²¹⁵ It was also enacted to establish a state policy to provide for research and management "to conserve and wisely manage these resources."²¹⁶ The Act calls for a coordinated effort between the Game and Fresh Water Fish Commission (GFWFC), whose jurisdiction includes freshwater and upland species, and DNR, whose jurisdiction includes marine species. All endangered, threatened, and special concern species listed by those agencies, in addition to those listed by the United States Department of Interior under the federal Endangered Species Act of 1973²¹⁷ are protected.

The State of Florida has 110 animals and 422 plants listed as protected species under the Act.²¹⁸ The following marine species are included:²¹⁹

Endangered Marine Species:

Pillar coral	West Indian manatee
Sei whale	Atlantic green turtle
Sperm whale	Shortnose sturgeon
Humpback whale	Finback whale
Atlantic right whale	Atlantic hawksbill turtle
Atlantic (Kemp's) ridley turtle	

Threatened Marine Species:

Loggerhead sea turtle	Key silverside
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Marine Species of Special Concern:

Atlantic sturgeon	Common snook
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State policy, as reflected in GFWFC rules, is that "[n]o person shall

215. See FLA. STAT. § 372.072 (1989).

216. *Id.* § 372.072(2).

217. 16 U.S.C. §§ 1531-1544 (1988).

218. DNR AGENCY FUNCTIONAL PLAN, *supra* note 102, at 111.

219. See Rules 39-27.003-.005, respectively, of the Florida Administrative Code for a list of designated endangered species, designated threatened species, and designated species of special concern. For the list of federally designated endangered and threatened species, see 50 C.F.R. pt. 17 (1988).

pursue, molest, harm, harass, capture or possess any endangered species or parts thereof or their nests or eggs"²²⁰ A total prohibition against the further destruction of the animal populations is intended. However, GFWFC and DNR may issue permits to take or move endangered species "when the permitted activity will clearly enhance the survival potential of the species."²²¹ Permits for activities involving threatened species require a showing that the activity "will not have a negative impact on the survival potential of the species."²²²

DNR adopts and enforces rules necessary to ensure compliance with efforts to protect endangered and threatened species.²²³ "Over the last three and one-half years, [DNR], through the Florida Marine Patrol, has spent 120,201 manhours of effort on designated species law enforcement."²²⁴ To aid in the enforcement of protective provisions, the Florida Legislature created the Endangered and Threatened Species Reward Trust Fund in 1979.²²⁵ As operated by the GFWFC, the fund is "for the primary purpose of posting rewards to persons responsible for providing information leading to the arrest and conviction of persons illegally killing or wounding or wrongfully possessing any of the endangered and threatened species listed on the official Florida list"²²⁶

The DNR Agency Functional Plan calls for the agency to increase the level of protection of endangered and threatened species as the habitats of most species continue to decline in quality or quantity, or both. These goals include plans to increase research activities and interpretive efforts, to increase the time spent by law enforcement personnel patrolling park lands inhabited by endangered species, and to increase resource management activities to protect and enhance designated species.²²⁷

Under the Warren S. Henderson Wetlands Protection Act of 1984,²²⁸ DER permitting criteria include consideration of the effect of dredge and fill activities on endangered and threatened species and their habitats.²²⁹ Because DER jurisdiction extends to dredge and fill activities in virtually all state waters,²³⁰ the legislature intended that a

220. FLA. ADMIN. CODE ANN. r. 39-27.002(1) (1989).

221. *Id.* Examples are captive breeding and foster-parenting. DNR may only issue permits for the designated marine species. *See* FLA. ADMIN. CODE ch. 16R-1 - 16R-4 (1987).

222. FLA. ADMIN. CODE ANN. r. 39-27.002(2) (1989).

223. *See* FLA. STAT. § 370.021(1),(5) (1989).

224. DNR AGENCY FUNCTIONAL PLAN, *supra* note 102, at 112.

225. *See* FLA. STAT. § 372.073 (1989).

226. *Id.* § 372.073(1).

227. DNR AGENCY FUNCTIONAL PLAN, *supra* note 102, at 111, 123.

228. FLA. STAT. §§ 403.91-.929 (1989).

229. *See* FLA. STAT. § 403.918(2)(a)(2) (1989). "[T]he Department shall consider . . . [w]hether the project will adversely affect the conservation of fish and wildlife, including endangered or threatened species, or their habitats." *Id.*

230. *See id.* § 403.913.

high degree of protection be afforded these species. If DER believes that a proposed project is within the habitat of an endangered or threatened species, the expert agency²³¹ will be consulted. Rejection or modification of the permit for the project may occur if recommended by the expert agency. However, consideration of endangered and threatened species is only one aspect of a broad public-interest balancing test. Effects on these species are not necessarily grounds for denying a permit, particularly if other public-interest aspects are strong, or if the applicant offers convincing mitigative action.

DNR is currently developing a procedure for review of sovereignty submerged land lease applications by other affected agencies and other regulatory and management divisions to ensure adequate protection of endangered species.²³²

1. Manatees

The West Indian manatee (*Trichechus manatus latirostris*) is listed as an endangered species and is specifically protected under the Florida Manatee Sanctuary Act.²³³ Under this Act, Florida is declared a refuge and sanctuary for the manatee. Areas of manatee concentration where protection is mandated include warm water discharge points for power plants²³⁴ and designated manatee sanctuary areas. As of 1987, twenty-one manatee sanctuaries exist, with four additional designations planned for 1988 and 1989.²³⁵ The GFWFC plays an integral part with DNR in manatee protection,²³⁶ because manatees are concentrated in Florida's coastal fresh and marine waters.

In 1988, a record number (133) of manatee deaths occurred. That record was exceeded in 1989 with 165 manatee deaths recorded statewide. With eighty-five deaths in the first two months of 1990, manatees continue to die at a record pace.²³⁷ To reduce manatee mortality, it is necessary to understand the cause of death. DNR and the United States Fish and Wildlife Service have ongoing programs to salvage manatee carcasses, document causes of manatee mortality, and transfer detailed information to a computerized database for analysis. The data reveal boat collisions, water control structures, fishing gear en-

231. The expert agencies are the GFWFC and DNR. DNR is often asked to make analyses of the effects of the proposed project on manatees.

232. See DNR AGENCY FUNCTIONAL PLAN, *supra* note 102, at 124-25. This will be carried out by the Division of State Lands under the authority of section 253.03 of the Florida Statutes.

233. FLA. STAT. § 370.12(2) (1989).

234. *Id.* § 370.12(2)(i).

235. DNR AGENCY FUNCTIONAL PLAN, *supra* note 102, at 119.

236. See FLA. STAT. § 370.12(2)(l) (1989).

237. Tallahassee Democrat, Mar. 28, 1990, at C1.

tanglement, cold-related death, and vandalism as the primary causes of manatee mortality.²³⁸

DNR is authorized by the Act to promulgate and enforce rules "regulating the operation and speed of motorboat traffic only where manatee sightings are frequent," regardless of the time of year.²³⁹ As boating-related deaths and injury are a significant contributor to the manatee's declining population, this legislation is an important tool for their protection. However, DNR's power to promulgate boating regulations is limited: Restrictions cannot "unduly interfer[e] with the rights of fishermen, boaters, and water skiers using the areas for recreational and commercial purposes."²⁴⁰

Because manatees cannot read signs, designating speed zones in areas frequented by manatees will not completely protect them. Consequently, DNR has attempted to protect the manatee through public education and information programs. The greatest success has been the assimilation of manatee educational materials into primary and secondary school curriculums. Almost every child attending a Florida school obtains at least a minimal awareness of manatees. Educating adults about manatees, however, is a more difficult task. DNR's Office of Communications is currently reviewing all existing manatee materials and creating new materials aimed at boaters. DNR hopes to give boaters a better understanding of manatee habitat and behavior and ways to avoid collisions with manatees.

2. *Sea Turtles*

Five species of marine turtles are protected under Florida's saltwater fisheries statutes.²⁴¹ The Kemp's ridley turtle is the most imperiled species, with only about 600 nesting females remaining in the Atlantic Ocean and Gulf of Mexico. Since October 1988, turtle strandings and mortality in northeast Florida have occurred in extremely high numbers. While only thirty-two strandings of Kemp's ridley turtles were reported for northeast Florida and Georgia for the 1980-1986 period, 149 strandings, including fifty-five Kemp's ridley turtles, were re-

238. DNR AGENCY FUNCTIONAL PLAN, *supra* note 102, at 113.

239. FLA. STAT. § 370.12(2)(f)-(h) (1989). The Act also authorizes DNR to regulate areas where "it can be generally assumed that [the manatees] inhabit these areas on a regular or continuous basis." *Id.* § 370.12(2)(f).

240. *Id.* § 370.12(2)(j).

241. Section 370.021(2)(c)(5) of the Florida Statutes lists Atlantic loggerhead turtles, Atlantic green turtles, leatherback turtles, Atlantic hawksbill turtles, and Atlantic (Kemp's) ridley turtles as protected species.

ported in Florida north of Cape Canaveral during the period from October 1988 to January 1989.²⁴²

Section 370.12(1) of the Florida Statutes prohibits the taking, disturbing, or killing of any marine turtle, but a broad exception applies to situations where the act is "by accident in the course of normal fishing activities." Accidentally captured turtles must be returned "alive" to the water, but turtles caught in shrimping nets during long duration trawls often do not survive.

Both the federal Endangered Species Act of 1973²⁴³ and emergency rules of the Florida Marine Fisheries Commission (MFC)²⁴⁴ require the use of Turtle Excluding Devices (TED's) on shrimping nets. Regulations under the Endangered Species Act alternatively allow tow time restrictions for some vessels.²⁴⁵ Federal restrictions, which entered into effect in May 1989, apply to both state and federal waters. The Florida Supreme Court recently upheld the authority of the MFC to promulgate rules to require TED's and to protect sea turtles.²⁴⁶

Penalties for taking, harvesting, or possessing marine turtles or eggs can be relatively minor if only one or two turtles are involved. Legislation provides, however, that violation of the turtle protection provisions adds \$100 for each wildlife unit, *or part thereof*, to the penalty applicable to any violation of a saltwater fisheries rule.²⁴⁷ Since a turtle nest typically contains 100-150 eggs, this fine could be quite sizeable when imposed upon an egg poacher.

DNR also attempts to protect nesting sea turtles through its regulatory and management programs. Applications for coastal construction must adequately consider turtle nesting seasons and must provide a method for ensuring the protection of nests. Beach restoration and renourishment projects must consider enhancement of turtle nesting.

Note: The Florida Department of Natural Resources conducted hearings during August 1989 concerning manatee protection and made

242. Marine Fisheries Comm'n, Fla. Dep't of Natural Resources, Emergency Required Tow Times and Use of Turtle Excluder Devices in Trawls, Northeast Florida (Jan. 24, 1989) [hereinafter Emergency Rule].

243. 16 U.S.C. §§ 1531-1544 (1988).

244. See Emergency Rule, *supra* note 242.

245. National Marine Fisheries Service regulations generally require that shrimpers with vessels of 25 feet or longer operating in offshore waters use a qualified TED. If the vessel is less than 25 feet or is trawling in inshore waters, the shrimper may limit the tow time to 90 minutes rather than use a TED. See 50 C.F.R. § 227.72(e)(2),(3) (1989).

246. *State v. Davis*, 556 So. 2d 1104 (Fla. 1990).

247. The penalty for a first conviction is imprisonment up to sixty days or a fine between \$100 and \$500, or both. FLA. STAT. § 370.021(2) (1989). Recently, a poacher was caught stealing a total of 582 turtle eggs. He pled guilty and was sentenced to one year in jail and an \$11,250 fine. *Turtle-Egg Thief Given Toughest Sentence Ever*, Tallahassee Democrat, May 13, 1990, at E4.

specific recommendations to the Governor and Cabinet concerning agency and legislative action needed to reduce manatee mortality. FLORIDA DEP'T OF NATURAL RESOURCES, RECOMMENDATIONS TO IMPROVE BOATING SAFETY AND MANATEE PROTECTION FOR FLORIDA WATERS, FINAL REPORT 10-18 (1989). The recommendations, approved by the Governor and Cabinet on October 24, 1989, call for increased protection of habitat, authorization for local government ordinances to protect manatees, and increased staff for manatee protection programs. Legislation has been introduced to the 1990 Florida Legislature concerning these issues and also providing for manatee sanctuaries and funding for the Save the Manatee Trust Fund. See Fla. HB 1763 (1990).

D. Other Protection and Restoration Programs

1. Coral Reefs

The Florida Reef Tract, the most extensive living coral reef system in the continental United States, extends along the Florida Keys from the Miami area to the Dry Tortugas. The most luxuriant concentrations are in the northern tract—Miami to Key Largo—and the southern tract—Big Pine Key to the Dry Tortugas. Corals in the middle tract area are relatively scarce, but although they do not provide the visual spectacle of the other tracts, they are as important to the ecosystem.

Coral reefs are an essential part of the marine ecosystem of the Keys, providing habitat and supporting a diverse population that includes over 500 species of fish. The reefs also protect the Keys from storms, produce sand for beaches, and contribute to the economy of the Keys by attracting divers, snorkelers, and fishermen. Because coral reefs are a tropical phenomenon and the Florida Reef Tract is the most northern range, the reefs are fragile and already stressed by natural events. They are extremely vulnerable to additional external stresses on the system from man's activities.²⁴⁸

Damage to coral reefs is done in numerous ways, and recovery by the reef is very slow. One of the primary sources of reef damage is anchor damage caused by small boats. In an attempt to mitigate accidental anchor damage, an anchor-buoy system has been devised. The anchor-buoy system consists of marking coral reefs with a buoy,

248. U.S. DEP'T OF COMMERCE & FLA. DEP'T OF ENVTL. REG., FINAL ENVIRONMENTAL IMPACT STATEMENT OF THE PROPOSED COASTAL ZONE MANAGEMENT PLAN FOR THE STATE OF FLORIDA II-172 to -178 (Aug. 1981).

thereby alerting boaters to the location of the reefs and providing alternative mooring. This system has been used successfully on many reefs off of Key Largo and Looe Key.

Florida reefs have also historically been damaged by ships running aground. Examples of this type of damage include everything from freighters like the *Wellwood*, which ran aground in August 1984 causing severe damage to extensive areas of the reef, to small boats, which scrape and imbed the reefs with paint and fiberglass.²⁴⁹

Vessel damage is not the sole cause of physical damage to the reefs. Deployment and recovery of lobster and fish traps also contribute to the crushing and scarring of the reefs. Traps that are placed on reefs or pulled across reefs until they clear the bottom often abrade or dislodge corals and other reef organisms.²⁵⁰ In addition, snorkeling and scuba diving take their toll on the reefs. Although the harvesting of coral is controlled by both the state and the federal governments,²⁵¹ the pressures placed on the reef community by divers is still extensive. To alleviate these pressures, possible options include creating additional artificial reefs, closing some reefs to allow recovery by the reef, limiting public use of overburdened reefs, and directing divers to reefs which experience less use.²⁵²

An additional threat to Florida's reefs which is not as apparent as ships running aground, but is as destructive, is the increase in coastal population. Such an increase has begun to wear away terrestrial protections which are vital to the growth of the reef communities. Vegetation, such as mangroves and seagrasses, provide a sequential filtration system which traps and slows potentially harmful land run-off from reaching the reefs. Moreover, the same urbanization that is destroying the filtration system is creating a greater need for the filtration system by dredging and dumping waste into the oceans. As the concentration of silt, organic debris, and nutrients increases, the depth at which sea grasses and corals can live decreases. This combination of turbidity and eutrophy stimulates microorganisms and decreases oxygen in the marine environment, thereby reducing larval corals from recruiting.²⁵³

Florida Statutes address protection of corals from several perspectives. The Florida Keys Protection Act²⁵⁴ requires that the local com-

249. Jaap & Hallock, *Reef Ecosystems*, in *FLORIDA ECOSYSTEMS* (R. Myers & J. Ewel eds.) (in press).

250. *Id.*

251. State and federal statutes protect stony coral and sea fan *Gorgonia* from harvest or sale. In addition, DNR requires permits for coral collecting within state waters, and the National Marine Fisheries Service requires permits for coral collecting in federal waters. *Id.*

252. *Id.*

253. *Id.*

254. FLA. STAT. § 380.0552 (1989).

prehensive plan and any plan amendments protect coral reef formations.²⁵⁵ Although the permitting criteria for dredge and fill projects do not specifically mention corals, the public interest test does require consideration of the effects of a project on fish and wildlife and their habitats, and the effects on recreational values and marine productivity in the vicinity of the project.²⁵⁶ Further, taking, possessing, destroying, and selling sea fans, stony coral, and fire coral is prohibited, except in limited circumstances when permitted for educational or scientific purposes.²⁵⁷ Finally, the Florida Area of Critical State Concern Restoration Trust Fund was created by the legislature to provide moneys for restoration and rehabilitation of injured or destroyed coral reefs and other natural resources.²⁵⁸ The fund may also be used to recover the costs of collecting fines for the injury and destruction of corals.²⁵⁹

A recent amendment to the federal Marine Protection, Research, and Sanctuaries Act of 1972 also imposes liability for damages to natural resources in marine sanctuaries and national parks. The provisions cover damage from any source, including pollution, vessel groundings, and intentional destruction. The amendment directs the Secretary of Commerce to initiate civil actions to recover response costs and damages, and to put recovered funds in a special account to be used for resource restoration.²⁶⁰

Five portions of the Florida reef tract receive additional protection and management from two levels of government:

- 1) John Pennekamp Coral Reef State Park is located in state waters off Key Largo and is managed by DNR's Division of Recreation and Parks.
- 2) Key Largo Coral Reef Marine Sanctuary is adjacent to and seaward of Pennekamp. The sanctuary is the responsibility of the Office of Ocean and Coastal Resources Management within the United States Department of Commerce, but day-to-day management responsibility has been delegated to DNR.

255. *Id.* § 380.0552(7)(b).

256. *See id.* § 403.918(2)(a)(2),(4).

257. *Id.* § 370.114. Taking or damaging coral for any reason is prohibited within John Pennekamp Coral Reef State Park. *Id.* § 258.083.

258. *Id.* § 380.0558(5)-(6).

259. *Id.* § 380.0558(6)(b)(1). For a description of how damages to a coral reef might be estimated, see Mattson & DeFoor, *Natural Resource Damages: Restitution as a Mechanism to Slow Destruction of Florida's Natural Resources*, 1 J. LAND USE & ENVTL. L. 295 (1985).

260. *See* Act of Nov. 7, 1988, Pub. L. No. 100-627, 102 Stat. 3213 (codified in scattered sections of 33 U.S.C.A. §§ 1401-1445 and 16 U.S.C.A. §§ 1431-1445 (West Supp. 1989)).

3) Looe Key National Marine Sanctuary is under the jurisdiction of the federal Office of Ocean and Coastal Resources Management, with day-to-day management assigned to DNR.

4) Biscayne National Park includes waters of south Biscayne Bay, the northern Florida Keys, and offshore waters that extend to outer bank reefs. The United States Department of Interior's National Parks Service has management responsibility.

5) Fort Jefferson National Monument is located at the Dry Tortugas, sixty-eight miles west of Key West, and is the responsibility of the Department of Interior's National Park Service.

Issue: A need for additional protection. Florida's reefs need additional protection and more coordinated management and research. The interests at stake are both short-term and long-term. Florida's reefs affect the economic well-being of the state in the short-term, because the vitality of the state's commercial and recreational marine activities depends upon the quality of the reefs. The safety of the state's coastal development in the long-term is also dependent on the quality of the reefs. Sea level is rising at a rate of several centimeters per year. Although healthy reefs can sustain an equal growth rate to that of the rising sea, when coral is dying and the foundations of the reef are being broken down by pollution, the reef's natural function as a breakwater is diminished, and the rise in sea level becomes critical to coastal development.²⁶¹

Recommendations: The following actions will help execute current laws:

1) Federal and state governments have parallel efforts; however, they are not coordinated and are too fragmented. More interagency cooperation is needed to improve management and research efforts.

2) During the 1970's there was a high-level mapping project, but it was not detailed enough for use by researchers and managers. Technology has developed enough that a similar project could provide useful information for the management and protection of corals.

3) An area of major concern are the reefs off Key West from Pelican Shoals to Western Dry Rocks. This is an area of high activity and numerous vessel groundings located within state waters. Additional protective measures need to be adopted for these areas.

4) A strategy and mechanism is needed to identify stressed coral reef systems and to apply protective and restorative measures to these systems. One approach might be the establishment of an advisory

261. Jaap & Hallock, *supra* note 249.

body to DNR that would be responsible for recommending research needs, restoration activities, and management strategies.

5) All state waters in the Gulf of Mexico and South Atlantic south of twenty-six-degrees north latitude should be considered for designation as "Outstanding Florida Waters" to prevent degradation of water quality and to preserve corals.

Note: In 1989, the Florida Legislature authorized DNR to develop rules addressing the assessment of civil penalties for damage to coral reefs in state waters. See FLA. STAT. § 253.04(3) (1989). This authority has become even more important in light of recent developments. Four vessel groundings on delicate coral reefs occurred during a seventeen-day period between October 24 and November 16, 1989. The governor has requested that the United States Coast Guard consider moving tanker routes a safer distance off the state's coasts, creating a "tanker-free zone" near the Florida Reef Tract.

2. Seagrass Systems

Seagrasses are the only land plants that have totally returned to the sea.²⁶² They are flowering plants that live completely submerged in the state's coastal waters. Seagrasses grow in shallow estuaries and near-shore coastal waters. Since they require light to produce oxygen, the depth where they are found is limited by water clarity.²⁶³

Seagrasses serve an important function in coastal marine ecosystems. They are important sources of organic matter for food webs. Their leaves support plant organisms which serve as food for marine animals, including manatees. Seagrass beds serve as nursery and protective grounds for fish, shellfish, and turtles. As seagrass dies and decays, it serves as a source of nutrients for fish and shellfish which feed on decayed leaves. Seagrass roots hold soil and prevent erosion, and also retard currents, which improves water clarity. They also absorb nutrients from the soil, which pass to the marine animals that eat their leaves. In addition, seagrass systems support sport and commercial fisheries.

Approximately fifty-two species of seagrass can be found worldwide.²⁶⁴ Of the seven species of seagrass found in Florida, the four

262. Durako, *Turtlegrass (Thalassia testudinum Banks ex König) - A Seagrass*, 6 BIOTECH IN AGRIC. & FORESTRY 504, 504 (1988) (This article may be obtained from the Florida Dep't of Natural Resources, Bureau of Marine Research, 100 Eighth Ave. SE, St. Petersburg, FL 33701).

263. Florida Dep't of Natural Resources, Bureau of Marine Research, *The Underwater World of Florida's Seagrasses* (Oct. 1987) (pamphlet).

264. *Id.*

most common are turtle-grass, widgeon-grass, shoal-grass, and manatee-grass. Other more sparsely distributed seagrasses are star-grass, paddle grass, and Johnson's seagrass.²⁶⁵

Florida's coastal waters and estuaries are one of the largest seagrass resources on earth.²⁶⁶ Florida's seagrass beds are only a part of "an extensive system of submerged aquatic vegetation that extends around the Gulf of Mexico, through the Caribbean Sea, and into northern coastal areas of South America."²⁶⁷ Seagrass beds are located throughout the state's coastal areas. In 1987, Florida had an estimated 502,000 acres of seagrasses.²⁶⁸ The largest seagrass beds are found "in Florida Bay and behind the Florida Reef Tract, which spread from just south of Key Biscayne to west of Key West."²⁶⁹ Abundant meadows are located in the Big Bend area of the northwest coast of Florida.²⁷⁰ They are also found in protected bays and lagoons, behind reefs and barrier islands, as well as in the protected waters "from the Indian River, on the central east coast, to Santa Rosa Sound, on the northwest coast."²⁷¹ Seagrass beds are abundant in the estuaries and coastal lagoons of Charlotte Harbor and were once abundant in Tampa Bay.

"Seagrass meadows are among the richest and ecologically most important coastal habitats."²⁷² Nevertheless, they are being altered and destroyed by the development of coastal areas. Threats to seagrasses include agricultural activities, upland runoff, thermal pollution, dredging, offshore oil drilling, sewage discharges, industrial discharges, and commercial fishing. Florida's massive population increase over the last thirty to forty years has also adversely affected the productivity and distribution of seagrass systems. The trend in Florida's population increase along coastal areas will continue to have a significant detrimental impact on the state's remaining seagrass beds.

Seagrass beds have been reduced or destroyed in Ten Thousand Islands and Apalachicola Bay because excess runoff and turbidity have

265. *Id.*

266. Zieman, *A Review of Certain Aspects of the Life, Death, and Distribution of the Seagrasses of the Southeastern United States — 1960-1985*, in PROCEEDINGS OF THE SYMPOSIUM ON SUBTROPICAL-TROPICAL SEAGRASSES OF THE SOUTHEASTERN UNITED STATES 53, 54 (Florida Marine Research Pub. No. 24, 1987).

267. Livingston, *Historic Trends of Human Impacts on Seagrass Meadows in Florida*, in PROCEEDINGS OF THE SYMPOSIUM ON SUBTROPICAL-TROPICAL SEAGRASSES OF THE SOUTHEASTERN UNITED STATES 139, 141 (Florida Marine Research Pub. No. 24, 1987).

268. *The Underwater World of Florida's Seagrasses*, *supra* note 263.

269. Zieman, *supra* note 266, at 54.

270. *See id.*

271. *Id.*

272. *Id.* at 53.

created unfavorable conditions.²⁷³ Likewise, Pensacola Bay and Tampa Bay seagrass systems have almost been eliminated. Seagrass losses over the past years have also occurred in Choctawhatchee Bay, Apalachee Bay, Charlotte Harbor, Biscayne Bay, and the Indian River Lagoon.²⁷⁴

Since 1960, there has been increased interest in research in seagrass systems in such areas as seagrass distribution and production, human impacts, and habitat restoration and creation.²⁷⁵ Research on seagrass is conducted in Florida at the Mote Marine Laboratory, Sarasota; Florida State University, Tallahassee; and the Florida Marine Research Institute of the Florida Department of Natural Resources, St. Petersburg.²⁷⁶

A 1985 assessment of the habitat of Charlotte Harbor, one of the state's largest and least impacted estuaries, revealed a twenty-nine percent decrease in its seagrass beds.²⁷⁷ In 1945, Charlotte Harbor contained 82,959 acres of seagrass and by 1982 it contained only 58,495 acres.²⁷⁸ The decline is believed to have resulted largely from "dredging the intercoastal waterway[,] building and placement of the Sanibel causeway[,] and channeling the Caloosahatchee River."²⁷⁹

In the late 1960's the Charlotte Harbor area was the focus for effective state, regional, and local planning. A part of this plan was the acquisition, through purchases, mitigation and donation, of a buffer zone of wetlands around the harbor.

. . . .

From a management perspective, the development of a wetland buffer zone in Charlotte Harbor has been a success, but the loss of seagrasses suggests a failure in managing the entire harbor as a system.²⁸⁰

Issue: Inadequate protection of seagrass beds. Seagrass beds are being threatened, and their protection is inadequate. Even though much is known about local impacts of developmental, industrial, and agricul-

273. *Id.* at 54.

274. Livingston, *supra* note 267, at 139.

275. Phillips & Lewis, *Issues and Summary*, in PROCEEDINGS OF THE SYMPOSIUM ON SUBTROPICAL-TROPICAL SEAGRASSES OF THE SOUTHEASTERN UNITED STATES 1, 1 (Florida Marine Research Pub. No. 24, 1987).

276. *Id.*

277. Haddad & Hoffman, *Charlotte Harbor Habitat Assessment*, in MANAGING CUMULATIVE EFFECTS IN FLORIDA WETLANDS: CONFERENCE PROCEEDINGS 175 (Environmental Studies Program Pub. No. 38, Sept. 1986).

278. *Id.* at 182.

279. *Id.* at 175.

280. *Id.* at 185.

tural activities on the destruction of seagrass beds, information is needed on the system-wide, cumulative effects of such activities. Specific causes of long-term decline in certain seagrass systems have been identified. To manage seagrass resources effectively, however, the effects of numerous activities must be determined.²⁸¹ For example, it is estimated that 56,000 acres of seagrasses have died of an unknown disease in the Everglades National Park. "A pathogenic slime mold has been identified on the affected grass but it is not known whether this is a primary or secondary cause of the die-back or is a natural phenomenon, or if it has been induced through man-made environmental stress."²⁸²

Recommendations: Direct protection of seagrass areas by designation of marine sanctuaries and aquatic preserves is an important step. Restoration and creation of seagrass meadows is also needed to mitigate habitat damage and increase marine productivity. However, large scale restoration projects are not always ecologically or economically effective,²⁸³ natural seed production of seagrasses is not completely understood, and laboratory production of seagrasses is difficult and expensive.²⁸⁴

As indicated by the Charlotte Harbor Study, management strategy must not be limited to local and direct impacts. The cumulative impacts on marine habitats must also be addressed. Most of the seagrass loss in Charlotte Harbor resulted from indirect cumulative impacts which could not be specifically identified.²⁸⁵

Better land planning and resource management efforts are needed to protect seagrass habitats. The need for such protection has been recognized in the Florida Keys. One of the principles for guiding development in the Florida Keys is "[t]o protect shoreline and marine resources, including . . . seagrass beds . . . and their habitat."²⁸⁶ Moreover, all units of government, whether state, regional, or local, must coordinate their plans and regulatory activities to protect seagrasses in the Florida Keys.²⁸⁷

281. *Id.* at 190.

282. Report to the Commission on the Future of Florida's Environment by the Florida Division of Marine Resources, *What's Happening to Florida's Marine Environment?* 4 (Feb. 14, 1989).

283. *Id.* at 13.

284. *Id.*

285. Haddad & Hoffman, *supra* note 277, at 190-91.

286. FLA. STAT. § 380.0552(7)(b) (1989).

287. *Id.* § 380.0552(7).

3. *Outstanding Florida Waters*

Section 403.061(27)(a) of the Florida Statutes authorizes DER to create a special category of waters—Outstanding Florida Waters (OFW's)—to receive special protection. DER rules provide that OFW's will be afforded the "highest protection" in the permitting process.²⁸⁸ The OFW designation is essentially a nondegradation policy for waters determined to be "worthy of special protection." In general, the rules require that direct pollutant discharges to OFW's must not lower existing water quality and that indirect pollutant discharges must not significantly degrade OFW's.²⁸⁹ In addition, dredge and fill activities must be "clearly in the public interest."²⁹⁰

The policy of DER is to incorporate a number of important marine and coastal areas in the OFW designation, including waters within national parks, wildlife refuges, seashores, marine sanctuaries, estuarine research reserves, state parks, wilderness areas, aquatic preserves, and areas purchased under the Save Our Coast Program.²⁹¹ Other water bodies can be designated "Special Waters" and receive OFW protection if the Environmental Regulatory Commission finds the waters are of exceptional recreational or ecological significance and that the environmental, social, and economic benefits of the designation outweigh the environmental, social, and economic costs.²⁹²

Currently, DER rules for OFW's are being revised to include a category for waters of national significance as required by the Clean Water Act.²⁹³ No variances from a strict nondegradation policy will be allowed for these waters, but at this time no water bodies are proposed for this category.

4. *Surface Waters Improvement and Management Program*

On June 29, 1987, the Surface Water Improvement and Management Act (SWIM) was signed into law.²⁹⁴ Two of the primary concerns of the legislature which prompted the enactment of SWIM were surface water degradation and habitat destruction for native plants, fish, and wildlife. To accomplish the goals of SWIM, the legislature

288. FLA. ADMIN. CODE ANN. r. 17-3.041(2) (1989).

289. *Id.* r. 17-4.242.

290. FLA. STAT. § 403.918(2) (1989).

291. FLA. ADMIN. CODE ANN. r. 17-3.041(10)(a),(b) (1989).

292. *Id.* r. 17-3.041(13).

293. The Federal Water Pollution Control (Clean Water) Act, 33 U.S.C. §§ 1251-1387 (1982 & Supp. V 1987).

294. See ch. 87-97, 1987 Fla. Laws 444 (codified as amended at FLA. STAT. §§ 373.451-.4595 (1989)).

designated the state's five regional water management districts (WMD's) and DER as the lead agencies responsible for the Act's administration.

The SWIM Act's key provision is the mandate to the WMD's to prepare a priority list of water bodies of regional or statewide significance. The Act required this list to be prepared in cooperation with DER, GFWFC, and DNR. Additionally, the legislature specifically targeted six water bodies for study and cleanup: Lake Okeechobee, Lake Apopka, Indian River Lagoon, the Lower St. Johns River, Biscayne Bay, and Tampa Bay. Once the priority list is adopted, each WMD will develop and implement a surface water improvement and management plan for each of its listed water bodies. Each plan must include a schedule for restoring the water bodies on the list, as well as preventive measures for augmenting surface water improvement and management efforts. Each plan must be reviewed and, if necessary, revised annually by each WMD. DER is currently reviewing these plans.²⁹⁵

A Surface Water Improvement and Management Trust Fund, administered by DER, was also created. Water management districts may use these funds to implement their SWIM plans. However, SWIM specifically provides that no SWIM Fund money may be used for the planning, construction, expansion, or operation of treatment facilities for domestic or industrial waste disposal.²⁹⁶

The legislature appropriated \$15 million to fund the implementation of SWIM. Two million dollars was appropriated for Biscayne Bay, of which up to \$500,000 was targeted for the Miami River, and \$1.5 million was designated for stormwater retrofitting. The legislature designated \$2.0 million for Tampa Bay and its estuaries, with up to \$850,000 allocated for a water quality assessment and scientific information compilation. In addition, \$1.5 million was allocated to the Indian River Lagoon system, of which up to \$178,000 was recommended for the Marine Resource Council.²⁹⁷

5. *Federal Initiatives*

a. National Estuary Program

For several years the United States Environmental Protection Agency (EPA) has been implementing demonstration programs in an

295. See FLA. STAT. § 373.453 (1989).

296. *Id.* § 373.459.

297. *Id.* § 373.457.

attempt to determine how best to control pollution in estuaries with limited funds. Amendments to the Clean Water Act in 1987 added a new National Estuary Program to institutionalize the estuary program and to create the framework for a cooperative federal/state approach to control pollution in significant estuaries.²⁹⁸ Estuaries may become part of the program by nomination of the governor of a state as an estuary of national significance, or by initiative of the Administrator of the EPA if the Administrator finds that protection of an estuary requires the control of point and nonpoint sources of pollution in more than one state. Sarasota Bay was specifically listed in the Act as a priority for consideration.²⁹⁹

When an estuary is selected by the EPA, a management conference will be convened to develop a comprehensive conservation and management plan for the estuary to recommend corrective actions and a compliance schedule. The management conference will include representatives of the state, regional agencies, federal agencies, local governments, affected industries, public and private educational institutions, and the public.³⁰⁰

The National Oceanic and Atmospheric Administration, which administers the Coastal Zone Management Act of 1972,³⁰¹ and the EPA have reached an agreement which will coordinate the National Estuary Program with the states' Coastal Zone Management programs. The intent of this agreement is to "avoid duplication of effort, unnecessary expenditures of federal funds and the development of conflicting regulatory mechanisms." The agencies have agreed that estuary plans should be incorporated into the states' coastal zone management programs.³⁰²

In July 1988, Sarasota Bay was designated an estuary of national significance. The management conference agreement has been reached between DER and Region IV of the EPA, and the conference will be convened with the Southwest Florida Water Management District as chair. The Governor also nominated Tampa Bay for the program, and the Indian River Lagoon is also being considered. Because these estuaries, unlike Sarasota Bay, received no presumption of "national significance" by being listed in the legislation, further designations will probably not proceed until the EPA has promulgated regulations defining the qualities necessary for nomination to the program. The

298. See Water Quality Act of 1987, Pub. L. No. 100-4, §§ 317, 320, 101 Stat. 7, 61-65 (codified at 33 U.S.C. § 1330 (Supp. V 1987)).

299. 33 U.S.C. § 1330(a) (Supp. V 1987).

300. *Id.* § 1330(b),(c).

301. 16 U.S.C. §§ 1451-1464 (1988).

302. 19 COASTAL ZONE MANAGEMENT NEWSLETTER 1 (Sept. 20, 1988).

EPA has also indicated that no funding is available for additional designations during the 1989 fiscal year.

Note: On April 20, 1990, President Bush announced the designation of Tampa Bay and the Indian River Lagoon as part of the National Estuary Program. See Washington Times, Apr. 23, 1990, at A3.

b. The EPA Gulf Initiative

The EPA has also begun a program to focus on environmental issues in the Gulf of Mexico. The EPA has identified problems including nutrient over-enrichment, toxics and pesticide contamination, habitat degradation, freshwater diversion, and public health concerns that are common to the entire Gulf of Mexico region. Many of these problems can best be approached on a Gulf-wide basis. Through the Gulf Initiative, the EPA intends to provide a regional forum for user groups and the public, and to provide a regional perspective in prioritizing research needs. Rather than creating a new management regime, the Gulf Initiative will provide an institutional structure to address complex interjurisdictional issues and to improve coordination among federal, state, and local programs affecting the Gulf.³⁰³

c. The EPA Near Coastal Waters Initiative

Another long-term strategic planning initiative begun by the EPA in 1985 is the Near Coastal Waters Initiative. In workshops held in 1986, participants identified five major national environmental problems affecting near coastal waters: toxics contamination, eutrophication, pathogens, habitat loss or alteration, and changes in living resources. The workshops were also used to generate concepts for maintaining and enhancing nearshore water quality. Pilot projects have recently begun in three representative areas of the country to demonstrate means of dealing with the identified problems. The Delaware, Oregon, and Perdido Bay³⁰⁴ projects are still in early stages. In the Perdido Bay project, which has received initial funding of \$250,000, the United States Fish and Wildlife Service is working with the EPA to identify pollution sources and to propose management techniques. Coastal Zone Management grants have provided funding for initial water quality surveys. A citizen's group, Friends of Perdido Bay, is

303. Environmental Protection Agency, *The Gulf Initiative: Protecting the Gulf of Mexico* (undated pamphlet).

304. Perdido Bay lies on the border between Northwest Florida and Southeast Alabama.

participating in the project by developing a citizen's initiative and a public education program intended to involve the public directly in restoring and protecting Perdido Bay.

d. The EPA National Coastal and Marine Policy

In January 1989, the EPA released a draft of its National Coastal and Marine Policy. The draft policy recognizes the importance of coastal and marine resources to the nation's growth, economy, and security, and states that the EPA will protect human health and sustain living resources. Policy goals include the following:

- 1) Recovering recreational use of beaches and waters by reducing sources of contamination and debris.
- 2) Restoring fisheries and protecting marine mammals and other living resources by controlling pollution and habitat loss.
- 3) Minimizing waste disposal at sea.
- 4) Expanding research and monitoring programs to better understand the effects of pollution on complex ecosystems.
- 5) Promoting international efforts to reduce pollution and protect marine resources and habitat.³⁰⁵

The EPA has identified specific objectives to carry out the goals of the coastal and marine policy. Accomplishing the objectives will require the cooperation and efforts of all levels of government. Implementation of other EPA initiatives, such as the National Estuary Program and the Near Coastal Waters Initiative, are an integral part of reaching the policy goals.

Issue: Opportunities for Florida. Florida should take full advantage of the opportunities offered by the National Estuary Program, the Gulf Initiative, and the Near Coastal Waters Initiative. In addition to participating fully in plan development and implementation in designated estuaries, near shore areas, and the Gulf, the state should use existing programs to complement these federal initiatives.

Recommendation: Sarasota Bay should be designated a "water of national significance" under the state's Outstanding Florida Waters rule. In addition, the management plan that is developed for Sarasota Bay should be incorporated into the state's coastal management program.

305. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, NATIONAL COASTAL AND MARINE POLICY 1 (1989).

VIII. MARINE FISHERIES MANAGEMENT

A. *Florida's Fisheries Resources and Its Users*³⁰⁶

Development of the commercial fishing industry in Florida coincided with settlement of the region. The seafood-producing industry has had an important role in the economic development of the state, but has remained in most aspects a "small business" in that the independent fisherman is the primary economic unit. Approximately 12,000 commercial fishermen operate in Florida today using 6,200 boats.³⁰⁷

Florida's commercial fish landings, which exceed 200 million pounds per year, are well behind many coastal states, but Florida ranks high in dockside value of fish. Florida's harvest includes numerous high-value species and is not dependent on a single high-volume, low-value species as in many states. Only Texas, which produces shrimp almost exclusively, has a higher value per pound.

Estimates of the impact of commercial fishing on Florida's economy are quite dated. One author, using 1981 landing figures and methodology from a 1975 study, estimated a total impact of \$1.1 billion, not including impacts on the retail sector.³⁰⁸

Recreational anglers began to discover Florida in the late 1800's. By the early 1900's, Florida had become well-known for "big game angling."³⁰⁹ Today, tourists come from more than thirty-nine states and nine countries to fish Florida waters and contribute to the almost sixty million angler days spent saltwater fishing. One in every 4.5 people in Florida also participates in recreational fishing.³¹⁰

A fairly good estimate of freshwater activity can be determined from license sales. Because no license was required for saltwater sport-fishing until 1990, information on marine recreational fishing is generally inadequate and must be extrapolated from other data.³¹¹ There have been numerous studies, however, of the impact of recreational fishing on the Florida economy. The contribution to the state's economy has been estimated at \$1.871 billion in direct expenditures and \$3.187 billion in indirect expenditures.³¹²

306. Cato, *An Overview of the Economics of Fisheries and Habitat in Florida*, in *FLORIDA AQUATIC HABITAT AND FISHERY RESOURCES* 21 (W. Seaman, Jr., ed. 1985), is the primary source for this section.

307. *Id.* at 31. There are, however, about 25,000 boats registered commercially in Florida.

308. *Id.* at 25.

309. *Id.* at 21-24.

310. *Id.* at 32-33.

311. In 1988, the legislature did establish a licensing program for the harvest of tarpon. See ch. 88-170, 1988 Fla. Laws 966 (codified at FLA. STAT. § 370.062 (1989)).

312. Cato, *supra* note 306, at 32.

Florida's most important commercial marine species are shrimp, mullet, blue crab, scallops, menhaden, grouper, oysters, king and Spanish mackerel, spiny lobster, stone crabs, swordfish, and red snapper.³¹³ Recreational fishermen generally target trout, king mackerel, Spanish mackerel, amberjack, red drum, dolphin, grouper, and snapper. In recent years, declines in king and Spanish mackerel, grouper, red snapper, and red drum stocks, have required management constraints, which have led to conflicts over allocation of catch between commercial and recreational fishermen.

B. Federal Fisheries Management

The Magnuson Fishery Conservation and Management Act (MFCMA)³¹⁴ created a federal fishery conservation zone (FCZ) extending from state territorial sea boundaries to 200 miles off shore. In the FCZ, the United States claims authority to manage and regulate all fisheries, except highly migratory species such as tuna. The policies and purposes of the Act are directed toward the conservation, development, and management of fisheries resources and the development of domestic commercial and recreational fishing.³¹⁵

The MFCMA established eight regional fishery management councils to formulate management plans that are enforced through regulations of the United States Department of Commerce (DOC). The councils include the regional director of the DOC's National Marine Fisheries Service (NMFS) and state fisheries management officers, as well as individuals from each state who are representative of different fisheries interests. These individuals are recommended by state governors and appointed by the Secretary of Commerce. Florida is represented on two regional councils: the South Atlantic Fishery Management Council and the Gulf of Mexico Fishery Management Council.³¹⁶ Florida has two voting appointees and the voting Director of the Marine Fisheries Commission on each council.

Management plans are developed for fisheries based on national standards set out in the MFCMA. In summary, the seven national standards require the regional councils to establish nondiscriminatory conservation and management measures based on the best scientific knowledge to assure optimum yield. Fisheries should be managed throughout their range, and measures should be taken to promote ef-

313. *Id.* at 25.

314. 16 U.S.C. §§ 1801-1882 (1988).

315. *See id.* §§ 1801-1813.

316. *See id.* § 1852.

iciency and to avoid duplication.³¹⁷ The Secretary of Commerce must approve all plans and promulgate regulations to implement each fishery management plan. Federal fisheries regulations are enforced by the Coast Guard and the Florida Marine Patrol at sea and by NMFS in port.

To date, the following fishery management plans have been developed by the South Atlantic and Gulf management councils:³¹⁸

Migratory Pelagics (mackerels)	- Joint
Coral and Coral Reefs	- Joint
Reef Fish	- Gulf
(snapper, grouper, sea basses)	
Snapper/Grouper	- South Atlantic
Shrimp	- Gulf, South Atlantic
Stone Crab	- Gulf
Spiny Lobster	- Joint
Swordfish	- Joint
Billfish	- Joint
Summer Flounder	- South Atlantic
Red Drum	- Gulf, South Atlantic
Bluefish	- Part of migratory pelagics plan in Gulf; Joint South Atlantic, Mid-Atlantic & New England Council on the east coast

The MFCMA recognizes state authority to regulate fisheries within the territorial sea and under certain circumstances in the FCZ. Section 1856(a)(1) of the MFCMA provides that nothing in the Act "shall be construed as extending or diminishing the jurisdiction or authority of any state within its boundaries." The section also provides that "a State may not directly or indirectly regulate any fishing vessel outside its boundaries, *unless the vessel is registered under the law of that State.*"³¹⁹ This section has been the source of a great deal of confusion concerning exactly what authority states may exercise beyond the territorial sea and what means they may use to enforce fishery regulations.³²⁰ The most generally accepted interpretation of the section

317. *Id.* § 1851(a)(1)-(7).

318. Telephone interview with Roy Williams, Marine Fisheries Commission (Apr. 30, 1990).

319. 16 U.S.C. § 1856(a)(3) (1988) (emphasis added).

320. For example, landing and possession laws may be prohibited because they indirectly regulate non-Florida fishing vessels outside of state boundaries.

recognizes continuing state management involvement in areas where a legitimate state interest exists. This interpretation is summarized in an article by Eldon Greenberg and Michael Shapiro:

[T]he Magnuson Act allows the exercise of state police power over FCZ fishing where:

1. The state regulation is not in conflict with any applicable federal fishery regulation, *i.e.*,
 - a. There are no federal fishery regulations for the subject fishery and there is no affirmative decision by the federal government that any regulation in such fishery would be inappropriate; or
 - b. Compliance with both federal and state regulation is possible; or
 - c. Enforcement of the state regulation would not interfere with the fulfillment of the objectives of the applicable federal regulations; and
2. The vessel from which the fishing took place is "registered" under state law; and
3. The state's legitimate interest in the fishery justifies the direct or indirect effect of its regulation of fishing in the FCZ; and
4. The regulation neither discriminates against vessels from other states nor constitutes an undue burden on interstate commerce nor violates any other federal right or authority.³²¹

The federal government may also exert authority over territorial sea fisheries when a federal fishery management plan is in place for a predominantly FCZ fishery and a state takes an action, or fails to take an action, which results in substantial and adverse effects on the implementation of the fishery management plan.³²² This authority has been used infrequently and has only involved salmon fisheries in the Pacific northwest.

In 1986, Congress took initial steps to link fisheries management and habitat protection. Amendments to the MFCMA in 1986 required fishery management plans to contain habitat information and assessments of the effect of habitat change on the marine resource. Of perhaps even more significance, councils were given the authority to "comment on, or make recommendations concerning, any activity undertaken, or proposed to be undertaken, by any State or Federal agency that, in the view of the Council, may affect the habitat of a fishery resource under its jurisdiction."³²³

321. Greenberg & Shapiro, *Federalism in the Fishery Conservation Zone: A New Role for the States in an Era of Federal Regulatory Reform*, 55 S. CAL. L. REV. 641, 682-83 (1982).

322. 16 U.S.C. § 1856(b) (1988).

323. Act of Nov. 14, 1986, Pub. L. No. 99-659, § 104(b), 100 Stat. 3706, 3709-10 (codified at 16 U.S.C. § 1852(i) (1988)).

Both the Gulf and South Atlantic councils have established Habitat Advisory Committees. The South Atlantic committee is still in the organizational phase and had its first meeting in August 1988. The Gulf advisory committee has been actively involved in review of several Army Corps of Engineers projects.

C. Florida Marine Fisheries Management

Although Florida has managed fisheries since 1861, management responsibilities have been shuffled among numerous agencies and authorities for over a century.³²⁴ In 1969, the Department of Natural Resources (DNR) was created and charged under chapter 370 of the Florida Statutes with the responsibility of "preserving, managing and protecting the marine, crustacean, shell and anadromous fishery resources" of the state.³²⁵ DNR had general rulemaking authority, but fishery management was largely accomplished through detailed legislation. Through the years, the legislature responded to specific issues with little or no consideration of a comprehensive fishery management policy. The result was a mass of confusing and sometimes conflicting statutes, including over 220 local laws.³²⁶

In 1980, the legislature created the Saltwater Fisheries Study and Advisory Council to develop a comprehensive saltwater fishery conservation and management policy for the state's territorial waters. The recommendations of the Council resulted in legislation in 1983 that established policies and standards for marine fisheries management and that created the Marine Fisheries Commission within DNR.³²⁷

The Marine Fisheries Commission (MFC) is composed of seven members appointed by the Governor to give consideration to various "affected interests."³²⁸ The MFC has full rulemaking authority over marine life, except endangered species, subject to approval by the Governor and Cabinet.³²⁹ Although the legislation only authorized a staff of four,³³⁰ the MFC's initial directive under the legislation was to review all of chapter 370's fishery provisions and recommend management measures to the Governor and Cabinet, and to review all local laws and determine whether each should be repealed, consolidated

324. SALTWATER FISHERIES STUDY AND ADVISORY COUNCIL, FINAL REPORT 1 (reprinted 1982).

325. *Id.*

326. *Id.* at 2.

327. See ch. 83-134, §§ 1, 4, 1983 Fla. Laws 470, 471, 476-77 (codified at FLA. STAT. §§ 370.025-.026 (1989)).

328. FLA. STAT. § 370.026(1) (1989).

329. *Id.* § 370.027(1).

330. See *id.* § 370.026(2).

into statewide rules, or retained. However, the inconsistencies in management that led to the creation of the MFC still exist, because most of the MFC's efforts have had to be directed toward emergency management and stressed stocks.

As of September 1988, fifty-two sets of rules recommended by the MFC had been approved by the Governor and Cabinet. The primary fisheries currently managed through MFC rules include the following:³³¹

Sponge	Spiny & Slipper Lobster	Stone Crab
Tarpon	Snapper, Grouper & Sea Bass	Sturgeon
Pompano	Queen Conch	Hard Clams
Scallops	Black Drum	Bay Cobia
Mullet	Spearfishing	Snook
Amberjack	Spotted Seatrout	Oysters
Billfish	King Mackerel, Spanish Mackerel	Shrimp
Bonefish	Sardines (Tampa Bay)	Red Drum

Chapter 370 requires that all rules adopted by the MFC and approved by the Governor and Cabinet be consistent with the following state statutory policies and standards:

(a) The paramount concern of conservation and management measures shall be the continuing health and abundance of the marine fisheries resources of this state.

(b) Conservation and management measures shall be based upon the best information available, including biological, sociological, economic, and other information deemed relevant by the commission.

(c) Conservation and management measures shall permit reasonable means and quantities of annual harvest, consistent with maximum practicable sustainable stock abundance on a continuing basis.

(d) When possible and practicable, stocks of fish shall be managed as a biological unit.

(e) Conservation and management measures shall assure proper quality control of marine resources that enter commerce.

(f) State marine fisheries management plans shall be developed to implement management of important marine fishery resources.

(g) Conservation and management decisions shall be fair and equitable to all the people of this state and carried out in such a manner that no individual, corporation, or entity acquires an excessive share of such privileges.

331. Telephone interview with Roy Williams, *supra* note 318.

(h) Federal fishery management plans and fishery management plans of other states or interstate commissions should be considered when developing state marine fishery management plans. Inconsistencies should be avoided unless it is determined that it is in the best interest of the fisheries or residents of this state to be inconsistent.³³²

The Florida standards differ from the federal management standards in one very important respect. The optimum yield approach of the federal government uses quotas based on the scientifically determined maximum sustainable yield, "*modified by any relevant economic, social, or ecological factor.*"³³³ Chapter 370 of the Florida Statutes sets as a paramount management objective "the continuing health and abundance of the marine fisheries resources of this state," untempered by social or economic considerations.³³⁴

Although the MFC has been granted rulemaking authority for marine fisheries management, DNR continues to be charged with the administration, supervision, development, and conservation of fishery resources, and the enforcement of fishery laws and rules. DNR implements fishery management plans and rules, and regulates all fishermen and fishing vessels. DNR also has authority to regulate public health aspects of harvesting, processing, and shipping oysters, clams, mussels, and crabs.³³⁵

The Bureau of Marine Research of DNR, recently reorganized into the Florida Marine Research Institute, is directed "to conduct scientific, economic, and other studies and research . . . directed to the broad objective of managing . . . resources in the interest of all people of the state."³³⁶ To meet these responsibilities, the Institute provides research data and management plan proposals to the MFC. Unfortunately, the legislature does not fund research at the level necessary to prepare adequately the numerous plans that are pending. Management plans for stressed or over-utilized fisheries often cannot wait for complete information, but plans based on incomplete and insufficient data are difficult to support and lead to stricter regulation and public dissatisfaction with the plans and the management process.

D. Artificial Reefs

1. Background

"Anything you throw in [the water] will develop a fish population," says biology professor William Alevizon from the Florida Insti-

332. FLA. STAT. § 370.025(2)(a)-(h) (1989).

333. 16 U.S.C. § 1802(18)(B) (1988) (emphasis added).

334. See FLA. STAT. § 370.025(2)(a) (1989).

335. See *id.* § 370.02.

336. *Id.* § 370.02(2)(a).

tute of Technology.³³⁷ Materials deposited on sandy ocean bottoms have been found to attract fish populations and to create an alternative to rocky or coral bottoms as fisheries habitat. This fact has been known for over one hundred years, but the drastic decline in many fisheries in the past few decades has recently led recreational fishermen to seriously consider artificial reefs as a fisheries management tool and to support their establishment.

Florida, with over 200 permitted artificial reef sites, probably already has more artificial reefs than all other states combined. Everything from old freighters and oil rigs to a Rolls Royce has been sunk off the Florida coast to enhance fisheries. Dade County has one of the country's most active programs, which creates a new reef about every ten days.³³⁸

The economic benefits of artificial reefs are difficult to ascertain. Their benefits must be measured according to the particular user groups and local communities. The main benefactors of the reefs are charter-boat fishermen, divers, and private boaters. There are no user fees imposed on artificial reefs. Thus, it is difficult to measure the actual use of the various facilities and to determine how much people will pay to use artificial reefs.

In 1988, a study was conducted in Dade County to determine the economic benefits of artificial reefs to public boat users, *i.e.*, recreational fishermen and sport divers.³³⁹ Although the economic benefits are not directly measurable, economic valuation methods enabled the study to provide several dollar estimates. For example, individual users of the reef system appear to be willing to pay between \$18.04 and \$26.57 in annual fees for a new artificial reef site.³⁴⁰ Annual benefit estimates for a new reef site ranged from \$17,500,000 to \$128,333,333.³⁴¹

Although artificial reefs undoubtedly enhance recreational and some commercial fishing opportunities, there have been criticisms of artificial reef development. The most critical issue has been whether the reefs actually contribute to the total fish population or whether they merely draw fish from other areas. It has been argued that by creating concentrated "hot spots" where fish are more easily caught, artificial reefs may actually contribute to the further depletion of

337. *Artificial Reefs Boost Fish Population*, Reporter Weekly, Tavernier, Fla., June 23, 1988.

338. *Id.*

339. See J. MILON, *THE ECONOMIC BENEFITS OF ARTIFICIAL REEFS: AN ANALYSIS OF THE DADE COUNTY, FLORIDA REEF SYSTEM* (Sea Grant Report No. 90, Dec. 1987).

340. *Id.* at 59.

341. *Id.* at 57.

stocks. A recent study by biologists of the Florida Institute of Technology, however, has found preliminarily that artificial reefs do contribute to the total biomass of a reef system.³⁴² The biologists found that rather than simply redistributing fish, artificial reef construction doubled the population of fish within a reef system within two years by providing shelter for fish larvae and protection from predators.

Other criticisms of artificial reefs concern construction and siting. Reefs that are improperly constructed can disappear or break apart and cause damage to the natural habitat.³⁴³ More emphasis is now being given to design and composition of artificial reefs. Research is currently underway to determine the most effective materials and design. Both proponents and critics have objected to the idea that reef creation be used as merely a convenient means of disposing of large solid waste.

Siting of reefs has also been an extremely controversial issue. Poorly sited reefs, particularly ones placed too far offshore, have limited benefits for recreational fishermen. Occasionally, reefs have been placed in areas traditionally used for commercial fishing activities and have created user conflicts. Reefs can also create navigational and safety hazards. In the worst instance, materials may be deposited on live bottoms, destroying existing natural habitats. There is also some concern that not enough is known about the role of sandy, barren bottoms in the ecosystem to evaluate the impact of use of those areas for artificial reef construction.

2. *The Federal Artificial Reef Program*

In 1984, Congress passed the National Fishing Enhancement Act of 1984³⁴⁴ to enhance fishery resources, increase fishery production, and benefit coastal economies by encouraging "properly designed, constructed, and located artificial reefs" based on the best scientific evidence.³⁴⁵ The Act requires the Secretary of Commerce to develop a long-term National Artificial Reef Plan. The plan should include general criteria and guidelines for siting, materials, design, and construction of artificial reefs, and mechanisms and methodologies for permit compliance monitoring and management of reefs.³⁴⁶ The Act empha-

342. See Reporter Weekly, *supra* note 337.

343. Stone, *The Federal Role in Artificial Reef Development*, in PROCEEDINGS: THE SIXTH ANNUAL GULF OF MEXICO INFORMATION TRANSFER MEETING 105, 105 (U.S. Dep't of Interior Oct. 1985).

344. Pub. L. No. 98-623, 98 Stat. 3394 (codified at 33 U.S.C. §§ 2101-2106 (Supp. V 1987)).

345. *Id.* §§ 202(a)(5), 203, 33 U.S.C. §§ 2101(a)(5), 2102 (Supp. V 1987).

346. *Id.* § 204, 33 U.S.C. § 2102.

sizes that siting, construction, and management of reefs must address the interests of a wide variety of users, not just reef developers.³⁴⁷

The National Artificial Reef Plan is general in scope and is intended to provide a framework for the development of more detailed, site-specific plans by state, regional, and local planners. Some federal regulators believe the states' role in the artificial reef development process is

to develop, or participate in developing, site-specific plans and to retain and strengthen regulatory and quality control to ensure that all reef construction (1) has biological justification to meet present and future fishery management needs; (2) minimizes negative effects on, and conflicts with, existing fisheries and uses; (3) minimizes negative impacts on other natural resources and their future use; (4) uses materials that have long-term compatibility with the aquatic environment; and (5) is subsequently monitored to determine if it meets permit terms and conditions and the original enhancement justification.³⁴⁸

The development of artificial reefs is often dependent on the donation of materials for reef construction. Costs to donors are largely offset by tax benefits for charitable donations, and donation of reef materials involves lower disposal costs and provides public relations benefits. However, unresolved questions concerning future legal liability had previously discouraged such donations. The National Fishing Enhancement Act of 1984 provides that a person who transfers title to materials which meet the requirements of the National Artificial Reef Plan and are not otherwise defective when conveyed is not liable for damages arising from the use of the materials in an artificial reef. The person or entity that is issued a federal permit for construction of the reef—usually the state or a local government—is liable for damages, except those caused by activities undertaken to meet permit conditions.³⁴⁹

The South Atlantic Fisheries Management Council has attempted to optimize the use of artificial reefs by providing for Special Management Zones around artificial reefs in its Snapper-Grouper Fishery Management Plan. Persons holding a Corps of Engineers permit for an artificial reef may request the Council to prohibit the use of spe-

347. *Id.* See also Stone, *supra* note 343, at 106.

348. Stone, *supra* note 343, at 106.

349. See 33 U.S.C. § 2104 (Supp. V 1987).

cific gears that offer exceptional advantage and are not compatible with the purpose of the reef.³⁵⁰

3. *The Florida Artificial Reef Program*

The Florida Legislature established the Florida Artificial Reef Program in 1981 to provide grants to local governments for the establishment of artificial reefs.³⁵¹ Local governments can apply for up to \$30,000 for a reef project. Rules to implement the program are entitled *The Comprehensive Artificial Fishing Reef Program Control Code*³⁵² and provide the criteria, priorities, and standards for project evaluation in allocating state funds. The title is misleading, however, because the rules are not comprehensive, and they control only the allocation of state funds for reef building.

All applications by local governments and other reef developers for the lease of submerged lands for construction of artificial reefs are reviewed by the Division of Marine Resources within DNR, whether the state contributes funds or not. The Division evaluates the public benefit from the use of submerged lands and encourages the use of inert materials which will not affect water quality or otherwise negatively influence the environment. Except for state-funded projects, however, the Division has no specific standards for evaluating the siting, construction, and management of artificial reefs.³⁵³

Funding to coastal states for marine programs, including reef projects, has been made available through Wallop-Breaux federal grants. In the fiscal year 1987-1988, DNR received approximately \$300,000 in federal Wallop-Breaux funds to develop reefs in conjunction with local governments. The federal legislation requires the state to provide a one dollar match for every three dollars it requests in federal funds.³⁵⁴

4. *Permitting*

At the federal level, permits for the construction of artificial reefs must be obtained from the Army Corps of Engineers.³⁵⁵ The National Fishing Enhancement Act of 1984 requires that these permits desig-

350. Waugh, *Applications for Special Management Zones Around Artificial Reefs*, in FLORIDA ARTIFICIAL REEF SUMMIT 26-28 (Sea Grant Report No. 93, 1988).

351. See FLA. STAT. § 370.25 (1989).

352. FLA. ADMIN. CODE ANN. ch. 16R-9 (1987).

353. See *id.*

354. Telephone interview with Ed Joyce, Fla. Dep't of Natural Resources (July 12, 1988).

355. See generally Adams, *Federal Artificial Reef Permitting Requirements: U.S. Army Corps of Engineers Criteria*, in FLORIDA ARTIFICIAL REEF SUMMIT 16-17 (Sea Grant Report No. 93, 1988).

nate the siting, construction, and types of materials to be used, based on the National Artificial Reef Plan, and must also include provision for subsequent management and monitoring of the reef. The Corps must consult with affected or concerned state and local agencies in its permitting process.³⁵⁶ Section 2106 of the Act provides that states have ultimate control over the regulation of siting and construction of artificial reefs within their boundaries.

A permit from the Coast Guard is also necessary for marking the location of an artificial reef. The Eighth Coast Guard District, which includes the Florida Panhandle, has promulgated specific requirements for marking reefs. The Seventh District, which comprises the rest of the state, determines marking requirements on a case-by-case basis.³⁵⁷

The Department of Environmental Regulation (DER) has authority for permitting the construction of artificial reefs in state waters under section 403.814(1) of the Florida Statutes and rule 17-312.807 of the Florida Administrative Code. A general permit will be granted to any person to construct an artificial reef using certain specified materials which will not harm the environment.³⁵⁸ Criteria used to analyze the effect of the proposed project include the determination of materials to be used, along with the method of anchoring the materials, and assurances that navigation will not be impeded. The applicant must provide DER with a bathymetric survey "demonstrating that the bottom does not have grassbeds, or hardbottom or other corals."³⁵⁹ No reefs may be "constructed in shallow bay or estuarine bottoms" and no "whitegoods," asphalt material, tires or other pollutant materials [may be] used in construction of the reef."³⁶⁰ These general permits are also subject to the conditions in rule 17-4.530 of the Florida Administrative Code, which establishes procedures for obtaining a general permit.

At times, artificial reefs permitted by the Corps have been in conflict with the state's policies. The state is concerned that the effects of potentially harmful reef materials, construction of reefs on environmentally sensitive areas such as grassbeds, corals, and spongebeds,

356. See 33 U.S.C. § 2104 (Supp. V 1987).

357. See generally Von Protz, *Federal Artificial Reef Permitting Requirements: U.S. Coast Guard Criteria*, in *FLORIDA ARTIFICIAL REEF SUMMIT* 18-21 (Sea Grant Report No. 93, 1988).

358. Permits for reefs using other materials must go through regular procedures for depositing fill materials in state waters. See generally O'Donnell, *Florida Artificial Reef Permitting Requirements: Department of Environmental Regulation*, in *FLORIDA ARTIFICIAL REEF SUMMIT* 22-23 (Sea Grant Report No. 93, 1988).

359. FLA. ADMIN. CODE ANN. r. 17-312.807(2)(a) (1989).

360. *Id.* r. 17-312.807(2)(b)-(c).

and careless construction methods may not be adequately addressed in the Corps' permitting review. Although the State of Florida has jurisdiction over the construction of reefs in state waters, hazardous projects in federal waters adjacent to state waters have a potentially harmful effect on resources of the state. More effective consultation procedures are needed to assure that state concerns are reflected in the federal permitting process as required by the National Fishing Enhancement Act of 1984³⁶¹ and the Coastal Zone Management Act.³⁶²

E. Aquaculture

1. Background

Aquaculture involves the controlled cultivation of fish, shellfish, and plants in fresh, brackish, or saltwater. It is a relatively underdeveloped industry in the United States compared to the rest of the world. Interest in aquaculture has increased, however, as certain fisheries have become depleted and as new markets for aquaculture products have developed.³⁶³

Florida's aquaculture industry has some unusual products. In addition to catfish, which are raised commercially worldwide, Florida also boasts alligator farms. Saltwater aquaculture yields the expected products—oysters and clams—but these contribute a very small percentage of the total sale value of aquaculture products. Tropical fish dominate Florida's aquaculture industry.³⁶⁴ In 1987, sales of Florida-produced tropical and ornamental fish reached \$21.7 million, with an additional \$6.9 million in sales of tropical fish imported for resale. Aquatic plants had the second highest net sales.³⁶⁵

Much of Florida's aquaculture does not take place in the ocean. Tropical fish production, fish and shrimp hatcheries, and aquatic plant farms are actually shore-based industries. Some of these industries use saltwater and discharge into the ocean, but they technically do not use ocean space, do not contribute species to the ocean environment, and do not compete with other ocean users. The main problems encountered by certain onshore aquaculture facilities are

361. 33 U.S.C. §§ 2101-2106 (Supp. V 1987).

362. 16 U.S.C. §§ 1451-1464 (1988).

363. See Cato, *supra* note 306, at 29-31.

364. Tropical plants and fish, however, are almost exclusively grown or propagated in fresh water. Florida's only marine tropical fish operation is forty miles from the ocean and does not discharge into the ocean. Telephone interview with Mike Ednoff, Fla. Dep't of Agric. (Aug. 20, 1988).

365. Florida Dep't of Agric., *Florida Agriculture* 1 (May 1988) (newsletter).

competition with coastal development for sites; the current DER permitting system, which treats discharges from aquaculture operations as industrial discharges; and dredge and fill regulations.³⁶⁶

Hatcheries are also onshore facilities. A state hatchery is currently located at Port Manatee producing red drum fish.³⁶⁷ Marine hatcheries are also located at the University of Miami, Mote Marine Laboratory, and at the Harbor Branch Oceanographic Institution. These facilities, however, are not considered part of the aquaculture industry because they are noncommercial and their purpose is to study the feasibility of enhancing fishery resources. Such hatcheries may aid in the restoration of species and complement other fisheries research, but they are not a panacea. The release of juvenile fish will not help stocks if the habitat for protection and development of the young fish has not been preserved.³⁶⁸

Nearshore aquaculture is limited primarily to clam and oyster production. State-owned submerged lands designated as approved shellfish waters by DNR provide clean waters to relay and microbiologically purify oysters and clams from polluted waters. State lands are also used to create new oyster reefs by placing cultch on the substrate. Commonly used cultch materials include oyster, clam, and scallop shells.³⁶⁹

New technologies for oyster and clam culture involve the use of trays and racks in shallow waters. The Harbor Branch Oceanographic Institution is actively involved in the development of technologies and in the production of seed for oyster and clam aquaculture projects. Although only twenty-eight oyster and clam growers sold products in 1987, it is estimated that sixty-two oyster growers and seventy-four clam growers will contribute to the production of clams and oysters during 1988.³⁷⁰

2. *Aquaculture Development and Regulation*

In 1984, the Florida Legislature enacted the Florida Aquaculture Policy Act³⁷¹ for the purpose of enhancing the growth of aquaculture while protecting the environment. The Department of Agriculture and Consumer Services (DACS) was given the responsibility to coordinate

366. Telephone interview with Mike Ednoff, *supra* note 364.

367. DNR also plans to use the hatchery for snook and spotted seatrout in the future.

368. Telephone interview with Ed Joyce, *supra* note 354.

369. *Id.*

370. *Florida Agriculture*, *supra* note 365, at 1, 3.

371. FLA. STAT. ch. 597 (1989).

research and development and to provide development and permitting assistance to persons in the aquaculture industry.³⁷²

Aquaculture development in the state has several components:

1) The Aquaculture Review Council (ARC) is a nine-member council which includes representatives of different sectors of the aquaculture industry. The ARC studies aquacultural issues in order to formulate recommendations to the Commissioner of Agriculture for rules and policies to assist the aquaculture industry and to implement the state aquaculture plan.³⁷³

2) The Aquaculture Interagency Coordinating Council (AICC) is an advisory body composed of the heads of eight state agencies and representatives of a statewide consortium of universities, the Institute of Food and Agricultural Services at the University of Florida, the Florida Sea Grant Program, the regional planning councils, and the water management districts. The AICC is charged with fostering interagency cooperation in aquaculture development activities and with formulating solutions and policies to facilitate aquaculture development.³⁷⁴

3) Memoranda of Agreement have been developed between the Florida Sea Grant Program, DNR, and the Game and Fresh Water Fish Commission to facilitate aquaculture activities.

4) The Florida Aquaculture Plan (FAP) was written by the ARC, in cooperation with DACS and the AICC, and is considered the blueprint for developing aquaculture in the state. It is intended that the FAP policies be integrated into regional and local planning.

5) DER issues permits for onshore aquaculture operations as pollutant dischargers and permits operations on submerged lands under its dredge and fill jurisdiction.

All aquaculture activities on state-owned submerged land below the mean high water mark (for saltwater) or the ordinary high water mark (for freshwater) must have a lease from the Board of Trustees of the Internal Improvement Trust Fund pursuant to chapter 253 of the Florida Statutes.³⁷⁵ Because private, exclusionary uses of state submerged lands are generally discouraged, aquaculture leases are only issued upon careful review and upon conditions that protect the public interest. An amendment to section 258.42(1) of the Florida Statutes in

372. *Id.* § 597.003.

373. *Id.* § 597.005.

374. *Id.* § 597.006.

375. Previously, there were two provisions for leasing state submerged lands for aquaculture. Section 370.16 applied specifically to oyster and clam cultivation, while chapter 253 applied to aquaculture generally.

1988 provided that in aquatic preserves, aquaculture is presumed to be in the public interest.

Rule 18-21.004(2)(l) of the Florida Administrative Code provides that the state's policy is to foster aquaculture when it is "consistent with state resource management goals, proprietary interest, environmental protection and antidegradation goals." Oyster and clam leases are not allowed in areas that would preempt public access to "significant harvestable resources" or within state parks.³⁷⁶ Leases within an aquatic preserve must be consistent with the preserve's management plan.³⁷⁷ The rule also contains provisions to assure that leases will not unreasonably interfere with rights of riparian owners.³⁷⁸

Although potential lease areas may be designated by DNR, areas are generally nominated by aquaculturists. Leases may be for no more than ten acres for oysters and five acres for clams.³⁷⁹ The lease term is for no more than ten years.³⁸⁰ There is a minimum fee of \$15 per acre or \$30 per acre if the lease includes the water column.³⁸¹ Leases are transferable with written permission of the Board of Trustees.³⁸² Failure to perform aquaculture activities may result in cancellation of the lease and forfeiture to the state of all improvements in and on the parcel.³⁸³

Under earlier legislation, oyster and clams leases were perpetual and transferable. One hundred and thirteen of these leases still exist. Another forty-eight leases under chapter 370 are for ten-year terms with the right of first refusal to renew. A few of these leases are quite large, and all of the lease fees are far below the current minimum rental fee. An attempt to require conversion of these leases to chapter 253 aquaculture leases was blocked by rule challenge.³⁸⁴ Figure 1 summarizes and compares leases under chapter 253 and 370.

376. FLA. ADMIN. CODE ANN. r. 18-21.004(2)(l)(8)(i) (1987).

377. *Id.* r. 18-21.004(2)(l)(8)(g).

378. *Id.* r. 18-21.004(2)(l)(8)(a).

379. *Id.* r. 18-21.004(2)(l)(8)(e).

380. *Id.* r. 18-21.008(2)(f)(l).

381. *Id.* r. 18-21.011(4)(b)(4).

382. *Id.* r. 18-21.008(2)(f)(4).

383. *Id.* r. 18-21.008(2)(g).

384. See DEP'T OF NATURAL RESOURCES, REPORT TO THE GOVERNOR AND CABINET ON SHELL-FISH LEASES (July 25, 1988).

FIGURE 1. COMPARISON OF CONDITIONS OF CHAPTER 370, SHELLFISH LEASES, AND CHAPTER 253, AQUACULTURAL LEASES³⁸⁵

Lease Term	Perpetuity ^a	10 years
Lease Fees		
Base Fees	\$5/acre/year	\$15/acre/year (bottom) \$30/acre/year (column)
Royalties	None	Oyster Culture: ^b \$0.50/60-pound bag Clam Culture: \$1/250-count container
Min. Prod. Requirements	None	Oyster Culture: 120 bags/acre/year Clam Culture: 50,000 clams/acre/year
Cultivation Requirements	Year 2-25% Year 3-50% Year 4-75% Year 5-100%	Minimum Production Requirements
Transferability	Transferable ^c	Transferable ^d
Acreage	Unlimited	Maximum Acreage: ^e Oyster: 10 Acres Clams: 5 acres
Setback Requirements	None	Riparian: 25 feet from adjacent riparian rights lines Nonriparian: 100 feet offshore from mean or ordinary high water line
Experimental Lease	Not Available	Fees may be waived ^f

^a Shellfish leases issued after January 1, 1981, are for a ten-year term with right of first refusal to renew (48 leases).

^b Based on annual production during years six through ten.

^c With approval of the Department of Natural Resources.

^d With approval of the Board of Trustees of the Internal Improvement Trust Fund.

^e Larger areas may be leased if the applicant can demonstrate the ability to develop larger acreage.

^f Lessee must be a noncommercial research institution.

F. Issues and Recommendations

Issue: Representation in fishery management and policymaking. Fisheries policy and regulation are driven at both the federal and state

385. BUREAU OF STATE LANDS MANAGEMENT, FLA. DEP'T OF NATURAL RESOURCES, SUMMARY OF SHELLFISH AND AQUACULTURE LEASE ISSUES AND RECOMMENDATIONS 12 (n.d.).

levels by bodies intended to represent a broad variety of interests, including management, conservation, consumers, recreational fishing, and commercial fishing. To a large extent, many conflicts, such as those concerning management techniques and stock allocations, can be alleviated if the policymaking body *is* well-balanced and representative, and if it bases decisions on the best scientific evidence available.

A second side of the representation issue involves Florida's participation on the South Atlantic and Gulf Fishery Management Councils. Florida's representation on each fishery management council—three voting members—is grossly out of proportion to the state's fishery conservation zone and to its level of fishing.³⁸⁶ This disproportionate level of representation has been particularly detrimental in the Gulf of Mexico Fishery Management Council, where federal plans have generally not been geared to or been responsive to Florida's fisheries management problems. In general, Gulf fishery plans are driven by shrimp and menhaden management philosophy. Florida managers assert that those species are not as sensitive to overharvesting as Florida's finfish—snapper, grouper, mackerel—and the state's unique fisheries like lobster and stone crab, which require “sound, conservative management.”³⁸⁷ Management issues for these species are often not appropriately addressed at the regional level.

Recommendations: The Governor should continue to balance interests at both the state and regional levels. In order for the MFC to meet its mandate, the commission must be truly representative of the groups it is regulating or affecting, and appointments should continue to consider the broad variety of affected interests in the state. The Governor should also attempt to gain additional at-large seats on the regional councils so that the state's management needs will be more adequately addressed at the regional level. Additional appointments to the re-

386. In a report to the Governor and Cabinet, the Marine Fisheries Commission staff explained:

By most measures, Florida should have more Council appointments, especially when considering length of coastline, the resident and tourist population in the Coastal Zone, and total fishery production. As an example, Florida has roughly 50% of the South Atlantic coastline and 40% of the Gulf's. We also have the largest coastal population. We are the primary harvesters of lobster, stone crab, king mackerel, Spanish mackerel, grouper and snapper. When shrimp and menhaden are excluded, we accounted for 75% of Gulf commercial production and 50% of the South Atlantic production. In 1985 (the most recent data available), we accounted for 63% of all recreational fishing trips in the South Atlantic and 55% of those in the Gulf.

MARINE FISHERIES COMMISSION STAFF, A REPORT TO THE GOVERNOR AND CABINET: FLORIDA'S ROLE IN FEDERAL FISHERIES MANAGEMENT 3 (Sept. 1988).

387. *Id.*

gional councils should be sensitive to a representative balance in interest group participation.

Issue: Information, research, staffing, and funding of the MFC. Although each of these points represent independent issues, they are inextricably interrelated. The MFC is extremely understaffed considering the scope of its job. More professional staff is needed if the MFC is to carry out its legislative mandate to deal *comprehensively* with the state's fishery management needs. The MFC also needs more information to make its management decisions, including not only scientific research on fishery stocks, but also social science research on the impacts of fishery regulation and reliable information on the number of fishermen and their landings. Ironically, DNR was recently criticized in an Auditor General's Report for dedicating too much of its research to "fish."³⁸⁸ Yet, this information is critical for MFC decision-making. If DNR is to provide adequate support for the MFC, more research funds and staff, including social scientists, must be allocated to DNR.

Recommendation: Saltwater sportfishing licenses are viewed as the solution to many of the problems surrounding saltwater fisheries management. The licenses will provide important information about the "human side" of Florida's fisheries, and the funds generated can be used for staffing, research, and fisheries enhancement.

Note: In 1989, the Florida Legislature enacted a requirement for saltwater, recreational fishing licenses. See FLA. STAT. § 370.0605 (1989). The legislation also requires DNR to establish "a marine information system in conjunction with the licensing program to gather marine fisheries data." Id. § 370.0607. The funds generated by the saltwater license fees will be used for fisheries administration and enforcement, marine research, fisheries enhancement, and environmental education programs. See id. § 370.0608.

Issue: Controversial artificial reefs. The construction of artificial reefs has created a continuing controversy among scientists and recreational and commercial fishermen. Artificial reef programs are established for the purpose of enhancing the diversity and population of fishery resources. A recent study by biologists at the Florida Institute of Technology has provided some evidence that the artificial reefs do ac-

388. See OFFICE OF THE AUDITOR GENERAL, STATE OF FLORIDA, PERFORMANCE AUDIT OF THE STATE'S MARINE RESEARCH PROGRAM ADMINISTERED BY THE DEP'T OF NATURAL RESOURCES vii (Report No. 11002, Mar. 22, 1988).

tually increase the total biomass of fish by providing shelter for fish larvae and offering protection from predators, thereby raising the larvae survival rate. However, a management strategy cannot be based on a single piece of preliminary research. More research is necessary to determine overall effects of artificial reefs on fishery resources and to determine the optimum structure and materials to be used in constructing the reefs.

Local governments and recreational fishermen have strongly supported construction of artificial reefs. The recreational benefit of increased fishing opportunities translates into dollars for local governments from sport fishermen and tourists. And although disposal of solid wastes should not be a justification for artificial reefs, reef construction does provide a disposal option in some limited circumstances.

The Organized Fishermen of Florida, representing commercial fishing interests, has expressed concern about several aspects of artificial reef siting, construction, and management:

- 1) Uncontrolled, unpermitted dumping by fishing enthusiasts has a negative effect on fishery resources and water quality;
- 2) Overharvesting of concentrated fish populations may contribute to stock depletion;
- 3) Improperly sited artificial reefs may have adverse impacts on existing natural reefs and fisheries habitat; and
- 4) Conflicts arise when artificial reefs encroach on commercial fishermen's access or use of traditional productive fishing grounds.³⁸⁹

Recommendation: A truly comprehensive state artificial reef program should be established to coordinate research and to establish criteria for siting, materials, construction, management, and monitoring of artificial reefs. This may be accomplished through a centralized authority at the state level, or by the establishment of mandatory state guidelines that would be implemented by local artificial reef-siting committees.³⁹⁰ In either case, consultation with local sport and com-

389. Telephone interview with Cynthia Rhodes, Public Relations Coordinator with Organized Fishermen of Florida (July 29, 1988).

390. Many counties and local governments already have programs to advise on the siting and use of artificial reefs in their regions. Brevard County, for example, has the Artificial Reef Advisory Committee, which advises any entity that wants to construct a reef in the county's coastal waters. The Committee advocates controlled siting and construction of reefs. Brevard County works closely with "the Florida Sport Fishing Association (FSFA), the Florida Sea Grant Program, the U.S. Army Corps of Engineers, and other state environmental agencies to conduct site reviews and obtain permits and funding for artificial reefs offshore from Brevard." OFFICE OF NATURAL RESOURCES MANAGEMENT, BREVARD COUNTY BOARD OF COUNTY COMMISSIONERS, BREVARD COUNTY ARTIFICIAL REEF PLAN, ch. 1 (July 13, 1988) (draft).

mercial fishermen must be a key element to assure accessibility to sport fishermen and to avoid conflict with traditional commercial fishing.

Participants in the Florida Artificial Reef Summit emphasized many of these recommendations by concluding:

- 1) Florida needs a statewide artificial reef plan that addresses all Florida aquatic habitats and local user needs.
- 2) Florida should have an expanded state artificial reef program that would assist county level reef-building programs in implementing the statewide plan through administration of funds, resources, and guidance.
- 3) Florida needs a centralized permitting system which utilizes uniform criteria for review of all permits (state and federal), trains staff on artificial reef minimum standards, and establishes stiffer enforcement procedures.
- 4) Florida should require state and local reef-building programs to set management goals prior to reef construction and to establish monitoring and maintenance procedures and criteria.
- 5) Florida needs a statewide association, or network, of artificial reef interests to establish better communication between government agencies and local programs and among local programs statewide.³⁹¹

Issue: Artificial reefs as mitigation. Under Florida's Warren S. Henderson Wetlands Protection Act of 1984,³⁹² mitigation measures proposed by a permit applicant must be considered in evaluating a dredge or fill permit for altering wetlands.³⁹³ Because the destruction of fisheries habitat is an issue in permit evaluation, a proposal to provide new or enhanced fisheries habitat could be proposed as a mitigative action. However, since the fisheries benefits of offshore benthic habitat and coastal wetlands are very different and not interchangeable, artificial reefs should not be considered as mitigation for wetlands destruction.

Issue: Oyster and clam marine aquaculture on submerged sovereignty lands. The harvest of shellfish has been declining in recent years due to storms, low freshwater flows, and overworked natural reefs. Aquaculture is viewed by its proponents as a means to rehabilitate the shellfish industry. These proponents believe it is the role of the state to create an economic and regulatory environment that will make shellfish culture a reasonable business investment.

391. FLORIDA ARTIFICIAL REEF SUMMIT iii (Sea Grant Report No. 93, 1988).

392. FLA. STAT. §§ 403.91-.929 (1989).

393. *Id.* § 403.918(2)(b).

Recent conflict in Apalachicola Bay concerning use of mechanical harvesters to harvest oysters on private leases has led the Governor and Cabinet to reconsider its policy on leasing submerged lands for aquaculture and to reevaluate the public interest in private shellfish aquaculture.

Recommendations: At a workshop held on October 12, 1988, DNR made the following recommendations to the Governor and Cabinet:

- 1) Adjust chapter 370 lease fees to provide parity with chapter 253 fees.
- 2) Encourage voluntary conversion of chapter 370 shellfish leases to chapter 253 aquaculture leases.
- 3) Cancel uncultivated leases.
- 4) Expand the aquaculture program.
- 5) Establish an aquaculture demonstration project.
- 6) Continue maintenance by DNR of public oyster reefs.
- 7) Allow strictly regulated mechanical oyster harvesting on private leases.³⁹⁴

Note: Current law requires a license for harvesting oysters in Apalachicola Bay and imposes a fifty cents per bag surcharge on wholesale dealers receiving or selling Apalachicola oysters. FLA. STAT. § 370.06(5) (1989). License fees and surcharges are to be deposited in the Apalachicola Bay Conservation Trust Fund to be dedicated to oyster rehabilitation and other programs for the conservation of the Bay. *Id.* § 370.16(15). Future oyster leases in Franklin County are limited to nontransferable oyster culture leases of one acre or less, and mechanical oyster harvesting devices are prohibited in the county. *Id.* § 370.16(9). The use of mechanical harvesting devices is strictly regulated in other areas of the state. *Id.* § 370.16(16)(b).

Issue: Effects of upland development and freshwater resource management on fisheries habitats. Florida's fisheries habitats seem to be particularly sensitive to activities landward of the mean high water line. Mangrove swamps, seagrass beds, and estuaries continue to be destroyed by filling, siltation, and pollution. Freshwater resource management strategies do not adequately take into account the effects of low levels of freshwater on estuaries as fisheries habitats. If habitats are not properly protected, fisheries management plans, restoration programs, and attempts to revitalize declining fisheries through

394. FLORIDA DEP'T OF NATURAL RESOURCES, GOVERNOR AND CABINET WORKSHOP 4-5 (Oct. 12, 1988).

development programs will be wasted efforts.

Recommendation: Many mechanisms exist for coordination and consultation among agencies to protect habitat and marine species, including DER's permitting processes and review of developments of regional impact.³⁹⁵ DNR must have adequate staff and resources to use these mechanisms effectively.

IX. MARINE POLLUTION

A. *Pollution Control Generally*

Florida's estuaries, territorial waters, and open seas are used extensively for waste disposal. Point source discharges of industrial and municipal effluents flow from pipes to the marine environment. Non-point sources—runoff from urban areas, agriculture, mining, and industrial and construction sites—further contribute to the pollution of the nearshore. Ocean dumping may include the disposal of sewage sludge, industrial wastes, and dredged materials in designated offshore sites. Oil and other hazardous materials may enter the ocean by intentional or accidental discharges from vessels or oil platforms. Vessels and oil platforms also contribute to the problem of persistent marine debris from the disposal of plastics and nonbiodegradable solid wastes at sea.³⁹⁶

Regulation of ocean pollution in Florida is a task undertaken by both federal and state agencies. On the federal level, the Environmental Protection Agency (EPA) is primarily responsible for implementing and monitoring those provisions of the Clean Water Act³⁹⁷ which regulate the quality of the nation's waters. Incidental to the federal navigation servitude, the United States Army Corps of Engineers (Corps) is responsible for conducting and permitting dredging projects designed to enhance the navigability of the nation's waters. The Corps is also authorized to permit dredge and fill activities under the Clean Water Act and ocean dumping under the Marine Protection, Research, and Sanctuaries Act of 1972 (MPRSA).³⁹⁸ MPRSA assigns EPA the responsibility to designate ocean disposal sites and to issue permits for the disposal of wastes other than dredged material. At the

395. See *supra* section VIIA of this article (discussing Florida aquatic preserves).

396. See generally OFFICE OF TECHNOLOGY ASSESSMENT, UNITED STATES CONGRESS, WASTES IN MARINE ENVIRONMENTS 57-77 (1987).

397. Federal Water Pollution Control (Clean Water) Act, 33 U.S.C. §§ 1251-1387 (1982 & Supp. V 1987).

398. 33 U.S.C. §§ 1401-1445 (1982 & Supp. V 1987) and 16 U.S.C. §§ 1431-1434 (1988).

state level, the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees) and the Department of Natural Resources (DNR) administer policies dealing with pollution as it relates to resource rights. The Department of Environmental Regulation (DER) regulates the water-quality aspects of ocean pollution and implements state dredge and fill law.

1. The Clean Water Act Framework

The Clean Water Act, as it developed over a number of decades and through numerous amendments, creates a dual regulation system for the protection of waters. The Act first set standards and guidelines for states to establish water-use categories and water-quality standards for those categories. Each state has the responsibility to maintain water quality within its designated parameters. Because this system was not entirely successful and because water quality across the country continued to deteriorate under this plan, Congress created an additional nationwide permitting system to implement uniform national pollution standards for effluent discharges from point sources. Rather than being focused on the site-specific issue of the quality of a certain waterbody, the federal effluent limitations were based on the extent of the technological capability of removing pollutants from discharges.³⁹⁹

Section 1251 of the Clean Water Act describes the Act's objectives of eliminating pollutant discharges, encouraging and financing publicly-owned treatment works (POTW's) and area-wide waste treatment, and controlling nonpoint sources of pollution. The declaration of policy also addresses interaction between federal and state regulation:

It is the policy of the Congress to recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution, to plan the development and use (including restoration, preservation, and enhancement) of land and water resources, and to consult with the Administrator in the exercise of his authority under this chapter. . . . It is further the policy of the Congress to support and aid research relating to the prevention, reduction, and elimination of pollution and to provide Federal technical services and financial aid to State and interstate agencies and municipalities in connection with the prevention, reduction, and elimination of pollution.⁴⁰⁰

399. See 33 U.S.C. §§ 1311-1330 (1982 & Supp. V 1987).

400. *Id.* § 1251(b) (1982).

The primary mechanism for implementing congressional goals and policy is a requirement that every point source of pollution be permitted under the National Pollutant Discharge Elimination System (NPDES) outlined in section 1342 of the Clean Water Act. State water-quality certification under section 1341 is also required of all applicants for federal licenses or permits in order to conduct an activity which may result in any discharge into state waters. States may administer their own NPDES permit programs upon approval of the states' program by the EPA Administrator.⁴⁰¹

At this time, federal NPDES permitting within Florida is carried out by Region IV of the EPA. Under the NPDES permitting system, Region IV has the authority to regulate the discharge of numerous kinds of pollutants. "Pollutants" falling under the NPDES regulatory system include "dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials,⁴⁰² heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water."⁴⁰³

The jurisdiction of Region IV also includes designating, monitoring, and managing thirty dredged-material disposal sites, representing approximately twenty-five percent of the national total. Although Congress is only now considering legislation to ban all ocean dumping of sewage sludge by 1992, Region IV has already committed to a policy prohibiting the dumping of sludge or industrial waste in the oceans in the Southeast. The EPA has also not allowed any ocean outfalls in the Gulf of Mexico.

2. *The State Pollution Control Framework*

Article II, section 7, of the Florida Constitution requires abatement of water pollution. Florida's statutory policy regarding state waters is set out in section 403.021 of the Florida Statutes. To summarize, the state's policy is to conserve waters and to protect, maintain, and improve water quality. For those purposes, sources of water pollution must be controlled, regulated, and abated.

Florida has established its own water-quality standards and permitting requirements for sources of pollution,⁴⁰⁴ but does not administer

401. *See id.* § 1342 (1982 & Supp. V 1987).

402. The term "pollutants" does not encompass radioactive materials regulated under the Atomic Energy Act of 1954, 42 U.S.C. §§ 2011-2296 (1982 & Supp. V 1987).

403. 40 C.F.R. § 122.2 (1989).

404. *See* FLA. STAT. §§ 403.011-.4153 (1989).

its own approved NPDES permit program.⁴⁰⁵ In 1988, the Florida Legislature passed a bill authorizing DER to establish a federally approved state NPDES program.⁴⁰⁶ Delegation of an NPDES program to the State of Florida could change dramatically the regulation of pollution within the state. Although state operation of an NPDES program would streamline regulation by eliminating the need for dischargers to obtain two permits, economic infeasibility currently precludes implementation of the program.

For the purpose of establishing water-quality standards, all of the surface waters of the state have been classified according to designated uses as follows:

Class I	Potable Water Supplies
Class II	Shellfish Propagation/Harvesting
Class III	Recreation, Fish and Wildlife
Class IV	Agricultural Water Supplies
Class V	Navigation, Utility and Industrial Use

These water-quality classifications are arranged in order of the degree of protection required, with Class I water having the most stringent water-quality criteria and Class V the least.⁴⁰⁷ A water body may also be designated as an Outstanding Florida Water (OFW) in addition to its above classification. DER's policy is to afford "the highest protection" to OFW's and in general not to allow significant degradation of existing water quality.⁴⁰⁸ DER's permitting system requires the applicant to provide reasonable assurances that the discharge will meet water-quality standards.

B. Ocean Outfalls

Federal regulation of ocean outfalls is the responsibility of the EPA under section 1343 of the Clean Water Act.⁴⁰⁹ No NPDES permit for discharge into the territorial sea, the waters of the contiguous zone, or

405. Florida's regulatory standards differ from those of the NPDES. The federal system limits the amount of pollutant discharged by a source based on technology standards for that industry. Receiving-water quality generally is not relevant. Florida's limitations, on the other hand, are based on receiving-water quality.

406. See ch. 88-393, §§ 22-23, 1988 Fla. Laws 2224, 2242-43 (codified at FLA. STAT. §§ 403.061, 403.0885 (1989)).

407. The specific water-quality criteria corresponding to each surface water classification are listed in rules 17-3.091 to 17-3.141 of the Florida Administrative Code.

408. See FLA. ADMIN. CODE ANN. r. 17-3.041(9) (1989). See also FLA. STAT. § 403.061(27)(a) (1989).

409. 33 U.S.C. § 1343 (1982).

the oceans may be issued except in compliance with section 1343 guidelines established by the EPA Administrator.⁴¹⁰ State water-quality certification or waiver of such certification is required for each permit.⁴¹¹

Under section 1343(c), the EPA Administrator has promulgated guidelines for determining the permissible degree of degradation of marine waters by ocean outfalls. Permits may be issued only when in compliance with the guidelines, which include consideration of the following:

- (A) the effect of disposal of pollutants on human health or welfare, including but not limited to plankton, fish, shellfish, wildlife, shorelines, and beaches;
- (B) the effect of disposal of pollutants on marine life including the transfer, concentration, and dispersal of pollutants or their by-products through biological, physical, and chemical processes; changes in marine ecosystem diversity, productivity, and stability; and species and community population changes;
- (C) the effect of disposal, of pollutants on esthetic, recreation, and economic values;
- (D) the persistence and permanence of the effects of disposal of pollutants;
- (E) the effect of the disposal at varying rates, of particular volumes and concentrations of pollutants;
- (F) other possible locations and methods of disposal or recycling of pollutants including land-based alternatives; and
- (G) the effect on alternate uses of the oceans, such as mineral exploitation and scientific study.⁴¹²

The EPA may issue an NPDES permit if it determines that the discharge will not cause unreasonable degradation of the marine environment after the application of any necessary conditions.⁴¹³

To obtain a permit issued under sections 1342 and 1343 of the Clean Water Act, a sewage treatment plant discharging effluents through ocean outfalls must achieve secondary treatment effluent limitations as defined by the EPA. An applicant must also meet any more stringent limitations under federal or state laws and regulations, including those necessary to meet water-quality standards.⁴¹⁴ With the concurrence of the state, the EPA may issue a permit which modifies

410. *Id.*

411. *Id.* § 1342(d).

412. *Id.* § 1343(c)(1)(A)-(G).

413. *See* 40 C.F.R. § 125.122 (1989).

414. 33 U.S.C. § 1311(b)(1) (1982).

the secondary treatment requirements regarding a pollutant discharge from a POTW into marine waters, if certain criteria are met.⁴¹⁵ Region IV of the EPA, however, has not granted any waivers based on this authority.

Florida's DER has adopted rules for permitting ocean outfalls. Rule 17-4.244(3)(c) of the Florida Administrative Code provides:

For open ocean discharges, the effluent when diluted to 30% full strength, shall not cause more than 50% mortality in 96 hours . . . in a species significant to the indigenous aquatic community. Rapid dilution shall be ensured by the use of multiport diffusers. The discharge shall otherwise comply with federal law.

In addition to meeting the above toxicity and diffuser requirements, outfalls must meet Florida's water-quality criteria.

Seven ocean outfalls are currently located off the coast of Florida. Figure 2 describes their location and output.

FIGURE 2. OCEAN OUTFALLS IN FLORIDA⁴¹⁶

<u>Location</u>	<u>Distance Offshore (Ft.)</u>	<u>Outfall Depth (Ft.)</u>	<u>Discharge (millions of gallons/day)</u>
Key West	3,645	33	4
Virginia Key/Miami	18,835	90	143
North District/Miami	11,000	100	85
Hollywood	10,000	110	33
Broward County	6,600	95	57
Boca Raton	5,000	90	10
West Palm Beach	5,200	100	12

With the exception of the Key West outfall, all of the effluent from Florida's outfalls have received at least secondary treatment prior to ocean disposal. Until recently, Key West piped untreated sewage into the ocean while awaiting completion of its new sewage treatment plant. The receiving water for the Key West outfall is classified as Class III coastal water. The area surrounding the outfall is also classified by DER as an OFW.⁴¹⁷ Nevertheless, between September 1984 and August 1985 the average concentration of the Key West

415. See *id.* § 1311(h).

416. R. Smith & D. York, Disposal of Recovered Water in Florida Table 8 (Apr. 7, 1987) (unpublished manuscript).

417. See FLA. ADMIN. CODE ANN. r. 17-3.041(17)(b) (1989).

outfall for biological oxygen demand was approximately three times the allowable level.⁴¹⁸

For years the Key West outfall has been the subject of controversy. The only city on the east coast that dumped raw sewage into the sea, Key West discharged up to 9.5 million gallons per day of untreated waste through a pipe to a ship channel 4,000 feet offshore.⁴¹⁹ The City of Key West entered into an agreement with the EPA in 1986 to complete an operable treatment and disposal plant by December 31, 1987.⁴²⁰ The treatment plant finally became functional in mid-1989, but it continues to have operational problems.

Each of the other five outfalls is operating under a five-year NPDES permit. Several of the permits are under review for renewal. There is currently some debate as to whether NPDES permits for outfalls outside Florida's territorial waters must include compliance with state water-quality criteria. State criteria incorporated in existing NPDES permits, however, will likely be retained. The anti-backsliding provision of the 1987 amendments to the Clean Water Act requires that a permit may not be renewed, reissued, or modified to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.⁴²¹

C. Ocean Dumping

The Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Dumping Convention)⁴²² is the primary international agreement dealing with marine disposal of wastes. The London Dumping Convention defines ocean "dumping" as "(i) any deliberate disposal at sea of wastes or other matter from vessels, aircraft, platforms or other man-made structures at sea; [or] (ii) any deliberate disposal at sea of vessels, aircraft, platforms or other man-made structures at sea."⁴²³ Under the London Dumping Convention, countries ratifying the treaty have agreed to prohibit the dumping of certain "black list" wastes, including mercury, cadmium, organohalogens, oils, persistent plastics, and high-level radioactive wastes.⁴²⁴ Special permits are required for ocean disposal of "gray

418. CITY OF KEY WEST, FLORIDA, WASTEWATER FACILITIES PLAN 5-11 (Jan. 1986).

419. *Id.* at ix.

420. *Id.* at A-16.

421. Water Quality Act of 1987, Pub. L. No. 100-4, § 404(a), 101 Stat. 7, 67-69 (codified at 33 U.S.C. § 1342(a) (Supp. V 1987)).

422. Dec. 29, 1972, 26 U.S.T. 2406, T.I.A.S. No. 8165 (entered into force Aug. 30, 1975).

423. *Id.* art. III, para. 1(a).

424. *See id.* art. IV, para. 1(a) and annex I.

list" materials set out in Annex II of the Convention.⁴²⁵ All other substances require a general permit for ocean disposal.⁴²⁶ The treaty provides general criteria for site designation and permitting.⁴²⁷

In 1972, Congress enacted the Marine Protection, Research, and Sanctuaries Act of 1972 (MPRSA)⁴²⁸ to implement the London Dumping Convention. The first two titles of MPRSA are commonly known as the Ocean Dumping Act.⁴²⁹ The Ocean Dumping Act was enacted "to regulate the dumping of all types of materials into ocean waters."⁴³⁰ It grants to the EPA and the Secretary of the Army the authority to regulate ocean dumping.⁴³¹ The Ocean Dumping Act defines ocean "dumping" broadly as "a disposition of material."⁴³² Material may include solid waste, industrial waste, radioactive waste, sewage sludge, incinerator residue, and dredged materials.⁴³³

As with the Clean Water Act, the Administrator of the EPA is charged with the duty of enforcing the provisions of the Ocean Dumping Act. Under the Ocean Dumping Act, the Administrator may grant permits for ocean dumping of nondredged materials that "will not unreasonably degrade or endanger human health, welfare, or amenities, or the marine environment, ecological systems, or economic potentialities."⁴³⁴ Further, the Administrator designates recommended sites

425. See *id.* art. IV, para. 1(b) and annex II.

426. *Id.* art. IV, para. 1(c).

427. See *id.* art. IV, para. 2 and annex III.

428. Pub. L. No. 92-532, 86 Stat. 1052 (codified as amended at 33 U.S.C. §§ 1401-1445 (1982 & Supp. V 1987) and 16 U.S.C. §§ 1431-1434 (1988)).

429. 33 U.S.C. §§ 1401-1445 (1982 & Supp. V 1987).

430. *Id.* § 1401 (1982).

431. *Id.* § 1412(a). The authority of the Secretary of the Army has since been delegated to the United States Army Corps of Engineers.

432. *Id.* § 1402(f).

433. *Id.* § 1402(c). Exceptions to the broad definition of "material" include the following:

[Dumping] does not mean a disposition of any effluent from any outfall structure to the extent that such disposition is regulated under the provisions of the [Clean Water Act], . . . under the provisions of section 407 of this title, or under the provisions of the Atomic Energy Act of 1954, . . . nor does it mean a routine discharge of effluent incidental to the propulsion of, or operation of motor-driven equipment on, vessels: *Provided, further*, [t]hat it does not mean the construction of any fixed structure or artificial island nor the intentional placement of any device in ocean waters or on or in the submerged land beneath such waters, for a purpose other than disposal, when such construction or such placement is otherwise regulated by Federal or State law or occurs pursuant to an authorized Federal or State program: *And provided further*, [t]hat it does not include the deposit of oyster shells, or other materials when such deposit is made for the purpose of developing, maintaining, or harvesting fisheries resources and is otherwise regulated by Federal or State law or occurs pursuant to an authorized Federal or State program.

Id. § 1402(f) (citations omitted).

434. *Id.* § 1412(a).

and times for ocean dumping after consideration of the criteria established for review of permit applications.⁴³⁵

Currently, fourteen Ocean Dredged Material Disposal Sites have been designated by the EPA off of Florida's coasts. Four of these sites are permanent designations: Pensacola (one nearshore and one deepwater site), Jacksonville, and Fernandina. The other ten sites are interim designations with indefinitely extended expiration dates. The interim sites—with the exception of Key West, which is likely to be cancelled—are undergoing the necessary study for permanent designation. Two additional sites are being studied in preparation for designation proposals.⁴³⁶

Since disposal-site designation was moved from the national to the regional level of the EPA, designation of sites has become a coordinated effort with DER, DNR, and the Governor's Office of Planning and Budgeting. This cooperative effort has avoided the conflict that epitomized the designation process earlier. A potential for legal conflict still exists, however, concerning the issue of whether site designations are subject to the consistency provisions of the Coastal Zone Management Act.⁴³⁷

In contrast to the Clean Water Act authorization of state NPDES programs, section 1416(d) of the Ocean Dumping Act forbids states from adopting or enforcing any rule or regulation relating to any activity regulated by the Act. Florida's statutes do not define "dumping" for purposes of state regulation, but ocean disposal clearly comes within the state's definition of "filling."⁴³⁸ Also, ocean dump-site designations in state waters require consent of the Board of Trustees. Many other provisions in Florida's federally-approved coastal management plan may affect federal regulation of ocean disposal.

In 1986, Congress amended the Ocean Dumping Act by adding subsection (g) to section 1416 of the Act. Arguably, subsection (g) limits the preemptive effect of subsection (d) by declaring:

(g) Nothing in this [Act] shall restrict, affect or modify the rights of any person (1) to seek damages or enforcement of any standard or limitation under State law, including State common law, or (2) to seek damages under other Federal law, including maritime tort law,

435. See *id.* § 1412(c).

436. REGION IV COASTAL PROGRAMS UNIT, U.S. EPA, FISCAL YEAR 1988 MIDYEAR EVALUATION, Attachment A1 (May/June 1988).

437. See 16 U.S.C. §§ 1451-1464 (1988).

438. See FLA. ADMIN. CODE ANN. r. 17-312.020(10) (1988) (defining "filling" as "the deposition, by any means, of materials in waters of the state").

resulting from noncompliance with any requirement . . . or any permit under this [Act].⁴³⁹

Subsection (g) has yet to be interpreted by the courts. Thus, it is unclear whether the phrase "any standard or limitation under State law, including State common law" can be used effectively by states attempting to regulate ocean activities within their boundaries under the authority of federally-approved coastal management programs or other state environmental statutes.

Section 1413 of the Ocean Dumping Act authorizes the Corps of Engineers, whose authority was delegated from the Secretary of the Army, to issue permits for the *dumping of dredged material*. Under section 1344 of the Clean Water Act, the Corps also has the authority to permit the *discharge of dredged materials* into navigable waters.⁴⁴⁰ Since dredged materials, of which up to three percent are considered to be highly contaminated with toxics, constitute over ninety percent of all material dumped in the Nation's ocean waters, section 1413 of the Ocean Dumping Act and section 1344 of the Clean Water Act give the Corps tremendous regulatory authority in the area of ocean pollution.⁴⁴¹

In permit reviews under section 1413 of the Ocean Dumping Act, the Corps is required to consider environmental impact criteria established by the EPA, along with "the potential effect of a permit denial on navigation, economic and industrial development, and foreign and domestic commerce of the United States." The Corps must also consider other methods and sites for disposal, and must, "to the extent feasible, utilize the recommended sites designated by the [EPA]."⁴⁴² While the Corps of Engineers does not administratively issue itself permits for its own disposal operations, federal projects must meet the same standards applied to other permit applicants.

Section 1342 NPDES permits are not required for the discharge of dredged or fill materials regulated under section 1344 of the Clean

439. Superfund Amendments and Reauthorization Act of 1986, Pub. L. No. 99-499, § 127(d), 100 Stat. 1613, 1693 (codified at 33 U.S.C. § 1416(g) (Supp. V 1987)).

440. 33 U.S.C. § 1344 (1982 & Supp. V 1987).

441. In addition to having authority over the disposal of dredged material under the Clean Water Act and the Ocean Dumping Act, the Corps also has authority under the Refuse Act of 1899, 33 U.S.C. § 407 (1982), to regulate any activity in navigable waters that interferes with navigability.

442. 33 U.S.C. § 1413(b) (1982). If the Corps is unable to find an economically feasible method or alternative site which would comply with EPA criteria, the Corps must seek a waiver of the specific involved requirements from the EPA Administrator. The Administrator must grant the waiver "unless . . . the dumping of the material [would] result in an unacceptably adverse impact on municipal water supplies, shell-fish beds, wildlife, fisheries (including spawning and breeding areas), or recreational areas." *Id.* § 1413(d).

Water Act. Under section 1344, the Corps evaluates permits based on ocean discharge criteria developed by the EPA.⁴⁴³ Permits must specify the disposal site, and the EPA may veto any proposed site. This permitting program under section 1344 is delegable to the states;⁴⁴⁴ however, Florida has not been delegated that authority.

In 1977, Congress amended section 1344 of the Act by adding subsection (t), which provides:

Nothing in this section shall preclude or deny the right of any State or interstate agency to control the discharge of dredged or fill material in any portion of the navigable waters within the jurisdiction of such State, including any activity of any Federal agency, and each such agency shall comply with such State or interstate requirements both substantive and procedural to control the discharge of dredged or fill material to the same extent that any person is subject to such requirements. This section shall not be construed as affecting or impairing the authority of the Secretary to maintain navigation.⁴⁴⁵

The legislative history of the 1977 amendment indicates that Congress added subsection (t) to overcome the Corps' refusal to submit itself to state water pollution controls and to overrule the decision of the Eighth Circuit Court of Appeals in *Minnesota v. Hoffman*.⁴⁴⁶ The Eighth Circuit had concluded that section 1344 exempted the Corps from state requirements relating to the discharge of dredged spoil.

Today, the Corps does seek state water-quality certification, but it does not consider itself bound by the constraints of other state substantive and procedural requirements. The Corps argues that the language in the last sentence of subsection (t), declaring that subsection (t) "shall not be construed as affecting or impairing the authority of the Secretary [of the Army] to maintain navigation," overrides the preceding language.⁴⁴⁷ A recent case, *Friends of the Earth v. United States Navy*,⁴⁴⁸ upheld the view that subsection (t) required the Navy

443. See 33 U.S.C. § 1343 (1982).

444. See *Id.* § 1344.

445. Clean Water Act of 1977, Pub. L. No. 95-217, § 67(b), 91 Stat. 1566, 1600-1606 (codified at 33 U.S.C. § 1344(t) (1982)).

446. 543 F.2d 1198 (8th Cir. 1976), *cert. denied*, 430 U.S. 977 (1977).

447. The Corps argues this position despite language in the legislative history of the provision indicating that "the burden is clearly on the Corps to make every effort in every project to dredge in compliance with the same standards private dredgers and other dischargers must adhere to." SENATE COMM. ON ENVIRONMENTAL AND PUBLIC WORKS, 95TH CONG., 2D SESS., A LEGISLATIVE HISTORY OF THE CLEAN WATER ACT OF 1977, at 537 (Comm. Print Oct. 1978) (statement of Senator Anderson of Minnesota).

448. 841 F.2d 927 (9th Cir. 1988).

to get a state permit under Washington's Shoreline Management Act before continuing with dredging and filling related to a homeport project.

Conflict between federal and state regulation also exists with regard to congressionally authorized Corps projects. The Corps uses section 1344(r) of the Clean Water Act to argue that congressionally authorized projects are exempt from all state permit requirements. Section 1344(r) provides:

The discharge of dredged or fill material as part of the construction of a Federal project specifically authorized by Congress, whether prior to or on or after December 27, 1977, is not prohibited by or otherwise subject to regulation under this section, or a State program approved under this section, or section 1311(a) or 1342 of this title (except for effluent standards or prohibitions under section 1317 of this title), if information on the effects of such discharge, including consideration of the guidelines developed under subsection (b)(1) of this section, is included in an environmental impact statement for such project pursuant to the National Environmental Policy Act of 1969 . . . and such environmental impact statement has been submitted to Congress before the actual discharge of dredged or fill material in connection with the construction of such project and prior to either authorization of such project or an appropriation of funds for such construction.⁴⁴⁹

Section 1344(r) has been the source of much debate between the Corps and Florida's DNR. The controversy centers on a DNR rule mandating that all beach-quality material dredged in Florida be placed on Florida beaches, rather than out at sea. Federal legislation dictates that the Corps dispose of the dredged sand in the least costly manner, which generally translates to offshore disposal. DNR's position is that the problems of erosion, dumping of dredged material, and beach renourishment should be dealt with simultaneously, because they are uniquely related.

Inlet construction and maintenance has been estimated to cause eighty to eighty-five percent of human-related coastal erosion.⁴⁵⁰ Placing dredged, beach-quality sand on the beach would help to mitigate the damage caused by dredging of nearby inlets. The cost of beach placement of dredged sand would not be out of proportion to other disposal methods if the costs associated with erosion and beach resto-

449. 33 U.S.C. § 1344(r) (1982) (citation omitted).

450. Sellers, *The Natural Cost of the Federal Navigational Servitude—Who Ultimately Pays?*, 3 J. LAND USE & ENVTL. L. 133, 133-34 (1987).

ration were also factored into the formula. The cost of dumping beach-quality materials out at sea, when combined with expenses incurred by the Corps in later beach renourishment projects, could produce a final cost which far exceeds what it would cost to place the sand on the beach in the first place. Thus, DNR hopes to work with the Corps in seeking congressional authorization to pair dredging and beach renourishment projects. The two jobs could be carried out simultaneously in a manner which would be both cost effective and environmentally sound.

On April 26, 1988, the Corps published its Final Rule for Operation and Maintenance of Army Corps of Engineers Civil Works Projects Involving the Discharge of Dredged Material into Waters of the United States or Ocean Waters.⁴⁵¹ In the regulations, the Corps addressed the issue of the overlapping jurisdiction of section 1344 of the Clean Water Act and section 1413 of the Ocean Dumping Act in the territorial sea. All disposal in the ocean or territorial sea of material that has been excavated or dredged from navigable waters will be evaluated under the Ocean Dumping Act. Only materials determined to be deposited primarily for the purpose of fill will be evaluated under the Clean Water Act.⁴⁵²

Several states, including Florida, have objected strongly to the Corps' regulations. In permitting discharges under the Clean Water Act, the Corps recognized that both the state water-quality certification requirements of the Clean Water Act and the federal consistency requirements of the Coastal Zone Management Act (CZMA) are applicable to activities within three miles of the coast. The Corps rejected comments that federal consistency should apply to projects located within three leagues of the coast and to projects beyond three leagues "directly affecting" the coastal zone. The Corps also rejected Florida's contention that state water-quality certification should be sought for projects within the state's territorial sea beyond three miles.⁴⁵³ The Corps asserted that the Ocean Dumping Act may preempt both the Clean Water Act certification provisions and the CZMA. *As a matter of comity*, the Corps will continue to seek state water-quality certification and consistency determinations, but it specifically reserved its legal rights on the issue.⁴⁵⁴

451. See 53 Fed. Reg. 14,902 (April 26, 1988) (codified at 33 C.F.R. pts. 335-338 (1989)).

452. 53 Fed. Reg. 14,912 (April 26, 1988) (codified at 33 C.F.R. § 336.0(a),(b) (1989)).

453. See 53 Fed. Reg. 14,905, 14,908 (April 26, 1988).

454. 53 Fed. Reg. 14,908 (codified at 33 C.F.R. § 336.2(c) (1989)). Objections to the regulations include numerous other issues involving procedures, timing, and interpretation of Clean Water Act and CZMA provisions, but the two sections discussed involve the fundamental sovereignty and federalism issues that lie at the heart of the debate.

Issue: Ocean disposal of beach quality sand. Because so much of Florida's beach erosion problem can be traced to the construction and maintenance of navigation inlets, restoration of beaches should be tied to such navigation projects.

Recommendation: DNR should continue to work with the Corps and with Congress to combine navigation and beach nourishment projects and to reformulate methods of calculating the least costly means of disposal of dredged beach-quality sand to reflect the hidden costs of damage to beaches and the price to renourish those beaches.

Issue: Federal recognition of state environmental laws. This section gives several examples of areas where the Corps and the EPA are claiming federal preemption of state environmental laws through interpretation of statutes that perhaps are ambiguous, but that facially seem to recognize state authority to regulate certain uses of the territorial sea. These statutes involve ocean uses that can severely impact marine resources, and the interpretations bear philosophically on the nature of state sovereignty over its territorial seas.

Recommendations: The state should continue to seek the cooperation of federal agencies in recognizing state environmental standards and resource protection interests in the territorial sea. However, if cooperative efforts are unsuccessful in achieving state goals, the state should recognize that the principles involved are directly related to fundamental issues of federalism and state sovereignty and should litigate if appropriate. In addition, the state should develop a policy opposing the designation of ocean disposal sites in specially designated or protected waters. State policy should also be developed to oppose the designation of dumpsites off of Florida for the disposal of wastes other than dredged materials.

D. Oil Spills and Vessel Discharges

1. In General

Florida's coast has not been subjected to many major oil spills of 100,000 gallons or more, but the frequency of smaller spills is increasing. During the 1980's, an average of one incident every two days was reported. The main sources of these spills were oil tankers, marine terminals and ports, and offshore oil production.⁴⁵⁵

⁴⁵⁵. FLORIDA DEPARTMENT OF COMMUNITY AFFAIRS, FLORIDA COASTAL OIL SPILL HANDBOOK 1-2 (Feb. 1987) [hereinafter OIL SPILL HANDBOOK].

Vessels to, from, and around the state present the greatest threat of oil spills. Florida's burgeoning population has greatly increased the state's energy demands and the need for petroleum and, as a result, has increased vessel traffic delivering oil and the need for marine terminals for servicing vessels and storing petroleum products. Oil from all over the world passes through the Florida Straits en route to Louisiana and Texas refineries. Likewise, oil and petroleum products from the Gulf of Mexico must pass Florida's coast to reach northeastern United States ports and terminals.

Three of Florida's largest oil spills—50,384 gallons in the Keys in 1975, 33,589 gallons in Tampa Bay in 1978, and 108,000 gallons on the east coast from Atlantic Beach to Guana State Park in 1987—were incidents involving vessels. However, accidental or negligent discharges are not the only sources of oil pollution from vessels. Intentional, operational discharges from ballasting, tank cleaning, and bilge pumping contribute significantly to oil pollution problems.⁴⁵⁶

2. *International*

Recognizing that pollution of the seas by oil is a truly international issue, nations have negotiated a number of treaties to control intentional discharges and to minimize accidental discharges. The major treaties include the following:

1) The 1954 Oil Pollution Prevention Convention prohibited the discharge of oil and oily mixtures into the sea in certain areas.⁴⁵⁷ Prohibited zones were defined to include all sea areas within fifty miles of a coast, but a number of special areas extended to 100 miles offshore. An Oil Record Book was required to document discharges of oil and the surrounding circumstances. Amendments in 1969 added a rule that discharges must be *en route* and proscribed a rate of discharge in addition to the distance-from-land rule. Amendments in 1971 related to tank size and arrangement and created a fifty-mile prohibited zone around the Great Barrier Reef.⁴⁵⁸

2) The 1969 Convention on Intervention on the High Seas gives contracting parties the authority to

take such measures on the high seas as may be necessary to prevent, mitigate or eliminate grave and imminent danger to their coastline or related interests from pollution or threat of pollution of the sea by

456. *Id.*

457. International Convention for the Prevention of Pollution of the Sea by Oil, done May 12, 1954, 12 U.S.T. 2989, T.I.A.S. No. 4900, 327 U.N.T.S. 3.

458. See R. SONI, CONTROL OF MARINE POLLUTION IN INTERNATIONAL LAW 181-188 (1985).

oil, following upon a maritime casualty . . . which may reasonably be expected to result in major harmful consequences.⁴⁵⁹

3) The 1969 Convention on Civil Liability for Oil Pollution Damage provides a legal basis for claims for damages to the territorial sea or coast of a state. The convention also provides a limitation of liability and defenses for shipowners and requires that all ships carrying over 2,000 tons of oil have financial security or insurance to the limit of liability.⁴⁶⁰

4) The 1971 Convention Concerning an International Fund for Compensation for Oil Pollution Damage is a supplement to the 1969 Liability Convention.⁴⁶¹ It supplements the liability compensation limits and provides compensation to individuals who suffer pollution damage. The Fund is maintained by oil companies in each treaty state, rather than by the oil tanker owners and operators.⁴⁶²

5) The 1973 Convention for the Prevention of Pollution from Ships (MARPOL) supersedes the 1954 convention and extends the scope of the international pollution prevention effort to discharges of any harmful substance and to virtually all vessels and oil platforms. Tankers over 150 gross tons and other ships over 400 gross tons must be inspected and certified that they meet convention requirements. MARPOL emphasizes improved technology. Port reception facilities are required to eliminate the necessity of flushing tanks at sea.⁴⁶³

In addition to these public law treaties, private oil companies have created a worldwide insurance syndicate for compensation of damages arising from tanker oil spills. The 1969 Tank Owners' Voluntary Agreement Concerning Liability for Oil Pollution provides cleanup costs to governments up to \$10 million,⁴⁶⁴ and the 1971 Contract Regarding an Interim Supplement to Tanker Liability for Oil Pollution extends coverage to other governmental costs and private damages.⁴⁶⁵

459. International Convention on the High Seas in Cases of Oil Pollution Casualties, *done* Nov. 29, 1969, art. IV, para. 4, 26 U.S.T. 765, T.I.A.S. No. 8068. *See also* R. SONI, *supra* note 458, at 188-90.

460. *See* International Convention on Civil Liability for Oil Pollution Damage, *done* Nov. 29, 1969, 9 I.L.M. 45 (1970). *See also* R. SONI, *supra* note 458, at 190-93.

461. International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, *done* Dec. 8, 1971, 11 I.L.M. 284 (1972).

462. R. SONI, *supra* note 458, at 193-95.

463. *See* Convention for the Prevention of Pollution from Ships, *done* Nov. 2, 1973, 12 I.L.M. 1319 (1973). *See also* R. SONI, *supra* note 458, at 181-88.

464. Tanker Owners' Voluntary Agreement Concerning Liability for Oil Pollution, Jan. 7, 1969, 8 I.L.M. 497 (1969). *See also* R. SONI, *supra* note 458, at 195-96.

465. Oil Companies' Contract Regarding an Interim Supplement to Tanker Liability for Oil Pollution, Jan. 14, 1971, 10 I.L.M. 137 (1971). *See also* R. SONI, *supra* note 458, at 196-98.

Liability is based on negligence, but the burden of proof is on the charterer or shipowner.⁴⁶⁶

Although international efforts have had a significant effect in the area of liability and cleanup costs for pollution from oil and hazardous substances, many commentators believe that the conventions have actually provided very little relief from chronic discharges from vessels. The major weakness of the conventions is inadequate coastal-state enforcement authority, even within "prohibited" zones. Enforcement is the responsibility of the flag country, and unfortunately there is very little economic incentive for a country to engage in vigorous enforcement of treaty obligations against its ships in distant waters. The 1982 Law of the Sea Convention⁴⁶⁷ offers increased opportunities for coastal-state enforcement, but the United States is unlikely to become a party to the treaty.⁴⁶⁸

The United States and fifteen other countries are also parties to the 1983 Cartagena de Indias Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region and Protocol concerning Co-operation in Combating Oil Spills in the Wider Caribbean Region,⁴⁶⁹ commonly called the Cartagena Convention.⁴⁷⁰ An additional sixteen countries are participating in a Caribbean Action Plan to implement the treaty. The convention was intended to address a number of sources of marine pollution, including vessels, dumping, seabed activities, airborne pollution, and land-based sources and to provide a dispute resolution procedure. In addition to adopting the protocol on oil spills, the parties have adopted a resolution urging nations in the region to refrain from ocean incineration, dumping, and disposal of nuclear wastes, except in accordance with the 1972 London Dumping Convention. The United States has proposed that the oil spill protocol be extended to include other hazardous substances.⁴⁷¹

466. See R. SONT, *supra* note 458, at 195-98.

467. United Nations Convention on the Law of the Sea, *done* Dec. 10, 1982, U.N. Doc A/CONF. 62/122, *reprinted in* 21 I.L.M. 1261 (1982).

468. See Dempsey, *Compliance and Enforcement in International Law—Oil Pollution of the Marine Environment by Ocean Vessels*, 6 NW. J. INT'L L. & BUS. 459, 557-61 (1984).

469. Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region and Protocol concerning Co-operation in Combating Oil Spills in the Wider Caribbean Region, *adopted* March 24, 1983, 22 I.L.M. 221 (1983).

470. Antigua and Barbuda; Barbados; Colombia; Cuba; France; Grenada; Guatemala; Jamaica; Mexico; the Netherlands on behalf of Aruba and the Netherlands Antilles; Panama; Saint Lucia; Trinidad and Tobago; the United Kingdom on behalf of the Cayman Islands, the Turks and Caicos, and the British Virgin Islands; and Venezuela are the other nations that have ratified the convention. Caribbean Regional Co-ordinating Unit, United Nations Environment Programme, 3 CERNEWS 4 (Dec. 1989) (newsletter).

471. *Current Legal Developments*, 2 INT'L J. ESTUARINE & COASTAL L. 240-56 (1987).

3. Federal Legislation and Regulation

The Clean Water Act prohibits the discharge of oil and other hazardous substances into or upon the navigable waters of the United States in amounts that may be harmful to the public health and welfare.⁴⁷² For purposes of the oil spill provisions of the Act, navigable waters include the United States contiguous zone, *i.e.*, twelve miles offshore.⁴⁷³ Any owner or operator of a vessel or facility who violates this section is subject to civil penalties up to \$5,000 for each violation.⁴⁷⁴ Once the owner or operator has knowledge of any discharge from the vessel or facility, the owner or operator must report the spill to the United States Coast Guard and must attempt to contain and remove the oil from the water. A failure to report the spill immediately subjects the owner or operator to criminal fines up to \$10,000 or imprisonment up to one year, or both.⁴⁷⁵ If the owner or operator cannot be identified or does not or cannot properly remove the spilled oil from the water, the federal government must remove or arrange for the removal of the oil.⁴⁷⁶

In addition to civil penalties and possible criminal penalties, the Clean Water Act holds the violator strictly liable for the federal government's cleanup costs. Liability can only be avoided when the discharge is proven to be caused by an act of God, an act of war, negligence by the government, or an act or omission of a third party.⁴⁷⁷ Limitations on liability are set for owners or operators of vessels from which oil is discharged, but the limit will be lifted if the government establishes that the discharge was the result of "willful negligence."⁴⁷⁸ In addition, oil tankers and barges must show proof of financial responsibility up to the limits of liability to operate in United States waters.⁴⁷⁹ These limitations, however, apply only to federal cleanup costs and do not affect liability for damages or preempt states from imposing liability for their cleanup costs and damages.⁴⁸⁰

To facilitate the rapid cleanup of spills of oil and hazardous substances, the Clean Water Act established a "revolving fund" to finance state and federal costs. In addition, the Clean Water Act required the development of a National Oil and Hazardous Substances Contin-

472. See 33 U.S.C. § 1321(b)(3) (Supp. V 1987).

473. *Id.* § 1321(b)(1).

474. *Id.* § 1321(b)(6)(A).

475. *Id.* § 1321(b)(5) (1982).

476. *Id.* § 1321(c)(1).

477. *Id.* § 1321(f). These exceptions have been *very narrowly* construed by the courts.

478. *Id.* § 1321(f)(2).

479. *Id.* § 1321(p)(1).

480. See *Askew v. American Waterways Operators, Inc.*, 411 U.S. 325 (1973).

gency Plan. The EPA and the United States Coast Guard worked with state and local agencies to develop methods for oil spill containment, dispersal, and removal and to establish federal regional response teams to respond immediately to oil spills.⁴⁸¹

In some circumstances, the Coast Guard and the EPA have the option of conducting a cleanup under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA).⁴⁸² Although CERCLA does not apply to oil spills, the coverage of hazardous substances is much broader than under the Clean Water Act. CERCLA procedures—notification and primary responsibility for cleanup on the private party—are similar to the Clean Water Act provisions. The strict liability requirement and the exceptions to liability are also similar. Potential liability for cleanup costs and environmental damages, however, is much greater under CERCLA than under the Clean Water Act, and potential liability extends beyond the current owner or operator of the facility or vessel.

4. *Florida's Oil Spill Legislation and Regulation*

Florida's Pollutant Spill Prevention and Control Act⁴⁸³ largely parallels provisions of the Clean Water Act in that it prohibits coastal and ocean discharges of pollutants. Any person discharging a pollutant⁴⁸⁴ into Florida waters⁴⁸⁵ is responsible for the immediate cleanup of the substance.⁴⁸⁶ Liability of vessel owners or operators for state cleanup costs is a fine up to \$14 million or \$100 per gross registered ton, whichever is less.⁴⁸⁷ Strict liability for spills applies both to cleanup and to damages to individuals; however, liability for property damage is unlimited. A violator's defenses and the standard for lifting cleanup liability limitations are identical to federal exceptions. Vessel owners and operators also must establish and maintain proof of financial responsibility as required by federal law.⁴⁸⁸

The Pollutant Spill Prevention and Control Act also regulates terminal facilities. Terminals are defined to include pipelines and every

481. See 33 U.S.C. § 1321(c)(2) (1982).

482. 42 U.S.C. §§ 9601-9675 (1982 & Supp. V 1987).

483. FLA. STAT. §§ 376.011-.17, 376.19-.21 (1989).

484. "Pollutant" is defined as petroleum in any form, pesticides, ammonia, chlorine, and derivatives. *Id.* § 376.031(12).

485. Discharges outside of Florida territorial waters that affect the waters or lands within the state are also subject to the provisions of the Act.

486. *Id.* § 376.09(1).

487. *Id.* § 376.12(1).

488. *Id.* § 376.14(1).

shore facility—from a gas pump at a small marina to the largest tank farms and refineries.⁴⁸⁹ All terminal facilities must be registered by DNR, based on a showing of satisfactory containment and cleanup capabilities.⁴⁹⁰ Cleanup liability for terminals for state costs is limited to \$8 million.⁴⁹¹ Terminal owners must maintain evidence of financial responsibility.⁴⁹²

The Department of Natural Resources is responsible for oil spill control in the state's coastal waters. To complement the national and regional oil spill contingency plans, DNR has developed the Florida Coastal Pollutant Spill Contingency Plan and a response team—the State Hazardous Materials Task Force. In most cases, the Coast Guard and DNR will coordinate the response, with the federal On-Scene Coordinator taking the lead. The state Task Force will generally only be activated in the case of a major spill episode. Florida's policy is that *no state moneys be expended* on pollutant spill cleanup until federal funds have been depleted or the federal government declines to clean up the spill.⁴⁹³

In addition to the state Task Force, Florida has a statewide spill control association—the Florida Spillage Control Association. The Association is composed of regional cooperatives representing government agencies, ports, oil companies, and waterfront industries. The Association maintains information on the availability of pollution control equipment and cleanup organizations and serves as a technological and educational clearinghouse for cleanup information for the members, government agencies, and the public.⁴⁹⁴

Florida's Coastal Sensitivity Atlases comprise an important element of the oil spill planning effort. Developed through the Department of Community Affairs, the atlases use an environmental sensitivity index which is based on geomorphic, biologic, and other resource information to identify critical feeding and reproduction habitat. The index provides a scientific basis for setting priorities for response and protection.⁴⁹⁵

Like the federal government, Florida has established a fund to assure prompt and adequate response to oil spills. In addition to having funds available for emergency response, Florida Coastal Protection Trust Fund moneys may be used to rehabilitate natural

489. *See id.* § 376.031(15).

490. *Id.* § 376.06. According to DNR, there are over 800 registered terminals in the state.

491. *Id.* § 376.12(1).

492. *Id.* § 376.14(1).

493. OIL SPILL HANDBOOK, *supra* note 455, at 8-11.

494. *Id.* at 14.

495. *See id.* at 11-14.

resources, to compensate private parties for damages, and to provide grants to local governments to remove derelict vessels from public waters. DNR is responsible for recovering moneys expended from the fund from the persons responsible for the spill or from the federal government.⁴⁹⁶

Issue: Use of chemical dispersants. Florida's policy is that mechanical containment and removal is the preferred method of cleanup for oil spills. However, removal is not always feasible or physically possible. Chemical dispersants provide an alternative means of treating oil spills, but the use of such chemicals can have adverse environmental consequences.

In 1979, an advisory task force made recommendations regarding the use or non-use of chemical dispersants in Florida. These guidelines were incorporated into an interagency agreement between DER and the Game and Fresh Water Fish Commission and in a letter of agreement between the United States Coast Guard (USCG), the EPA, and DER. In summary, the guidelines provide the following:

- 1) Dispersants will not be used in fresh water.
- 2) Dispersants may be used to save human life.
- 3) Dispersants may be used at least three miles offshore where the water depth is at least twenty meters.
- 4) Dispersants generally should not be used nearshore unless the esthetic/economic value of a recreational area far outweighs the environmental value, and the use has a high probability of preventing the spill from accumulating on the shore.
- 5) Dispersants shall not be used in or on shellfish propagation or harvesting waters, aquatic preserves, waters over reefs, nursery areas for aquatic species, Outstanding Florida Waters, coastal marshes, or mangrove forests except with express, prior authorization of the State of Florida or the EPA.
- 6) Only EPA-approved dispersants may be used and only after a determination that there is no feasible alternative. In addition, the agreements provide that in a state cleanup operation, DER has authority to approve or disapprove the use of dispersants, and in a federal cleanup the USCG On-Scene Coordinator has the nondelegable authority to make such a decision.

At this time, an industry-sponsored study of dispersant use is underway. Its goal is to develop a thorough and reasoned dispersant-use decision-making process in which all levels of government will

496. See FLA. STAT. § 376.11 (1989).

participate. It is specifically designed to facilitate complicated and timely decisions during emergency circumstances.

Recommendations: Florida needs to continue to refine information on appropriate use of dispersants. The state should carefully monitor research in the development of oil dispersant technology as to its effectiveness under different conditions and its environmental impacts. The state's Oil Spill Sensitivity Atlas and Oil Spill Dispersant Atlas should be regularly reviewed to assure that these documents provide the most current information to spill coordinators on sensitive habitats and dispersant use and effects. In addition, the Florida outer continental shelf representative should continue to encourage the Marine Minerals Service of the Department of Interior to include comprehensive dispersant-effects studies in its Environmental Studies Program.

Note: In 1989, the Florida Legislature created the Spill Response Task Force to evaluate the state's current ability to respond to spills of oil and hazardous substances in coastal waters. The Task Force Report contains forty-seven recommendations for legislative and industry action which include increasing penalties and raising limits on liability, requiring more containment and cleanup equipment and pollution response plans, imposing navigation and pilotage requirements, and providing expedited procedures for emergency response to spills. SPILL RESPONSE TASK FORCE, FINAL REPORT (Feb. 1990).

X. OCEAN ENERGY

A. *Oil and Gas Leasing and Development*

1. *Background*

By the early 1940's, potential oil and gas reserves off the coasts of the United States had been identified, and the technology to exploit that petroleum was being developed.⁴⁹⁷ To assure that other nations would not exploit that potential, President Truman proclaimed United States jurisdiction over the resources of the adjacent continental shelf

497. The discovery of the Creole field in 1938 one and one-half miles off the Louisiana coast was the first successful offshore petroleum venture. U.S. DEP'T OF INTERIOR, LEASING ENERGY RESOURCES ON THE OUTER CONTINENTAL SHELF 3 (1987) [hereinafter LEASING ENERGY RESOURCES].

in 1945.⁴⁹⁸ In the subsequent dispute over whether the federal government or the states had control of the resources beneath the territorial sea, the federal government won in the United States Supreme Court, only to have Congress vest coastal states with title to territorial sea resources in the Submerged Lands Act of 1953.⁴⁹⁹

In 1953, Congress also passed the Outer Continental Shelf Lands Act (OCSLA),⁵⁰⁰ reaffirming the United States' exclusive jurisdiction over its continental shelf resources and creating authority for the Department of Interior (DOI) to encourage discovery and development of oil through a leasing program. From 1954 through 1986, over 479 million acres of continental shelf were offered for lease; 41 million acres were actually leased.⁵⁰¹ At the end of 1986, 5,075 offshore leases existed, of which eighty-three per cent were in the Gulf of Mexico.⁵⁰²

The oil industry has produced 7.5 billion barrels of oil and 74.7 trillion cubic feet of gas from federal offshore leases. Approximately ninety-five per cent of the oil and over ninety-nine per cent of the gas produced from offshore federal leases has come from the Gulf of Mexico.⁵⁰³ In proportion to the amount of oil produced and the number of wells drilled—over 26,000—the amount of oil spilled is relatively low. The amount also continues to decline as safer technologies are developed and more stringent regulatory safeguards are applied.⁵⁰⁴

FIGURE 3. CRUDE OIL SPILLS FROM FEDERAL LEASES IN THE GULF OF MEXICO, 1970-1986⁵⁰⁵

<u>Year</u>	<u>Number of Spills:</u>		<u>Total Spillage in Barrels</u>
	<u>1-50 Barrels</u>	<u>100 + Barrels</u>	
1970	N/A	7	83,823
1971	N/A	10	1,110
1972	N/A	2	181
1973	N/A	3	21,935
1974	N/A	8	23,973
1975	N/A	0	0
1976	57	3	4,740

498. See Proclamation No. 2667, 3 C.F.R. § 67 (1945).

499. See 43 U.S.C. §§ 1301-1315 (1982 & Supp. V 1987). See also *supra* Section IV of this article (discussing submerged lands and jurisdiction).

500. 43 U.S.C. §§ 1331-1356 (1982 & Supp. V 1987).

501. LEASING ENERGY RESOURCES, *supra* note 497, at 4.

502. U.S. DEP'T OF INTERIOR, FEDERAL OFFSHORE STATISTICS: 1986 Table 5 (1988) [hereinafter FEDERAL STATISTICS].

503. LEASING ENERGY RESOURCES, *supra* note 497, at 4.

504. *Id.* at 6.

505. See FEDERAL STATISTICS, *supra* note 502, at 90 (Table 64).

<u>Year</u>	<u>Number of Spills:</u>		<u>Total Spillage in Barrels</u>
	<u>1-50 Barrels</u>	<u>100 + Barrels</u>	
1977	58	2	919
1978	59	3	1,382
1979	92	2	536
1980	40	2	1,775
1981	46	4	5,503
1982	42	0	124
1983	57	2	520
1984	46	1	224
1985	36	2	581
1986	36	1	227

Between 1964 and 1981, only twenty major spills of over 1,000 barrels were reported from offshore oil wells on federal leases. All but one of those spills occurred in the Gulf of Mexico.⁵⁰⁶

Accidental tanker spills present a far greater risk than releases from offshore oil facilities. From 1969 to 1986, oil spills from tankers amounted to about 24.6 million barrels of oil worldwide.⁵⁰⁷ In addition, nine of the twenty major outer continental shelf (OCS) spills were vessel-related.⁵⁰⁸

The most concentrated offshore leasing and oil and gas development in the Gulf of Mexico has been off the coasts of Texas and Louisiana. In its 1985 estimate of undiscovered, economically recoverable oil reserves, DOI estimated a marginal probability for exploitable hydrocarbons offshore of Florida as 0.25 for the South Atlantic region, 0.11 for the Florida Straits region, and 1.00 for the Eastern Gulf.⁵⁰⁹ Of the twenty-six planning areas currently being used for federal offshore planning, the South Atlantic region is ranked seventh, the Eastern Gulf of Mexico region is ranked ninth, and the Florida Straits region is ranked nineteenth in potential for undiscovered, economically recoverable amounts of hydrocarbons.⁵¹⁰

Since May 1959, forty-two wells have been drilled on federal leases off the coasts of Florida, all of which are nonproducing. In spite of

506. *Id.* at 91 (Table 65).

507. *Id.* at 93.

508. *Id.* at 91 (Table 65). Accidents involved anchor damage to pipelines, and vessels striking pipelines and platforms.

509. The marginal probability expresses the chance of the occurrence of hydrocarbons in commercial volumes, with 1.00 indicating known occurrences. U.S. DEP'T OF INTERIOR, OUTER CONTINENTAL SHELF OIL & GAS LEASING/PRODUCTION PROGRAM: ANNUAL REPORT/FY 1987, at 11-13 (1988) [hereinafter OCS ANNUAL REPORT].

510. FEDERAL STATISTICS, *supra* note 502, at 89.

this "long history of drilling dry holes off Florida,"⁵¹¹ interest remains high in certain areas, particularly in the Destin Dome and the South Florida Basin. Indeed, three wells off the Florida panhandle have been reported to have "shows" of hydrocarbons, but they have been temporarily plugged and abandoned. Currently, 225 blocks or about 1.3 million acres are under lease in the Eastern Gulf of Mexico Planning Area. No active leases exist off of Florida in the South Atlantic or in the Straits of Florida Planning Areas.⁵¹²

2. *The Federal Leasing and Development Program*

The gas and oil leasing program under the OCSLA was substantially changed through amendments in 1978 which incorporated environmental safeguards and created a role for states in OCS planning and development. The leasing procedure now comprises four phases: (1) a five-year leasing program, (2) the lease sale, (3) exploration, and (4) development and production.⁵¹³

The Secretary of Interior is required to prepare an oil and gas leasing program consisting of five-year schedules of proposed lease sales. The program must indicate, as precisely as possible, the size, timing, and location of such activities. To facilitate preparation of the program, the OCS has been divided into twenty-six planning areas. Three of these planning areas—the South Atlantic, the Florida Straits, and the Eastern Gulf of Mexico—border Florida.

Under the OCSLA, the following considerations must be taken into account in the development of the lease program:

- (A) existing information concerning the geographical, geological, and ecological characteristics of such regions;
- (B) an equitable sharing of developmental benefits and environmental risks among the various regions;
- (C) the location of such regions with respect to . . . regional and national energy markets;
- (D) the location of such regions with respect to other uses of the sea and seabed . . . and other anticipated uses of the resources and space of the [OCS];
- (E) the interest of potential oil and gas producers . . . ;

511. A. APPLIGATE & J. LLOYD, SUMMARY OF FLORIDA PETROLEUM PRODUCTION AND EXPLORATION, ONSHORE AND OFFSHORE, THROUGH 1984, at 29-33, 53-58 (Fla. Dep't of Natural Resources Information Circular No. 101, 1985).

512. Johnson & Tucker, *The Federal Outer Continental Shelf Oil and Gas Leasing Program: A Florida Perspective* 4-5 (Office of the Governor Feb. 1987).

513. See Outer Continental Shelf Lands Act Amendments of 1978, Pub. L. No. 95-372, 92 Stat. 629 (codified as amended at 43 U.S.C. §§ 1331-1356 (1982 & Supp. V 1987)).

(F) laws, goals, and policies of affected States⁵¹⁴ which have been specifically identified by the Governors of such States as relevant matters for the Secretary's consideration;

(G) the relative environmental sensitivity and marine productivity of different areas of the [OCS]; and

(H) relevant environmental and predictive information for different areas of the [OCS].⁵¹⁵

The lease program is intended to reflect, "to the maximum extent practicable, . . . a proper balance between the potential for environmental damage, the potential for the discovery of oil and gas, and the potential for adverse impact on the coastal zone."⁵¹⁶

Development and adoption of the five-year leasing program involves extensive planning, review, and consultation with other agencies, the oil and gas industry, the public, and affected state and local governments.⁵¹⁷ The procedural requirements of both the OCSLA and the National Environmental Policy Act of 1969 (NEPA)⁵¹⁸ must be met. NEPA requires DOI to prepare an Environmental Impact Statement (EIS)⁵¹⁹ and to consider the environmental effects and alternatives to the proposed federal action. NEPA provides states and the public an additional opportunity to participate in the OCS lease process through commenting on the draft and final EIS.⁵²⁰

After publication of a proposed five-year lease program, states and local governments have an additional ninety days to make comments and recommendations. At least sixty days before approving the program, the Secretary must submit the program to Congress along with any comments and the Secretary's justification for rejecting the re-

514. An "affected State" includes (1) a state connected to an artificial island or structure; (2) a state that will receive oil from the OCS; (3) a state designated by the Secretary of Interior which has a substantial probability of significant impact or damage to the coastal, marine, or human environment from OCS development; or (4) a state that the Secretary finds is subject to considerable risk from oil spills, blowouts, or other releases because of such factors as prevailing winds or currents. 43 U.S.C. § 1331(f) (1982).

515. 43 U.S.C. § 1344(a)(2)(A)-(H) (1982).

516. *Id.* § 1344(a)(3).

517. Governors of affected states are given several opportunities to review and comment on the proposed leasing program both before and after publication of the proposed program in the Federal Register. The Secretary must reply to the governors in writing, explaining his decision to grant or deny the governors' requested modifications. The submission of the lease program to Congress and the President must include copies of all correspondence between the Secretary and the governors of affected states. *Id.* § 1344(c).

518. 42 U.S.C. §§ 4321-4370 (1982 & Supp. V 1987).

519. Usually a draft and a final EIS are done.

520. *See id.* § 4332 (1982). States or individuals may also challenge the sufficiency of a completed EIS judicially. *See, e.g.,* National Resources Defense Council, Inc. v. Morton, 458 F.2d 827 (D.C. Cir. 1972).

commendations of a state or local government.⁵²¹ After approval, the Secretary must review the leasing program yearly and may revise and reapprove it.⁵²² A new program must be developed, however, every five years.⁵²³

In July 1984, DOI initiated development of the third five-year OCS leasing program to cover the period from mid-1987 through mid-1992. The new five-year program was approved on July 2, 1987.⁵²⁴ The four sales scheduled off of Florida include two in the Eastern Gulf of Mexico Planning Area, one in the South Atlantic Planning Area, and one in the Straits of Florida Planning Area.⁵²⁵

Before DOI may initiate a lease sale, environmental studies of the lease area must be conducted in cooperation with affected states.⁵²⁶ Through 1985, over \$400 million has been spent on OCS environmental and socioeconomic studies.⁵²⁷ The data is used to predict, assess, and manage the possible effects of OCS development on human, marine, and coastal environments.⁵²⁸ The Secretary is required to consider relevant environmental information in developing regulations, issuing operating orders, and in making decisions relating to exploration, drilling, and development and production plans.⁵²⁹ The Secretary is also directed in the OCSLA to carry out post-development environmental studies to monitor changes resulting from OCS activities.⁵³⁰ An additional EIS is required for each individual lease sale.⁵³¹

The leases are granted to the highest, responsible, qualified bidder through a competitive bidding process. The bidding is done by sealed bids based upon a notice of sale published in the Federal Register.⁵³² The lease term is for a five- to ten-year period, depending on the depth of the water.⁵³³ DOI has the express power to suspend temporarily or to cancel leases if the lessee fails to comply with the terms of the lease or "if there is a threat of serious, irreparable, or immediate

521. 43 U.S.C. § 1344(d)(1),(2) (1982).

522. *Id.* § 1344(e).

523. *Id.* § 1351(h)(2)(C).

524. OCS ANNUAL REPORT, *supra* note 509, at 31-32. See also U.S. DEP'T OF INTERIOR, OUTER CONTINENTAL SHELF OIL AND GAS 5-YEAR LEASING PROGRAM: MID-1987 TO MID-1992 (Apr. 1987) (proposed final).

525. Johnson & Tucker, *supra* note 512, at 4.

526. 43 U.S.C. § 1346(a) (1982).

527. U.S. DEP'T OF INTERIOR, MANAGING OIL AND GAS OPERATIONS ON THE OUTER CONTINENTAL SHELF 9 (1986) [hereinafter MANAGING OIL AND GAS].

528. *Id.*

529. 43 U.S.C. § 1346(d) (1982).

530. *Id.* § 1346(b).

531. See 42 U.S.C. § 4332 (1982).

532. See MANAGING OIL AND GAS, *supra* note 527, at 10. See also 43 U.S.C. § 1337(a) (1982).

533. 43 U.S.C. § 1337(b) (1982).

harm or damage to life (including fish and other aquatic life) . . . or to the marine, coastal, or human environment"⁵³⁴

Before embarking on exploration, the lessee must submit an exploration plan to DOI for approval. The plan must include a schedule of exploration activities, a description of the equipment to be used, the location of the well, and other information.⁵³⁵ An oil spill contingency plan and an environmental report must accompany the plan. DOI may conduct an environmental assessment (EA) to determine if an EIS must be prepared. EA's are generally done for frontier areas, such as those off Florida. EA's have been prepared for all the plans in the Eastern Gulf, but no EIS's have been prepared based on the assessments. For "mature areas" of the OCS, such as the Central and Western Gulf, DOI has determined the EA's are generally not required. A Categorical Exclusion Review is done to support a finding of no significant environmental impact.⁵³⁶

DOI has sixty days to approve, approve with modifications, or disapprove an exploration plan once it is complete.⁵³⁷ However, DOI cannot issue a permit for exploration until the state has concurred, or has been presumed to concur, with the consistency certification that must be submitted with the plan.⁵³⁸ A consistency certification asserts that the exploration plan is consistent with the state coastal management program.⁵³⁹ This process may involve an additional three to six months.

Once a discovery has been made, a development and production plan must be submitted to DOI for approval before production activities can begin. The plan must describe the work to be performed, the drilling facilities to be used, the location and depth of wells, geological and geophysical data, environmental and safety standards, and a timetable for development and production.⁵⁴⁰ This plan must also be accompanied by an oil spill contingency plan and an environmental report. The plan is reviewed for environmental impacts to determine whether another EIS must be prepared.⁵⁴¹ DOI must disapprove a plan

534. *Id.* § 1334(a)(1).

535. *Id.* § 1340(c).

536. *MANAGING OIL AND GAS*, *supra* note 527, at 15-17.

537. 43 U.S.C. § 1340(c)(1) (1982).

538. *Id.* § 1340(c)(2).

539. *See supra* section VI of this article (discussing Florida's Coastal Management Program).

540. *See* 43 U.S.C. § 1351(a),(c) (1982); *MANAGING OIL AND GAS*, *supra* note 527, at 17.

541. In the Western and Central Gulf, DOI generally finds it unnecessary to prepare an EA or an EIS, because of the experience in that area. The OCSLA requires, however, that DOI must determine, at least once in each planning area, that an EIS is required for a production and development plan. *See* 43 U.S.C. § 1351(e)(1) (1982). Therefore, at least one EIS must be prepared for each planning area off Florida.

for development and production if it determines that the lessee has failed to demonstrate compliance with applicable laws, the activities threaten national security or defense, or the activities pose a serious threat to life, including aquatic life, property, or to the marine, coastal, or human environment.⁵⁴²

The Secretary of Interior must provide notice and copies of documents for proposed lease sales, exploration plans, and development and production plans to the governors of affected states. Governors of affected states and executives of local governments may submit recommendations to the Secretary on the size, timing, and location of proposed lease sales or with respect to a proposed development and production plan.⁵⁴³ The Secretary must accept the timely recommendations of a governor on lease sales if he determines that the recommendations "provide for a reasonable balance between the national interest and the well-being of the citizens of the affected State." The Secretary must respond to a governor in writing concerning his reasons for accepting or rejecting the recommendations.⁵⁴⁴ Federal regulations require that written comments by states be considered by DOI in evaluating exploration plans.⁵⁴⁵

State review of exploration and production and development plans under OCSLA provisions is generally conducted concurrently with review under the Coastal Zone Management Act of 1972 (CZMA).⁵⁴⁶ The Act requires that both exploration plans and development and production plans be consistent with a state's approved coastal zone management program.⁵⁴⁷ This has been an important tool in assuring that the state's concerns about oil and gas development off its coasts are considered.⁵⁴⁸

542. 43 U.S.C. § 1351(h)(1) (1982).

543. *Id.* § 1345.

544. *Id.* The requirement of acceptance of a governor's recommendations, except under limited conditions, appears to give states a preemptive power. This is not necessarily the case. Judicial review of a determination of the Secretary of Interior *not* to accept such recommendations is extremely limited and based on whether a determination was "arbitrary and capricious." *See id.* § 1345(d). *See also* California v. Watt, 683 F.2d 1253 (9th Cir. 1982), *rev'd on other grounds*, 464 U.S. 312 (1984).

545. 30 C.F.R. § 250.33(h) (1989).

546. 16 U.S.C. §§ 1451-1464 (1988).

547. *See* 43 U.S.C. § 1351(d) (1982) and 16 U.S.C. § 1456(c)(3)(B) (1988). Until recently, there was a great deal of controversy concerning whether sales of offshore leases were subject to the consistency requirements of the CZMA. The United States Supreme Court settled this question in the negative, thereby relieving DOI of the responsibility of reviewing federal oil and gas lease sales for consistency with state coastal plans. *See* Secretary of Interior v. California, 464 U.S. 312 (1984).

548. *See supra* section VI of this article (discussing the state's consistency review process).

To determine consistency with the state's coastal management plan, Florida requires that each plan be accompanied by technical information including site-specific oil spill trajectory analyses and containment and cleanup plans. The trajectory analyses use worst-case meteorological and physical oceanographic conditions to identify state waters and resources that might be negatively affected by an oil spill. The containment and cleanup plans must include equipment, procedures, and timeframes to ensure that the industry can react to contain the spill before it affects state resources. For example, Conoco's exploration plan for Destin Dome Area Block Number 56 was initially found to be inconsistent with Florida's coastal program, because the time reported by Conoco to contain a spill was not adequate. Subsequent negotiations led to Conoco's relocating its equipment to reduce response time.⁵⁴⁹

Information provided for consistency reviews can greatly enhance the state's knowledge of its resources and the measures necessary to protect them. For example, a review of SOHIO's plan of exploration for Gainesville Block 707 disclosed that the site was covered with a significant live bottom community. Because the state did not have sufficient information on the effects of exploratory drilling on these communities, the Department of Natural Resources (DNR) found that the plan would not be consistent with its statutory authorities that are included in the coastal management program. The state concurred with the consistency certification when SOHIO agreed to conduct a multi-disciplinary environmental monitoring program concurrent with the exploratory drilling.⁵⁵⁰

As a general statement, Florida's policy since 1979, as developed through the Governor's Office, has been "that the state does not oppose OCS oil and gas development as long as assurances can be made that [the state's] uniquely sensitive and economically important marine and coastal resources will not be adversely affected."⁵⁵¹ Florida's state policy concerning specific OCS activities is developed by the Environmental Policy Unit in the Governor's Office of Planning and Budgeting (OPB). In 1980, OPB formed the Florida OCS Advisory Committee to provide a forum for members to express concerns and interests in response to federal OCS activities, leases, and permitting. The Committee also provides an interagency forum for review of consistency certifications. The Committee is composed of representatives

549. Telephone interview with Paul Johnson, Environmental Policy Unit, Executive Office of the Governor (Apr. 2, 1990).

550. *Id.*

551. Johnson & Tucker, *supra* note 512, at 6.

of the following agencies and interest groups: the Office of Planning and Budgeting (Chair), the Governor's Energy Office, the Department of Commerce, the Department of Community Affairs, the Department of Environmental Regulation, the Department of Natural Resources, the Department of State, the Department of Transportation, the Game and Fresh Water Fish Commission, the County Commissioner's Association, the Florida Petroleum Council, the Sierra Club, the Florida Audubon Society, and the Florida Public Interest Research Group. The Environmental Policy Unit analyzes the concerns and recommendations of the Committee and other interested or affected parties to provide the Governor with options and recommendations for responding to federal OCS initiatives.⁵⁵²

3. OCS Revenues

Revenues from OCS leasing include bonuses, royalties, and rentals, all of which are deposited in the United States Treasury. During the period from 1954 through 1986, the federal government received over \$52.9 billion in bonuses, \$541.2 million in rentals, and \$30.7 billion in royalties from OCS oil and gas activities.⁵⁵³ From 1959 through 1986, the federal government received over \$1.5 billion in bonus payments and over \$10 million in rentals for leases off Florida's coasts.⁵⁵⁴

There is no true revenue sharing of OCS-generated funds with the states. In other words, coastal states receive no funds directly from the federal OCS lease activities. Unlike the policy for onshore leasing activities on federally owned lands, coastal states do not share in offshore royalties, cannot impose severance taxes, and do not receive payments in lieu of taxes to mitigate the impact of federal OCS leasing activities. There have been several attempts in Congress to address the problem of revenue sharing.⁵⁵⁵ However, no bills have been successful in resolving this issue.

Section 1337(g) of the OCSLA does provide for states to claim a fair and equitable share of revenues (twenty-seven per cent) if a federal lease within three miles of the territorial sea boundary taps a resource pool that underlies both federal and state lands.⁵⁵⁶ Florida has received \$30,000 in funds for leases within three miles of the territorial sea boundary. These funds are not technically a sharing of OCS re-

552. Telephone interview with Paul Johnson, *supra* note 549.

553. LEASING ENERGY RESOURCES, *supra* note 497, at 35.

554. FEDERAL STATISTICS, *supra* note 502, at 63.

555. See Fitzgerald, *Outer Continental Shelf Revenue Sharing: A Proposal To End the Seaweed Rebellion*, 5 UCLA J. ENVTL. L. & POL'Y 1, 21-29 (1985).

556. 43 U.S.C. § 1337(g)(4) (1982).

venues, but are compensation to the adjacent state for recovery of state territorial-sea oil resources.

4. *Oil and Gas Policy for Florida's Territorial Sea*

On June 2, 1987, the Governor and Cabinet adopted a resolution which stated: "[T]he State of Florida does not object to ecologically sound exploration and development of offshore petroleum resources, provided that such exploration, extraction and transportation activities can be undertaken without endangering Florida's sensitive marine and coastal resources" This resolution memorialized the state's position since 1979 that Florida does not object to offshore oil and gas development if protection of the marine and coastal resources can be assured.

Legislative policy direction has been less clear and slightly schizophrenic. In 1945, the Florida Legislature provided that the state policy regarding the energy resources of the state was "to conserve and control the natural resources of oil and gas of [the] state . . . [and] to encourage and cause the development . . . of [the] natural resources of oil and gas" ⁵⁵⁷ A more recent statement of policy is in the Energy Goal of the State Comprehensive Plan, adopted by the legislature in 1985. The Energy Goal emphasizes the conservation of energy and promotes the increased use and development of *renewable* energy resources. ⁵⁵⁸

The legislature has established some clear policies, however, by specifically limiting or prohibiting oil and gas development in certain areas. The following areas have been declared to be off-limits for oil and gas leases unless the governing authority of the municipality consents:

- (a) . . . lands within the corporate limits of any municipality
- (b) . . . lands in the tidal waters of the state, abutting on or immediately adjacent to the corporate limits of a municipality, or within 3 miles of such corporate limits
- (c) . . . any improved beach, located outside of an incorporated town or municipality, or . . . lands in the tidal waters of the state abutting on or immediately adjacent to any improved beach, or within 3 miles of an improved beach ⁵⁵⁹

Additional legislative prohibitions include the following:

557. Ch. 22819, § 1, Fla. Laws (1945) (codified at FLA. STAT. § 377.06 (1989)).

558. See FLA. STAT. § 187.201(12)(a) (1989).

559. *Id.* § 253.61(1)(a)-(c).

1) The sovereignty submerged lands management rule of the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees) prohibits oil and gas leasing less than "one mile seaward of the outer coastline of Florida . . . [unless the] lease stipulates that any drilling shall be conducted from outside said area."⁵⁶⁰

2) No drilling of oil or gas wells is allowed within areas designated as aquatic preserves.⁵⁶¹

3) Florida law prohibits any structure intended for the drilling or production of oil, gas, or other petroleum products to be permitted or constructed one mile inland of the coastline of the state.⁵⁶²

4) No petroleum-product drilling structures may be permitted or constructed within one mile of the seaward boundary of any state, local, or federal park, or aquatic or wildlife preserve.⁵⁶³

5) No petroleum-product drilling structures may be permitted or constructed within any bay or estuary.⁵⁶⁴

The Board of Trustees has title to and administrative jurisdiction over all state sovereignty submerged lands.⁵⁶⁵ These lands are held in trust for the people of Florida.⁵⁶⁶ The Florida Legislature has given the Board of Trustees specific authority to lease state bottom lands for royalties or other compensation for the discovery and production of petroleum and natural gas.⁵⁶⁷

All sovereignty lands management decisions, however, must conform to the public interest standard in article X, section 11, of the Florida Constitution:

The title to lands under navigable waters, within the boundaries of the state, which have not been alienated, including beaches below mean high water lines, is held by the state, by virtue of its sovereignty, in trust for all the people. Sale of such lands may be authorized by law, but only when in the public interest. Private use of portions of such lands may be authorized by law, but only when not contrary to the public interest.

560. FLA. ADMIN. CODE ANN. r. 18-21.004(2)(k) (1987).

561. FLA. STAT. § 258.42(3)(c) (1989).

562. *Id.* § 377.242(1)(a)(4).

563. *Id.* § 377.242(1)(a)(3).

564. *Id.* § 377.242(1)(a)(1). Note that this section seems to conflict with section 253.47, which gives the Board of Trustees the authority to "dispose of the right to drill wells for the discovery and the production of petroleum and natural gas in . . . the bays, lagoons, straits, [and] sounds . . . within the state . . ."

565. *See id.* § 253.03(1).

566. *Id.* § 253.001.

567. *See id.* § 253.47.

The Board of Trustees have adopted an even more stringent test for oil and gas leases of sovereignty submerged lands. Such leases will only be approved "upon adequate demonstration that the proposed activity is *in the public interest*, that the impact upon aquatic resources has been thoroughly considered, and that every effort has been made to minimize potential adverse impacts upon sport and commercial fishing [sic], navigation, and national security."⁵⁶⁸

5. *Florida's Leasing and Regulation for Offshore Oil and Gas*

Oil and gas exploration interests in Florida's territorial waters date back to the early 1940's when several leases were granted. Three major leases include virtually the entire offshore area from Pensacola to Naples. These leases were modified in 1976 and will remain in effect until 2016.⁵⁶⁹ Since 1945, a total of twenty-nine wells have been drilled in the state's territorial waters, all of which have been nonproducing. Hydrocarbons have never been produced commercially in Florida's territorial waters.⁵⁷⁰

Florida does not have an offshore oil and gas leasing program. Chapters 253 and 377 of the Florida Statutes, however, provide for onshore and offshore oil and gas leasing. These statutes, along with chapter 403 of the Florida Statutes, create the legal framework for regulation of oil and gas development activities in submerged lands. Leases are offered in response to a proposal for a lease from a potential lessee. Each lease nomination requires a \$200.00 nonrefundable processing fee.⁵⁷¹ The bids are sealed in a competitive bidding process. The primary lease term is for five years, but the Board of Trustees may grant leases for up to ten years. The lease term can be extended and with the state's permission can be transferred. Lessees are also required to submit an annual report.⁵⁷² Royalties are set at a minimum amount of one-eighth of the gross production. The lease agreement specifies the rental payments, which are established prior to the advertising for a lease sale.⁵⁷³ DNR is the agency responsible for collecting the revenues.⁵⁷⁴ However, because there has been no oil and gas pro-

568. FLA. ADMIN. CODE ANN. r. 18-21.004(2)(k) (1987) (emphasis added).

569. If the leases are generating oil, gas, or minerals in economically sustainable quantities at the end of the lease period, the leases will continue until production becomes uneconomic.

570. J. MILLER & M. RINKEL, A REPORT ON OIL AND GAS LEASING IN FLORIDA OFFSHORE WATERS FL-4 to -9 (1985).

571. For application requirements, see FLA. ADMIN. CODE ANN. r. 18-21.008(3) (1987).

572. See generally FLA. STAT. §§ 377.22-.41 (1989).

573. J. MILLER & M. RINKEL, *supra* note 570, at FL-24, FL-25.

574. See *id.* at app. A, pg. 7.

duction in Florida's territorial waters, no royalties have been generated.⁵⁷⁵

No environmental review process exists specifically for offshore oil and gas activities in state waters. However, existing state environmental laws and the Board of Trustees' ability to condition use of state lands provide substantial authority to regulate oil and gas leasing and development. The 1982 permit issued to Getty Oil for drilling in East Bay in Santa Rosa County is ample evidence of how Florida's current regulatory regime can protect marine and coastal resources. The permit imposed a no-discharge standard, required additional crew and equipment to assure protection of the bay and containment of possible spills, and required environmental monitoring of the project at all stages.⁵⁷⁶

B. Issues and Recommendations

Issue: No program for offshore oil leasing and development. Hydrocarbons have never been produced commercially in Florida's territorial waters. Because there are active mineral leases in state waters, however, there is the potential for development. The state cannot ignore the possibility of hydrocarbon development in the territorial sea, but there seems to be little reason to create specialized offshore leasing and development programs when existing laws provide both leasing procedures and environmental protections. Without adequate knowledge of the state submerged resources protection of those resources cannot be assured. One objective of the 1987 Agency Functional Plan of the Governor's Office is to increase the state's knowledge of its ocean and coastal waters through a comprehensive environmental studies program.

Recommendations: The state should develop long-term strategies for research, comprehensive living resource inventories, and mapping for Florida's territorial seas. A possible approach is discussed further in section XII of this article on marine education and research. In addition, funds received from the federal government under section 1337(g) of the OCSLA should be dedicated to a trust fund for developing information on marine living resources and for protecting those resources from the effects of offshore development.

Note: The Florida Marine Institute Research Plan for 1989-1994 proposes the development of a Marine Resource Geographic

575. *Id.* at FL-24.

576. Telephone interview with Lynn Griffin, Fla. Dep't of Env'tl. Reg. (Apr. 2, 1990).

Information System (MRGIS) to integrate and analyze information on marine systems from diverse sources. MRGIS would provide the information necessary for DNR and other state agencies to develop an ecosystem approach to marine resource management. FLORIDA MARINE RESEARCH INSTITUTE, RESEARCH PLAN 1989-1994, at 9-11 (1989).

Issue: State concerns with lease sales and oil and gas development on the OCS. In March 1988, DOI removed 11 million acres of OCS from the federal leasing program until 1993 and cancelled a proposed 1992 lease sale off the Keys in the Straits of Florida Planning Area. Although large areas off the Keys and Naples are now deleted and areas near Cape San Blas will receive extra protections, the state continues to be concerned about all areas south of twenty-six degrees north latitude.⁵⁷⁷ Because of the concerns raised by Governor Martinez and the inadequacy of environmental information necessary to make decisions, Secretary of Interior Donald Hodel agreed to delay further leasing off southwest Florida (south of twenty-six degrees north latitude) until at least May 1989.⁵⁷⁸ Subsequently, Congress imposed a moratorium which prevented further leasing or drilling in this area until after September 30, 1989.⁵⁷⁹

As part of the agreement to delay further leasing off of southwest Florida, the Governor and Secretary agreed to form two task forces to address issues that remain of concern to the state. One task force will address oil spill risks in the area, and the other will address the impacts that may result from all aspects of offshore oil and gas exploratory drilling.⁵⁸⁰

Recommendations: Although certain blocks in the sensitive areas near the Florida Keys have been deleted from the most recent federal lease sale, the issue of protecting the area is a recurring one. Certain areas off Florida are so sensitive or contain such significant living resources that stop-gap measures should not have to be continually applied to preserve them. Research and mapping is necessary to identify those areas. Moreover, federal legislation is necessary to provide permanent protection for sensitive areas and assurances that lease sales will be consistent with coastal management objectives. In addition, the state

577. See Letter from Bob Martinez, Governor of Florida, to Donald Hodel, Secretary of Interior (Mar. 24, 1988).

578. See Letter from Donald Hodel, Secretary of Interior, to Bob Martinez, Governor of Florida (June 16, 1988).

579. Act of Oct. 23, 1989, Pub. L. No. 101-121, § 110, 103 Stat. 701, 720.

580. See Letter from Bob Martinez, *supra* note 577.

should assure that oil and gas activities within the territorial sea are consistent with demands on the federal government's management of the OCS. For example, the state should exclude, by rule or legislation, all submerged lands south of twenty-six degrees north latitude from oil and gas leasing and development.

Note: Legislation now specifically excludes from oil and gas leasing, exploration, and development all areas of the Florida territorial sea south of twenty-six degrees north latitude on the Gulf coast and south of twenty-seven degrees north latitude on the Atlantic coast. See FLA. STAT. §§ 253.61(1)(d), 377.24(9), 377.242(1)(a)(5) (1989). Also, a National Research Council study requested by the President concluded that there is insufficient information to make leasing decisions for the federal OCS off of southwest Florida. NATIONAL RESEARCH COUNCIL, THE ADEQUACY OF ENVIRONMENTAL INFORMATION FOR OUTER CONTINENTAL SHELF OIL AND GAS DECISIONS: FLORIDA AND CALIFORNIA (1989).

Issue: OCS revenue sharing. Historically, states have shared *both* the fiscal benefits and the potential environmental detriment of mineral production on the federal lands within their boundaries. Coastal states share some indirect economic benefit from offshore development, but they primarily bear major environmental risks and resulting economic effects of OCS oil and gas development. One cannot compare the economic and environmental impacts of an oil well blowout on an Oklahoma prairie to a similar blowout off a major tourist beach or near a coral reef. Yet, Oklahoma receives fifty per cent of the royalties for oil produced on federal lands in that state and may also impose a severance tax. Existing programs do not guarantee coastal states even minimal funding to deal with the impacts of OCS development.

Recommendation: The state should support continued attempts to pass federal legislation requiring the sharing of OCS revenues with coastal states.

XI. MARINE RECREATION

Marine recreational activities may be Floridians' favorite pastimes, but they are also the most significant segment of Florida's biggest industry—tourism. Florida's beaches and coastal waters have worldwide appeal. Sun bathers and swimmers enjoy the 1,016 miles of sandy beaches; snorkelers and scuba divers marvel at the beauty of coral reef systems and the mystery of ancient shipwrecks; sport fishermen relish the bounty of Florida's waters; and recreational boaters know the joy of cruising the state's coastal seas. Because marine recreation is an

important part of the state's economy, enhancing recreational opportunities must be an essential element of the state's ocean policy perspective.

A. *Scuba Diving and Snorkeling*

Florida is not only the number one dive destination in the continental United States, but the state also contains four out of five of the most popular dive destinations in the world. John Pennekamp Coral Reef State Park, alone, attracts over 750,000 divers each year. Of course, divers are attracted to the state's clear waters, coral reefs, historic wrecks, and 300 freshwater springs, but the accessibility of dive sites, the availability of dive shops and services, and the affordability of dive trips also contribute to the popularity of Florida as a dive destination.⁵⁸¹

Diving is a growing part of the state's tourist industry, contributing an estimated \$1 billion each year to the state's economy. The average diver is a well-educated professional with an average income of \$51,000. He or she takes one major dive trip each year at a cost of \$1600 and spends about \$1900 on diving equipment. Most of the approximately 2.6 million divers in the world consider Florida a top-rated destination.⁵⁸² In addition, Florida has the highest concentration of certified divers of any state. In 1986, 17.8% of all certified divers in the United States were certified in Florida.⁵⁸³ Florida also has over 400 dive shops. The Florida Association of Dive Operators is the largest retail diving industry organization in the world.⁵⁸⁴

Issue: Diver safety. Each year divers, snorkelers, and other swimmers are injured or killed by boats in Florida. For one reason, inexperienced snorkelers do not know that state law requires them to use a diving flag so boaters can avoid them. Moreover, since many dive sites are accessible from the shore, not even a moored or anchored boat signals their presence. Further, inexperienced boaters may not recognize the flag or may be going too fast to avoid the area. Although boats can be heard in the water, even more experienced scuba divers have problems, because it is often difficult or impossible to tell the direction of the boat before it is upon the diver.

581. Telephone interview with Russell Teal, Florida Association of Dive Operators (Aug. 30, 1988).

582. Address by Governor Bob Martinez, International Dive and Travel Show, Orlando, Fla. (Sept. 30, 1988).

583. Grizzard, *Responsible Reef Development: A Sport Diver's Perspective*, in FLORIDA ARTIFICIAL REEF SUMMIT 38 (Sea Grant Report No. 93, 1988).

584. Interview with Russell Teal, *supra* note 581.

Recommendation: Nearshore areas need better protection for swimmers and snorkelers. Speed zones should be established where diving and snorkeling sites are accessible from the shore. In certain heavily used and shallow areas, boating traffic should be diverted from the diving area. Likewise, divers and snorkelers should be diverted from areas of heavy boating traffic.

Issue: Enhancing diving opportunities. Sections V and VII of this article discuss programs relating to enhanced diving opportunities. The Marine Salvage, Finds, and Historic Preservation section discusses underwater archaeological parks, and the Marine Fisheries Management section discusses artificial reefs in Florida. Artificial reefs attract fascinating and beautiful fish to delight divers. Underwater archaeological parks share a unique part of Florida history with the public.

Recommendation: Artificial reefs and underwater archeological parks can provide even more diving and snorkeling opportunities in Florida. The state should work with diving groups and operators to continue to develop this growing part of Florida's tourist industry by creating new underwater parks and making artificial reefs more accessible to divers.

B. Recreational Boating

On almost any sunny day, Florida's coastal waters are dotted with colorful sails and fast-moving power boats. There are about 650,000 registered pleasure boats⁵⁸⁵ in Florida and over 6,400 marine businesses. Recreational boating contributes an estimated \$3.5 billion per year to Florida's economy.⁵⁸⁶ According to a study conducted in 1984 for the Department of Natural Resources (DNR), boater registrations will increase by an estimated forty-eight per cent from 1982 to 2005.⁵⁸⁷

585. Only boats with at least 10-horsepower engines must be registered. Therefore, the actual number of pleasure boats greatly exceeds 650,000.

586. Telephone interview with John Lowe, Marine Industries Association of Florida (Aug. 30, 1988). According to a 1983 study, the recreational boating industry contributed \$1.48 billion to Florida's economy in 1980. See J. MILON, D. MULKEY, P. RIDDLE & G. WILKOWSKA, ECONOMIC IMPACT OF MARINE RECREATIONAL BOATING ON THE FLORIDA ECONOMY 25 (Sea Grant Report No. 54, Mar. 1983).

587. F. BELL & V. LEEWORTHY, ESTIMATION OF THE DEMAND AND SUPPLY OF MARINA SERVICES IN THE STATE OF FLORIDA 18 (prepared for the Bureau of State Lands Management, Florida Dep't of Natural Resources 1984). Money collected from vessel registrations is deposited in the Motorboat Revolving Trust Fund to provide for "recreational channel marking, public launching facilities, law enforcement and quality control programs, aquatic weed control, and manatee and marine mammal protection and recovery." FLA. STAT. § 327.28(1) (1989). Each year, \$250,000 of the Fund is earmarked for manatee and marine mammal protection. In 1988, the legislature increased vessel registration fees, primarily to hire more marine patrol officers.

As boating increases, however, the need for marinas and other means of access to the water will increase, as will user conflicts and boater-safety problems.

The need for more water access creates two problems in particular. First, larger boats require marina berths, and smaller boats require either dry storage facilities or boat ramps with parking for cars and trailers. According to the 1984 DNR study, only three-fourths of the state's wet slips and dry racks were being used. Thus, on a statewide basis, space in marinas does not seem critical, but this statistic does not reflect the high concentration of boats in certain areas of the state.

The second problem relating to water access is that areas of high population and high recreational use have the most severe demands on coastal property. Because the state has strict dredge and fill requirements, and because it views some marinas as developments of regional impact, new marina development is difficult. Further, the high value of coastal property makes other uses of shoreline property more attractive to developers.

The Local Government Comprehensive Planning and Land Development Regulation Act⁵⁸⁸ requires local governments to develop comprehensive land use plans containing a coastal management element. This element must include a "shoreline use component which identifies public access to beach and shoreline areas and [which] addresses the need for water-dependent and water-related facilities, including marinas, along shoreline areas."⁵⁸⁹ If local governments effectively implement these provisions, both marinas and other provisions for boater access would be incorporated in comprehensive plans and would be accommodated as water-dependent uses. These plans would be more effective, however, if they were coordinated with state and regional efforts to address the need for marinas and access. In 1985, DNR made recommendations for a proactive state marina siting policy.⁵⁹⁰ Implementation of this policy would greatly enhance local government planning efforts.

With the proliferation of boats on Florida's waters, boating safety is a major issue in the state. Florida records more boat-related deaths than most other states. Inexperience, ignorance, and intoxication are the primary causes.⁵⁹¹

588. FLA. STAT. §§ 163.3161-.3243 (1989).

589. *Id.* § 163.3178(2)(g).

590. See DIVISION OF STATE LANDS, FLORIDA DEP'T OF NATURAL RESOURCES, TOWARD A PROACTIVE STATEWIDE MARINA SITING PROGRAM POLICY (1985).

591. Boaters in the state are required to know and comply with navigation rules under the

The Department of Natural Resources has authority to establish by rule boating restricted areas "for any purpose deemed necessary for the safety of the public" ⁵⁹² Restricted areas are established in consultation with the local government where the area is located. So far, boating restricted areas have been established in six counties. ⁵⁹³ In addition to those areas, certain areas have been designated as prohibited areas or slow or idle speed zones for the protection of manatees. ⁵⁹⁴ Boating regulations have also been established in John Pennekamp Coral Reef State Park to protect divers and snorkelers and to protect the fragile coral reefs from anchor damage. ⁵⁹⁵

Issue: Addressing water access as a priority water-dependent use in local government planning. Although space in marinas is not yet critical, in some areas of the state coastal development conflicts will soon cause problems. Access to the water by boaters who also need a place to park cars and trailers is already a major problem in most areas of the state.

Recommendations: Local governments should give priority to water-dependent uses in the coastal element of their comprehensive plans. In local government plans, shoreline access should address the issue of getting boats, as well as people, to the water. DNR should pursue its proactive marina siting program and give guidance to local governments in their development of shoreline-use components of local plans.

Issue: Boater Safety. Boaters that drive recklessly, too fast, or too close to shore can pose a great danger to themselves, other boaters, swimmers, and manatees. The legislature has already acted to provide more law enforcement, but boater education is equally important. Boaters need to understand the habits of manatees and the effect of dragging anchors on coral reefs. They also need to know how to recognize a diver's flag and the locations of heavily-used snorkeling and

International Navigational Rules Act of 1977, 33 U.S.C. §§ 1601-1608 (1982 & Supp. V 1987), and the Inland Navigation Rules Act of 1980, 33 U.S.C. §§ 2001-2038, 2071-2073 (1982 & Supp. V 1987). Any person guilty of a criminal violation of navigation rules, of a noncriminal violation that results in an accident, or of more than one infraction in a twelve-month period must complete a boating safety course. FLA. STAT. § 327.731 (1989). Likewise, operating a boat while intoxicated or chemically impaired subjects a person to criminal penalties. *Id.* § 327.35. If a lawfully arrested boat operator refuses to take a test for intoxication or impairment, the person is subject to an additional \$500 civil penalty. *Id.* § 327.352(1)(b).

592. FLA. STAT. § 327.46(1) (1989).

593. See FLA. ADMIN. CODE ANN. r. 16N-24.001-.016 (1989).

594. See *id.* r. 16N-22.001-.031.

595. See *id.* r. 16D-2.011.

diving areas. Boats are "dangerous instrumentalities"⁵⁹⁶ and must be operated conscientiously.

Recommendation: The state should initiate more and better boater education programs to protect swimmers and divers, manatees, coral reefs, and other boaters. The state should continue to work with marine-industry groups to educate the public about boating safety.

C. Sport Fishing

Fishing is one of America's favorite sports, and "big game" fishing has attracted anglers to Florida since the turn of the century. The available data on saltwater recreational fishing is slightly dated, but it clearly reflects that this segment of the state's tourist economy is flourishing. According to a study conducted in 1982, about 5.2 million fishermen spent 58.6 million "angler days" in 1980 fishing in Florida, which translates to approximately \$5.058 billion in directly and indirectly generated income to the state.⁵⁹⁷ In the Florida Keys, alone, the direct economic impact of sport fishing is estimated to be around \$200 million per year.⁵⁹⁸

Sport fishermen are very sensitive to declining stocks, gear conflicts, and competing pressures on fisheries and habitat. They have been active participants in fisheries management at both the federal and state levels,⁵⁹⁹ and they support the adoption of a saltwater recreational fishing license to generate funds for fisheries research and management.⁶⁰⁰

D. Beaches

Florida's most prominent natural feature and biggest attraction remains her beaches. In 1984, beach users generated over \$4.581 billion in beach-related sales, provided 179,256 jobs, and yielded about \$164 million in state taxes. By 1995, beach generated income from sales is expected to increase to \$46 billion and provide almost \$1.6 billion in

596. Section 327.32 of the Florida Statutes provides that "[a]ll vessels . . . shall be considered dangerous instrumentalities in this state"

597. F. BELL, P. SORENSEN & V. LEEWORTHY, *THE ECONOMIC IMPACT AND VALUATION OF SALTWATER RECREATIONAL FISHERIES IN FLORIDA* xii (Sea Grant Report No. 47, Aug. 1982).

598. Letter from Dr. David Rockland, Director of Economics, The Sportfishing Institute, to Pat Sheldon, The Flying Fisherman (Mar. 24, 1987).

599. See *supra* section VIII of this article (discussing marine fisheries management at the federal and state levels).

600. See, e.g., Forsgren, *Responsible Reef Development: A Recreational Fisherman's Perspective*, in *FLORIDA ARTIFICIAL REEF SUMMIT* 39 (Sea Grant Report No. 93, 1988).

taxes.⁶⁰¹ These projections presume, however, that Florida's beaches remain a prominent natural feature and that people can physically get to the beaches.

1. Beach Renourishment and Beach Management

Florida's beaches have been eroding or retreating at an alarming rate. The attraction for tourists, as well as the property of coastal residents, has been threatened by the ocean's encroachment. For example, on Thanksgiving Day in 1984 a rather routine storm hit the eastern coast of Florida, causing a great deal of property damage and washing away hundreds of feet of beach. This storm motivated Florida's environmentalists to look hard at the alternatives for managing the state's beaches.⁶⁰²

After the Thanksgiving Day storm, the Governor and Cabinet appointed a task force to develop comprehensive recommendations for beach restoration and renourishment. The recommendations of the task force led to legislation in 1986 in which the Florida Legislature enunciated the following state policy on beach erosion control:

Because beach erosion is a serious menace to the economy and general welfare of the people of this state and has advanced to emergency proportions, it is hereby declared to be a necessary governmental responsibility to properly manage and protect Florida beaches from erosion and that the Legislature make provision for beach restoration and renourishment projects.⁶⁰³

The Legislature also found that beach erosion is a statewide problem, best addressed by a program in which DNR determines which beaches are critically eroding and administers state Beach Management Trust Fund expenditures for beach restoration or renourishment.⁶⁰⁴ DNR was also instructed to develop a "comprehensive long-term management plan for the restoration of the state's critically eroding beaches."⁶⁰⁵

In 1987, the unidimensional aspect (restoration) of the mandated 1986 beach management plan was revised. The legislature required the identification of alternative management responses and the considera-

601. DIVISION OF BEACHES AND SHORES, FLORIDA DEP'T OF NATURAL RESOURCES, FLORIDA'S BEACH ACCESS 2 (Apr. 1987).

602. See POLICY STUDIES CLINIC, FLORIDA STATE UNIVERSITY COLLEGE OF LAW, RESTORING FLORIDA'S ERODED BEACHES 9-10 (1987).

603. FLA. STAT. § 161.088 (1989).

604. *Id.* § 161.101.

605. *Id.* § 161.161(1).

tion of such approaches as armoring, relocation and abandonment, and dune and vegetation restoration, in addition to restoration and renourishment.⁶⁰⁶ The law also required DNR to “[s]elect and recommend . . . management measures for *all of the state’s sandy beaches* in a beach management program.”⁶⁰⁷

To develop the state plan, the state was divided into seven beach management districts. Beach restoration management plans, which must now be expanded into broader management plans, have been developed for three districts. DNR is currently preparing beach management plans and rules for the evaluation of restoration and renourishment projects.⁶⁰⁸

Beach management can take three basic approaches: restoration, armoring, and retreat. In important tourist areas of the state, restoration and renourishment of beaches is an economic necessity for the local communities and the state. The high cost of this management technique is justified by the revenue generated by those beaches. Those communities are also the most likely to be able to share in the cost of beach restoration projects. Unfortunately, because of environmental or physical conditions, all beaches are not candidates for restoration.

Armoring, the erection of seawalls or other barriers, is a second technique. Although armoring can provide short-term protection to endangered structures, some evidence indicates that armoring may increase the rate of erosion of adjacent beaches. In general, armoring is not a preferred management tool, but is often the only solution when a storm leaves a structure teetering on the brink of destruction. One might argue that all permits for armoring should be denied because shoreline property owners have assumed this risk of erosion and because armoring is a potentially dangerous approach for long-term management. Such a policy is difficult to apply in individual cases, however, because of the moral, economic, and political dilemmas that arise.

Recent federal legislation has somewhat alleviated the conflicts involved in instituting a no-armoring policy. Congress amended the National Flood Insurance Act of 1968 to extend coverage of flood insurance to include the cost of relocation or demolition of a structure that is “certified by an appropriate State or local land use authority to be subject to imminent collapse or subsidence as a result of erosion or undermining caused by waves or currents of water exceeding antici-

606. See *id.* § 161.161(1)(j).

607. *Id.* § 161.161(1)(l) (emphasis added).

608. See RESTORING FLORIDA’S ERODED BEACHES, *supra* note 602, at 26-27.

pated cyclical levels."⁶⁰⁹ In general, insurance will pay for relocation costs up to forty per cent of the value of the structure, and it will pay for demolition costs of 110 per cent of the value of the structure or the actual cost of demolition, whichever is less.⁶¹⁰ By removing much of the economic impact associated with state refusal to allow armoring to protect structures, Congress has created the opportunity for states to assess beach management techniques from a long-term, environmental perspective, rather than from a short-term, economic-impact perspective.

The third beach management option—retreat—is necessary when beach and dune systems are so dynamic that neither restoration nor armoring is feasible,⁶¹¹ when the economic costs of restoration cannot be justified, or when environmental concerns outweigh justifications for armoring or restoration. Cape San Blas on the Florida Panhandle is an example of an area with a dynamic beach and dune system. Although restoration or armoring will probably not be considered for those beaches, the property owners probably will not realize their options are so limited until the ocean is encroaching on their structures. It is very important that the state's beach management plan be completed, with beach management techniques identified, so that a mechanism can be devised for apprising property buyers of the risk they are assuming in purchasing certain coastal property.

In addition to long-term planning, DNR's Division of Beaches and Shores is responsible for day-to-day preservation, protection, and regulation of the state's beach-dune resource. The Division is divided into four areas: the Bureau of Coastal Data Acquisition, the Bureau of Coastal Engineering and Regulation, the Office of Beach Erosion Control, and the Office of Administrative Enforcement. The Bureau of Coastal Data Acquisition is responsible for the acquisition of historical and field shoreline-change data. That data, which is integrated into a computerized shoreline-change database, is used in the coastal construction control line reestablishment process⁶¹²—to develop long-term shoreline-change reports on a county basis—and in the thirty-year erosion projection calculations performed by Division engineers

609. Housing and Community Development Act of 1987, Pub. L. No. 100-242, § 544(a), 101 Stat. 1815, 1940 (1988) (codified at 42 U.S.C. § 4013(c) (Supp. V 1987)).

610. *Id.*

611. Retreat may also be necessary as a general policy if theories concerning sea-level rise prove to be valid.

612. See FLA. STAT. § 161.053 (1989). Coastal construction control lines (CCCL's) are established by DNR on a county basis along the sand beaches of the state. Within CCCL's, construction requires a DNR permit and may be conditional to assure protection of the beach-dune system, proposed or existing structures, adjacent properties, and public beach access.

as part of the permitting process.⁶¹³ Additionally, the Bureau coordinates with contracted consultants from the Florida State University and the University of Florida for research, development, and promulgation of coastal construction control line reestablishments in twenty-four coastal counties.

The Bureau of Coastal Engineering and Regulation administers the Division's permitting program. The Bureau is responsible for regulating specified construction and excavation activities upon sovereignty lands below the mean high water line of any state tidal water.⁶¹⁴ The Bureau also regulates construction and excavation activities seaward of established coastal construction control lines "to preserve and protect [the beach-dune system] from imprudent construction which can jeopardize the stability of the beach-dune system, accelerate erosion, provide inadequate protection to upland structures, endanger adjacent properties, or interfere with public beach access."⁶¹⁵

The Office of Beach Erosion Control is responsible for developing the statewide comprehensive beach management plan.⁶¹⁶ Additionally, the Office is responsible for administering state matching funds from the Beach Management Trust Fund for beach-management planning, erosion control, beach preservation and restoration, and hurricane protection.⁶¹⁷

The Office of Administrative Enforcement is the violations enforcement unit of the Division. The Office coordinates the investigation and resolution of violations of chapter 161, part I, of the Florida Statutes.

Issue: Funding for beach planning and management. Beach-management planning and implementation have no stable sources of funding. Individual projects have been funded through various sources including the State Infrastructure Fund⁶¹⁸ and the Land Acquisition Trust Fund.⁶¹⁹ However, there is no independent funding for the planning process or for environmental studies, nor any continuing funding for

613. See *id.* § 161.053(6). DNR may only issue a permit for a single-family dwelling if a site is located, based on DNR's erosion projections for an area, seaward of the seasonal high water line within thirty years after the date of application for the permit.

614. See *id.* § 161.041.

615. *Id.* § 161.053(1)(a).

616. See *id.* §§ 161.088-.211.

617. See *id.* § 161.091. Projects that may be authorized by DNR include project design; biological monitoring; inlet sand transfer projects; dune revegetation and stabilization; restoration, renourishment, or feeder beach project costs; public access easement and vehicle parking areas; sand source studies; and enhancement of marine turtle propagation. *Id.* § 161.101(8).

618. *Id.* § 212.235.

619. *Id.* § 375.041.

beach restoration and renourishment projects.

Recommendation: DNR should be provided the resources to complete the statewide beach management plan as soon as possible. Funding is also needed to explore fully the environmental impacts of restoration projects.

Issue: The statewide beach management plan. Local governments are developing local comprehensive plans with stringent coastal element requirements. The state beach management plan could provide invaluable guidance to these governments in local planning development. In addition, the plan could initiate a mechanism to apprise coastal property buyers of the risk they are assuming in purchasing coastal property, especially where retreat has been designated the preferred management technique.

Recommendation: The statewide beach-management plan should be completed as soon as possible and should be used to coordinate with local governments in their development of the coastal element of local comprehensive plans. Because the plan will establish a "retreat" policy in some areas, a mechanism should be established to apprise property buyers that neither restoration nor armoring will be possible in certain areas. That is, property buyers should be warned of the risk they are assuming.

Issue: Research on regulatory issues. DNR's beach and shore regulatory programs are far-reaching. Numerous issues need to be addressed in the context of these programs for policy development and effective regulation.

Recommendation: DNR should receive adequate funding to address the following research issues:

- 1) mitigation of the impacts of inlets on beaches and identification of the effects of stabilizing natural inlets;
- 2) effects of vegetation on dune systems;
- 3) cumulative effects of coastal development;
- 4) turbidity in restoration projects and natural turbidity levels;
- 5) coastal construction policies for redevelopment and for dealing with increased construction prior to reestablishment of coastal construction control lines;
- 6) additional studies for the coastal construction control line erosion model.

Issue: Information processing and analysis. To regulate and manage Florida's vast shoreline, data must be continuously accumulated and analyzed, and this information must be made available to regulators

and managers. In permitting, numerous conditions for information gathering are often imposed on applicants, but inadequate staffing often precludes enforcement of the conditions or an adequate opportunity to analyze the data received. Moreover, studies done by other agencies or the federal government may not be made available in a timely manner.

Recommendation: More automation and computerization is needed to process properly, and to make the best use of, information that is available to DNR for regulation and management. Mechanisms should be explored to assure interagency access to relevant studies, reports, or other data. Information-sharing arrangements, such as those included in the current erosion study by the United States Army Corps of Engineers, should be encouraged.

2. Beach Access

As Florida's population grows, it continues to concentrate in coastal areas. The tourists that flock to the state also want to stay "on the beach." But the homes, condominiums, and hotels that have been erected to meet the needs of residents and tourists are fast becoming a barricade to those who have traditionally used Florida's beaches. In some areas, it is virtually impossible even to find parking near a beach. In other areas, property owners have attempted to block public use of beaches.

Beaches below the mean high water line are the property of the state and thus are open to use by the public.⁶²⁰ In many areas of Florida the public has also established the right to use the dry sand beach landward of the mean high water line. The legal theories of prescription,⁶²¹ implied dedication,⁶²² and custom⁶²³ have been used to explain how the public acquired these easements through long use of the beaches.

When the public is impeded from using the beach below mean high water or from using the dry sand in areas where the public has established an easement, the obstruction constitutes a public nuisance. This

620. See FLA. CONST. art. X, § 11.

621. An easement by prescription is established by adverse, continuous use of property for a statutorily prescribed period of time under claim of right.

622. An easement based on implied dedication is established by demonstrating that the property owner intended to dedicate property to the public by acquiescing to continuous use of the property for a long period of time, generally the statutory period for creation of prescriptive easements.

623. In describing the elements of custom, the Florida Supreme Court stated: "If the recreational use of the sandy area adjacent to mean high tide has been ancient, reasonable, without interruption and free from dispute, such use, as a matter of custom, should not be interfered with by the owner." *City of Daytona Beach v. Tona Rama, Inc.*, 294 So. 2d 73, 78 (Fla. 1974).

common law cause of action, however, is usually available only to the government. An individual can bring a public nuisance action only if the person's injury is different in kind, not just degree, from the injury suffered by the public as a whole. In *United States Steel Corp. v. Save Sand Key, Inc.*, the Florida Supreme Court held that a citizen's group had no standing to sue for interference with the right to use a beach absent an allegation of a special injury differing in kind from that suffered by the public generally.⁶²⁴

Since 1986, the issue of preserving access to Florida's beaches has been the focus of increased attention by the legislature and the Governor and Cabinet. By resolution of September 4, 1986, the Governor and Cabinet recognized the "critical importance" of beach access and the duty of the Board of Trustees of the Internal Improvement Trust Fund to preserve and enforce access rights of the public.⁶²⁵ The legislature reiterated the importance of beach access in 1987 in the Surface Water Improvement and Management Act.⁶²⁶ In June 1987, the Governor and Cabinet also appointed a fourteen-member Beach Access Advisory Committee (BAAC) to propose recommendations for legislative and administrative action. The BAAC report, which was adopted by the Governor and Cabinet on April 12, 1988, proposed comprehensive beach-access legislation. Among the major provisions were prohibitions on obstructions to public beaches and the creation of a cause of action for removal of obstructions. The Committee recommended that broad standing apply to enforce these provisions. The report also included mechanisms to enhance access through tax relief and liability limitations and to improve access for the handicapped.⁶²⁷

The main statute currently relating to public access is section 161.55(6) of the Florida Statutes. The section is intended to protect beach-access rights while allowing developers as much flexibility as possible in using their property. The section provides:

Where the public has established an accessway through private lands to lands seaward of the mean high tide or water line by prescription, prescriptive easement, or any other legal means, development or construction shall not interfere with such right of public access unless a comparable alternative accessway is provided. The developer shall have the right to improve, consolidate, or relocate such public accessways so long as the accessways provided by the developer are:

624. 303 So. 2d 9 (Fla. 1974).

625. See FLORIDA'S BEACH ACCESS, *supra* note 601, at iii, 4-5.

626. See FLA. STAT. §§ 373.451-.4595 (1989).

627. See FLORIDA DEP'T OF NATURAL RESOURCES, REPORT OF THE BEACH ACCESS ADVISORY COMMITTEE (L. Blue ed. March 1988).

- (a) Of substantially similar quality and convenience to the public;
- (b) Approved by the local government;
- (c) Approved by [DNR] whenever improvements are involved seaward of the coastal construction control line; and
- (d) Consistent with the coastal management element of the local comprehensive plan adopted pursuant to [section] 163.3178.

This section potentially provides environmental benefits, as well as flexibility for developers of coastal property. In some areas, access points across dunes have damaged the vegetation and the dune system. Consolidation of access points in one area that provides walkers to protect the dunes can benefit both the developer, the public, and the beach and dune system. This statute does not indicate, however, whether this section was intended to create a new cause of action enforceable by the public.

DNR's regulatory program also includes safeguards to preserve public access. In issuing permits for construction within coastal construction control lines, DNR may require special siting and design requirements to preserve public beach access.⁶²⁸ Coastal construction may not interfere with public access along the beach. If interference with public access is unavoidable to protect the beach or an endangered upland structure, DNR may require, as a permit condition, the provision of alternative access.⁶²⁹

Local government comprehensive plans are also intended to address beach access in the coastal elements of the plans. The shoreline-use component of local plans will identify access to the beach and shore.⁶³⁰ A land use and inventory map of existing coastal uses is also required to identify public access routes to beach and shore resources.⁶³¹ If the identification of public access routes includes access points that have been established through common law use principles, this inventory could provide an excellent basis for enforcement of the provisions of section 161.55(6), discussed above. However, it is unlikely that local governments will be willing to confront the controversy or potential litigation that would be involved in asserting common law access rights, either in the context of the land use map and inventory or in enforcing section 161.55(6).

Issue: Beach-access rights of the public. Citizens of the state currently have no standing to bring actions to protect beach-access rights that

628. FLA. STAT. § 161.053(1) (1989).

629. See *id.* §§ 161.041(1), 161.053(5)(e).

630. *Id.* § 163.3178(2)(g).

631. *Id.* § 161.3178(2)(a).

have been established by prescription, implied dedication, custom, or other common law principles. Although some statutory provisions address the issue, the provisions put the entire burden on local governments to identify and to protect beach access. Local governments do not have the resources to carry out the task and often lack economic incentives to enforce the provisions conscientiously. In fact, in some cases a local government may be the culprit. A clear cause of action for obstruction of legally established beach access, and citizen standing to enforce beach-access rights, is needed to assure continued access for Florida's citizens and visitors.

Recommendations: The legislature should create a cause of action for the removal of obstructions that impair access to beaches where members of the public have created an easement by legal means. DNR, the Attorney General, local governments, and *affected persons* should have standing to enforce the statute. The legislature should also consider comprehensive beach-access legislation based on the Beach Access Advisory Committee report. In addition, citizens should have standing to enforce the beach-access protection requirements of section 161.55(6) of the Florida Statutes.

XII. MARINE EDUCATION AND RESEARCH

In 1985, Florida passed landmark growth management legislation, largely as a result of a ground swell of public opinion that Florida's tremendous growth must be managed to preserve the state's quality of life. Public education concerning coastal and ocean issues is equally important to assure public awareness of problems and potentials for ocean resources and to develop public support for resource management initiatives.

The great variety and number of ocean uses and ocean users puts tremendous stress on management systems. Management of scarce or overutilized resources often means making difficult policy decisions. To assure that Florida's resources are conserved and managed in the best ways possible and to provide substantive bases for difficult management decisions, the best scientific information must be available.

A. Marine Education

Statewide, there are several environmental education programs and opportunities offered by public schools, private and public universities, and private organizations.

1. Primary and Secondary Education Programs

The Florida Environmental Education Act was passed in 1986 to stimulate statewide appreciation and responsibility for the environ-

ment.⁶³² The Act is a legislative directive to the Florida Commissioner of Education to disseminate materials and to develop activities to educate students, teachers, and administrators on the environment. Environmental education is necessary to ensure an understanding of the relationships among natural resources, human activities, and the quality of life. The state education system has developed an environmental education program which includes marine education elements. As a result, environmental education has been integrated into the general curriculum of all public school grades.

The Florida Council on Comprehensive Environmental Education was created as part of the state's efforts to organize and coordinate a statewide environmental education program.⁶³³ In 1986 the Council, serving as an advisory board to the Commissioner of Education, reviewed and evaluated existing environmental programs operated by nonprofit organizations, private industry, and state agencies to develop a comprehensive statewide environmental education plan.⁶³⁴ The comprehensive plan, completed in March 1987, recommended development of a program that would educate both Floridians and visitors about the state's environmental systems. The plan also called for the integration of environmental education into existing curricula, environmental education training for teachers, a mechanism for cooperation with state agencies, and a clearinghouse for environmental education materials.⁶³⁵

In 1989, the legislature created the Office of Environmental Education within the Office of the Commissioner of Education to maintain an Environmental Education Information Resource System and to report to the Governor and legislature on the status of environmental education activities.⁶³⁶ An Advisory Council on Environmental Education was also established to advise the legislature, and the Governor and Cabinet, and to make recommendations concerning environmental education for visitors and residents who have little contact with the public education system.⁶³⁷ The Council recommended a priority list of projects to be funded through the newly created Save Our State Environmental Education Trust Fund,⁶³⁸ a funding source for pro-

632. See FLA. STAT. § 229.8055 (1989).

633. See *id.*; FLA. ADMIN. CODE ANN. r. 6A-10.020 (1974).

634. FLORIDA COUNCIL ON COMPREHENSIVE ENVIRONMENTAL EDUCATION, STATUS REPORT ON ENVIRONMENTAL EDUCATION (Jan. 1987).

635. See FLORIDA COUNCIL ON COMPREHENSIVE ENVIRONMENTAL EDUCATION, 1989 STATUS REPORT ON ENVIRONMENTAL EDUCATION 6 (Mar. 1989).

636. See FLA. STAT. § 229.8056 (1989).

637. *Id.* § 299.8058.

638. *Id.* § 229.8058(9)(c).

grams providing "comprehensive, coordinated environmental education to all residents and visitors in this state, with the ultimate goal of establishing an integrated approach to the conservation of all natural environments."⁶³⁹

Encompassed in the general field of environmental education are marine education-related studies. State agencies have been active in coordinating with school systems to develop curriculum materials in this area. The Hillsborough County Public Schools, Office of Environmental Education, for example, prepared an interdisciplinary study unit for sixth-grade students on "The Estuary" with financial and research assistance from the Florida Department of Environmental Regulation, Office of Coastal Management, and the Florida Department of Natural Resources, Bureau of Marine Research. Other counties have developed similar curricula materials under the Department of Education's environmental education grants. For example, Wakulla County's seventh-grade students have a Florida Marine Ecology Program and Franklin County's ninth-grade classes have a special Marine Science Program.

2. College and University Education Programs

All of Florida's higher-education institutions, which include two-year, four-year, and graduate programs, offer courses in marine-related studies. Some institutions offer specific academic programs in oceanography and marine biology. A number of institutions have their own vessels or laboratories to conduct marine support research, while others offer only a few marine-related courses such as biology and oceanography.⁶⁴⁰

Graduate programs are offered by several universities. The University of Central Florida offers a Masters of Science (M.S.) degree in biological sciences.⁶⁴¹ The Florida Institute of Technology offers, among others, an M.S. degree in coastal zone management and Ph.D. degrees in bio-environmental and physical oceanography and marine biology.⁶⁴² Florida State University offers M.S. and Ph.D. degrees in oceanography.⁶⁴³ At the University of Miami, M.S. and Ph.D. degrees

639. *Id.* § 229.8062(1).

640. See MARINE EDUCATION AND RESEARCH ORGANIZATIONS IN FLORIDA 1-30 (Sea Grant Extension Bulletin No. 3, Mar. 1984) [hereinafter MARINE EDUCATION]. For a complete listing and discussion of marine-related university programs in Florida, see W. SEAMAN, STUDENT GUIDE TO MARINE DEGREE PROGRAMS IN FLORIDA UNIVERSITIES (Sea Grant Extension Fact Sheet No. 9, 1989).

641. MARINE EDUCATION, *supra* note 640, at 3.

642. *Id.* at 8.

643. *Id.* at 12.

can be obtained in several marine science fields. Majors are offered in marine biological science, including fishery science; marine geology and geophysics; physical oceanography; and applied marine science.⁶⁴⁴ The University of Florida's Department of Fisheries and Aquaculture offers both M.S. and Ph.D. degrees with majors in fisheries, biology, and aquaculture. The University of Florida's Zoology Department also offers courses in marine biology, such as marine ecology and biology of marine animals. M.S. and Ph.D. degrees are available in zoology, as well as in science.⁶⁴⁵

The Florida Atlantic University Pine Jog Environmental Sciences Center is a unique institution that serves as an environmental education center for both children and adults. However, its primary function is to teach field-oriented ecology to children in the first through twelfth grades. Pine Jog is also used as a resource and support facility by college students and the general public.⁶⁴⁶

Some institutions have community involvement programs. For example, the Hillsborough Community College's Division of Community Service, Environmental Studies Center, in Tampa sponsors teachers' workshops, conducts marine ecology slide presentations for civic and community groups, and sponsors the Annual Conference on Wetlands Restoration and Creation.⁶⁴⁷

3. *Private and Public Programs*

In addition to the range of environmental programs offered by schools and universities, private and public institutions focus on marine education. The Associated Marine Institute (AMI) is a nonprofit youth organization offering instruction in the areas of fisheries, aquaculture, navigation, coastal planning, erosion, diving, oceanography, and biology for delinquents placed under the Florida Department of Health and Rehabilitative Services' supervision.⁶⁴⁸ The Institute's special training program "uses the mystique of the ocean to motivate juvenile delinquents. Captains, diving instructors[,] ocean science instructors, [and] educators . . . work with the [students] to improve their self-esteem, employability skills, vocational skills and education."⁶⁴⁹ Another facet of the program employs the students in environmentally oriented projects such as nursery-growing of salt-tolerant

644. *Id.* at 17.

645. *See id.* at 11.

646. *Id.* at 6.

647. *Id.* at 14.

648. *Id.* at 39. There are nine AMI's statewide.

649. *Id.*

and freshwater wetland plant species, revegetation, artificial reef construction, and vegetation surveys.⁶⁵⁰

The Florida Marine Science Education Association is a private organization that works to improve marine science education. The Association's members are involved in some facet of marine science education, either as primary or secondary school teachers, junior college teachers, marine advisory personnel, commercial park personnel, or scout leaders. The Association believes that expanding marine educators' knowledge and improving available resource materials will extend awareness and knowledge of the marine community.⁶⁵¹

Several other public and private organizations provide marine education. For example, the Florida Institute of Oceanography has an extensive education and training program for both teachers and students.⁶⁵² The International Oceanographic Foundation in Virginia Key operates the Planet Ocean, a science museum. This museum is open to the public and is a particularly important resource to area school groups.⁶⁵³ Another learning center is the Marine Science Education Center, which is visited by thousands of students each year to study aquaculture, seafood technology, navigation, coastal planning, diving, oceanography, and photography. The Center has a wet lab and a wave tank, as well as a 75,000-gallon viewing tank.⁶⁵⁴ The Marine Training Program in Key West is involved in commercial-vessel and fishing training for high school and adult education students.⁶⁵⁵ The Museum of Science, Inc., in Miami teaches students about the local marine environment while they wade, snorkel, and scuba dive.⁶⁵⁶ Outdoor classroom studies of marine and terrestrial environments are conducted at the Newfound Harbor Marine Institute in Big Pine Key. Instructional facilities include wet and dry science laboratories and a museum.⁶⁵⁷ Other public programs include the DNR Estuarine Research Reserve's education program in Apalachicola and Rookery Bay, as well as the Aquatic Preserve outreach program in the Indian River Lagoon. Also, 4-H has a marine science section which prepares educational booklets for children and sponsors a marine ecology judging event.

Issue: Inadequacy of marine environmental education. Despite the

650. *Id.*

651. *Id.* at 40.

652. *See id.* at 33-34.

653. *Id.* at 41.

654. *Id.* at 42.

655. *Id.* at 43.

656. *Id.* at 44.

657. *Id.* at 45.

fact that the state boasts a number of excellent local programs, the level of marine education in grades K-12 is still extremely inadequate. Although curricular materials are available, there is a shortage of teachers trained in marine and environmental education. Further, school curricula are so crowded that new courses are often not an option. Unfortunately, teachers are not trained or prepared to incorporate marine environmental education into existing courses either.

Recommendation: The state needs to assume leadership in integrating marine environmental education into Florida's schools. Designing curricula materials, making them broadly available, and training teachers should be priorities.

Issue: Marine and coastal programs in social science and policy. Marine science-related courses, programs, and degrees are widely available in the state. The needs of both students and the state seem to be sufficiently addressed in the "hard science" areas. However, very few courses exist to prepare students for the social, socioeconomic, and policy issues the state must address in management of its coasts and waters.

Recommendation: The state should encourage the development of programs in coastal management and related areas at the college levels.

Note: The legislature enhanced the environmental education program in the state in 1989 by creating components in the legislature (Advisory Council on Environmental Education), the Executive Office of the Governor, and DNR. The legislation also created the Save Our State Environmental Education Trust Fund. See FLA. STAT. §§ 229.8058, 229.8062 (1989). The programs and trust fund will be funded by revenues from saltwater recreational fishing licenses, the Florida Coastal Protection Trust Fund, agencies, and private organizations.

B. Marine Research

Just as marine education is necessary to instill an awareness of our ocean and coastal resources, research is necessary to manage, protect, and conserve Florida's marine plants, animals, and habitats properly. Both state and federal agencies and organizations are involved in research and development of marine-related activities.

1. Department of Natural Resources

At the state level, the major marine research participant is the former Bureau of Marine Research, Division of Marine Resources, in the

Department of Natural Resources. Recently, the bureau was "reorganized" into the Florida Marine Research Institute to facilitate procurement of grants and professional assistance.⁶⁵⁸ The Institute is responsible for conducting "high-quality marine research on which management decisions can be based."⁶⁵⁹ In addition, the Division's saltwater fisheries management program specifies that the Division has a duty "to conduct scientific, economic, and other studies and research." All of the Division's duties and operations "shall be directed to the broad objective of managing such resources in the interest of all people of the state."⁶⁶⁰

The Institute is the only state marine-research organization focused on providing information for the state to make informed decisions on protecting the marine environment and, specifically, marine fisheries. To address the management needs of fisheries, habitat, and nongame wildlife, marine research at the Institute's laboratories includes studies in the following areas: fishery stock assessments; fisheries statistics; life history studies; coastal hydrography and coral reefs; culture and rearing of marine animals; habitat characterization and restoration; benthic community studies; endangered and threatened species; and marine animal health and contamination.⁶⁶¹

The Marine Fisheries Commission, also within the Department of Natural Resources, is responsible for prioritizing the department's marine fisheries research activities and for administering the Marine Fisheries Commission Trust Fund.⁶⁶² Fees collected for noncommercial saltwater fishing licenses⁶⁶³ and for harvesting tarpon⁶⁶⁴ are deposited into the trust fund. License revenues from tarpon tags, however, must be used for research relating to "tarpon management."⁶⁶⁵

Both the Marine Fisheries Commission Trust Fund and the Division of Marine Resources receive proceeds from vessel licensing revenue.⁶⁶⁶ Revenues are also available from saltwater products licenses.⁶⁶⁷ The Division's funds are used for "marine research and statistics development."⁶⁶⁸ Likewise, revenues accruing to the Marine Fisheries Com-

658. See FLA. STAT. § 370.02(2) (1989).

659. *Id.*

660. *Id.*

661. See generally FLORIDA MARINE RESEARCH INSTITUTE, DIVISION OF MARINE RESOURCES, FLORIDA DEP'T OF NATURAL RESOURCES, RESEARCH PLAN 1989-1994 (1989).

662. See FLA. STAT. §§ 370.026, 370.027, 370.029 (1989).

663. *Id.* §§ 370.0605, 370.0608(1).

664. *Id.* § 370.062.

665. *Id.*

666. *Id.* § 327.28(3)(a),(d).

667. *Id.* § 370.06(8).

668. *Id.* § 327.28(3)(d).

mission Trust Fund are used "to provide for the award of funds to marine research institutions in this state for the purposes of enabling such institutions to conduct worthy marine research projects."⁶⁶⁹ Vessel licensing revenues are also available to DNR for the Manatee Protection Program.⁶⁷⁰

In 1988, the Auditor General reported on DNR's Marine Research Program.⁶⁷¹ The report criticized DNR for directing its research efforts toward studying fish. This focus, however, was due primarily to the priorities established for the Bureau by the Marine Fisheries Commission as required by law. The Auditor General concluded that no system for developing statewide marine research priorities existed:

The Department has not taken steps to ensure that the marine research information needs all of its divisions are also considered in developing marine research priorities. Furthermore, no system exists for identifying the research needed by other State marine resource managers and developing Statewide marine research priorities. Consequently, it is possible that State-supported marine research will not address the issues most critical to the preservation of Florida's saltwater fisheries.⁶⁷²

The Auditor General recommended that DNR ensure that the marine research information needs of all its divisions are provided to the bureau so that it can consider those needs when it develops its budget request and five-year research plan. The Auditor General also recommended that the legislature (1) "[e]stablish a formal coordinating mechanism such as an interagency council to identify marine research most needed by State agencies with marine resource management responsibilities;" (2) "[r]equire State agencies, when developing budget requests, to consider the research priorities identified by the council;" and (3) "[c]onsider providing the Governor's Office with funds it can use to contract for work on the top research priorities identified by the coordinating council."⁶⁷³ Currently the Marine Fisheries Commission and DNR are responsible for marine research issue-identification activities.

669. *Id.* § 370.029.

670. *See id.* § 327.28(1).

671. OFFICE OF THE AUDITOR GENERAL, STATE OF FLORIDA, PERFORMANCE AUDIT OF THE STATE'S MARINE RESEARCH PROGRAM ADMINISTERED BY THE DEP'T OF NATURAL RESOURCES (Report No. 11002, Mar. 22, 1988).

672. *Id.* at vii.

673. *Id.* at ix.

2. Other State Programs

A number of the state universities are involved in marine research activities. The Department of Marine Science at the University of South Florida created the Center for Nearshore Marine Science to address the environmental problems of Florida's waters, from estuaries to beaches to the continental shelf. Its purposes are to conduct research; to design and implement environmental monitoring; to have specialists provide information and guidance on state and local problems; and to provide courses, seminars, panels, and symposia to educate laypersons.⁶⁷⁴ The University of Miami's Rosenstiel School of Marine and Atmospheric Science is one of the United States' four top oceanographic institutions.⁶⁷⁵ The Center for Aquatic Research and Resources Management at the Florida State University conducts basic and applied aquatic research and manages freshwater and estuarine reserves. It is a grant-funded organization. Other universities and university-based organizations include the Edward Ball Marine Laboratory at the Florida State University College of Geology; Jacksonville University; and Florida International University.⁶⁷⁶

Some of Florida's universities also host special marine education and research programs. For example, the Florida Institute of Oceanography (FIO), located in St. Petersburg, "serves as a focus for the pursuit of oceanographic education and research in the State."⁶⁷⁷ The Institute is composed of each of the state universities, the Florida Department of Natural Resources, the Florida Marine Research Institute, the Florida Sea Grant College, and the University of Miami Rosenstiel School of Marine and Atmospheric Science. Some of the Institute's state-supported research and education programs are conducted on the *R/V Bellows*, a vessel owned and operated by FIO, which is at sea approximately 200 days each year. The Institute's marine science disciplines include oceanography, ocean engineering, and ecology.⁶⁷⁸ In addition, both the Policy Studies Clinic at the Florida State University College of Law, and the Center for Governmental Responsibility at the University of Florida Law School have been involved in coastal law and policy research.

674. Letter from Larry Doyle, Director of the Center for Nearshore Marine Science, to Gypsy Bailey, Policy Studies Clinic of the Florida State University College of Law (May 9, 1988).

675. MARINE EDUCATION, *supra* note 640, at 17.

676. See W. SEAMAN, *supra* note 640, at 10-11.

677. *Id.* at 33.

678. *Id.* at 33-34.

3. *The Florida Sea Grant College Program*

An important educational and research program is Florida's Sea Grant College, created in 1972 as a part of the congressionally established National Sea Grant College Program. The National Sea Grant College Program Act⁶⁷⁹ charged the Office of Sea Grant of the National Oceanic and Atmospheric Administration within the United States Department of Commerce with "promoting sound economic development and appropriate use of the nation's marine resources through marine research, education, and advisory service."⁶⁸⁰ The Florida Sea Grant College Program is part of the national network of university-based marine programs that conduct research, education, and extension efforts focusing on living marine resources, coastal processes and development, marine industries, education, and sea grant extension. The Florida Sea Grant Program administers marine-related grants and education programs. The Program comprises all of the state universities, two private universities, and two nonprofit research marine laboratories, and has worked with marine industries, citizens, and the government.⁶⁸¹

One of the goals of the program is to make the research findings widely available to ensure awareness of the need to use the state's marine resources wisely. This is accomplished through the Sea Grant Extension Program, administered in cooperation with the Institute for Food and Agricultural Sciences, Florida Cooperative Extension Service, University of Florida. Sea grant extension agents, located in coastal county extension offices, university campuses, and other locations, serve as the Sea Grant's technology transfer arm.⁶⁸²

Florida Sea Grant is funded by a number of sources including the federal government, the state legislature, county governments, and industry. The program's long-range plan for 1988 through 1993 gives priority to certain areas of future research, including aquaculture, beaches and shores, coastal construction and ocean engineering, coastal recreation and tourism, estuarine habitat productivity and restoration, fisheries, marine and coastal policy, and seafood technology.⁶⁸³

679. 33 U.S.C. §§ 1121-1131 (1982 & Supp. V 1987).

680. FLORIDA SEA GRANT EXTENSION PROGRAM, DIRECTORY: FLORIDA SEA GRANT COLLEGE PROGRAM 1987 & 1988, at 1 (Sea Grant Extension Bulletin No. 1, 1987).

681. *Id.* at 3-20.

682. *Id.* at 3-4.

683. See FLORIDA SEA GRANT COLLEGE PROGRAM, LONG-RANGE PLAN 1989-1993: OPPORTUNITIES FOR FACULTY LEADERSHIP IN STATEWIDE MARINE AND COASTAL RESEARCH, EDUCATION, AND EXTENSION IN FLORIDA (n.d.).

4. *Private Research Institutions*

Complementing the roles of the public educational institutions and state agencies are several nonprofit and private organizations involved in advancing both basic and applied knowledge of the state's marine and coastal resources.⁶⁸⁴ For example, a major research contributor is the Harbor Branch Oceanographic Institution (HBOI), an oceanographic research facility in Fort Pierce. HBOI's research is widely available to the public through publications.⁶⁸⁵ Another important institution is the Mote Marine Laboratory in Sarasota. Mote conducts year-round research in several areas including biomedical research, environmental assessment, bioassays, red tide research, and fate and effects of toxic organic chemicals.⁶⁸⁶ The Aqualife Research Corporation specializes in the development of techniques for the culture of marine tropical fish.⁶⁸⁷ The Columbia Research Corporation provides support in the areas of diving and salvage, mine countermeasures, and navigation.⁶⁸⁸ Aquatic toxicological research in freshwater, estuarine, and marine environments is conducted by the EGG, Bionomics Marine Research Laboratory in Pensacola.⁶⁸⁹ The Florida Oceanographic Society is involved in the study of estuary, inlet, and near coastal reef systems.⁶⁹⁰ Research is also conducted by the Gulfarium marine show aquarium, Marineland of Florida oceanariums, Ocean World marine park, Sea World of Florida entertainment complex, and the Living Seas Pavilion at EPCOT Center.⁶⁹¹

5. *Regional and International Marine Research Issues*

Unlike the rest of the continental United States, Florida is uniquely a part of the Caribbean region. The state and its Caribbean neighbors share many of the same environmental problems, and their ecologies are closely related.⁶⁹² Research and management strategies that take a regional approach to environmental issues are clearly needed.

Caribbean countries have created a framework for addressing environmental problems from a regional perspective. Under the United

684. See MARINE EDUCATION, *supra* note 640, at 59-80.

685. See, e.g., HARBOR BRANCH OCEANOGRAPHIC INSTITUTION, INC., 1987 ANNUAL REPORT (Apr. 14, 1988).

686. MARINE EDUCATION, *supra* note 640, at 74.

687. *Id.* at 61.

688. *Id.* at 63.

689. *Id.* at 64.

690. *Id.* at 65.

691. See *id.* at 69-77.

692. For example, Florida's commercially important lobster fishery is totally dependent on Caribbean habitat for the early development of the species.

Nations Environment Programme's Regional Seas Program for the Caribbean, the Caribbean Action Plan was adopted in 1981 by twenty-two countries. The Action Plan is intended to assist governments in the region in minimizing environmental problems and in developing sound environmental management strategies on a regional basis.⁶⁹³

As a legal framework, the Action Plan nations developed the 1983 Cartagena de Indias Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region and Protocol concerning Co-operation in Combatting Oil Spills in the Wider Caribbean Region, commonly called the Cartagena Convention.⁶⁹⁴ The parties to the Convention are considering extending the oil spill provisions to other hazardous substances. In addition, other protocols are being considered for specially protected areas and species, and for land-based pollution sources.

The parties to the Action Plan and the Cartagena Convention are currently reevaluating and prioritizing regional environmental problems. There is a great need for research on coastal and marine systems of the area to provide a basis for international agreements to protect and manage the environment. The Caribbean Trust Fund has been created to fund activities of the Action Plan and meetings of parties to the plan and convention. The United States, although a party to both the Plan and Convention, is not currently contributing to the fund.⁶⁹⁵

6. *Funding for Marine Research*

Marine research activities in the state are funded by several sources. No resource exists, however, for identifying all the sources of funding for marine research in the state. The primary funding sources include the National Science Foundation, Sea Grant, the United States Office of Naval Research, and the State of Florida. Other funding sources are the Environmental Protection Agency, the Department of Interior, the United States Army Corps of Engineers, and the National Oceanic and Atmospheric Administration of the United States Department of Commerce.

In general, managers and scientists believe that the level of funding is inadequate for Florida's needs. The most likely source of additional

693. See CARIBBEAN REGIONAL CO-ORDINATING UNIT, UNITED NATIONS ENVIRONMENT PROGRAMME ACTION PLAN FOR THE CARIBBEAN ENVIRONMENT PROGRAMME (Oct. 1987) [hereinafter ACTION PLAN].

694. Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region and Protocol concerning Co-operation in Combatting Oil Spills in the Wider Caribbean Region, *adopted* March 24, 1983, 22 I.L.M. 221 (1983).

695. See ACTION PLAN, *supra* note 693, at 18-19.

funding for the future, particularly for fisheries research, is through saltwater fishing licenses.⁶⁹⁶ It has been projected that saltwater recreational fishing licenses will generate \$18.8 million during the first year and \$15.2 million during the second year that they are required.⁶⁹⁷

Issue: Florida as a part of the Caribbean Region. Florida is uniquely situated with respect to the Caribbean region. Aspects of the health of Florida's marine resources and coastal environment are affected by, and in some cases dependent on, the environmental management regimes of the Caribbean. Florida can greatly benefit from Caribbean regional initiatives and has expertise that can contribute to regional efforts. However, better consultative and collaborative mechanisms must be established.

Recommendations: Florida should work and consult with the United States Department of State in the government's negotiations and participation in Caribbean Action Plan and Cartagena Convention activities. The state should also encourage the federal government to contribute to the funding of research activities and should encourage Florida's research institutions to participate in cooperative efforts. Existing programs that link Florida and the Caribbean, such as the Caribbean Basin Initiative, DNR's participation as a member of the Association of Marine Laboratories of the Caribbean, and the newly created Caribbean Law Institute at the Florida State University and the University of the West Indies, should be explored as means of establishing relationships in the marine science and policy fields.

Note: The Caribbean Law Institute is currently developing a project in collaboration with the CARICOM Consultative Forum, the United States Agency for International Development, and the United Nations Environmental Program to survey, compare, and analyze environmental laws in the Caribbean countries. The project is the first step in developing model environmental legislation.

Issue: A comprehensive research program to coordinate federal and state funding and research. Marine-research dollars are scarce. Even state agencies such as DNR must depend on outside grants for research funding. More adequate funding for marine research is a priority. Moreover, research currently funded must address the needs of

696. Telephone interview with William Seaman, Associate Director of the Florida Sea Grant College (Oct. 10, 1988).

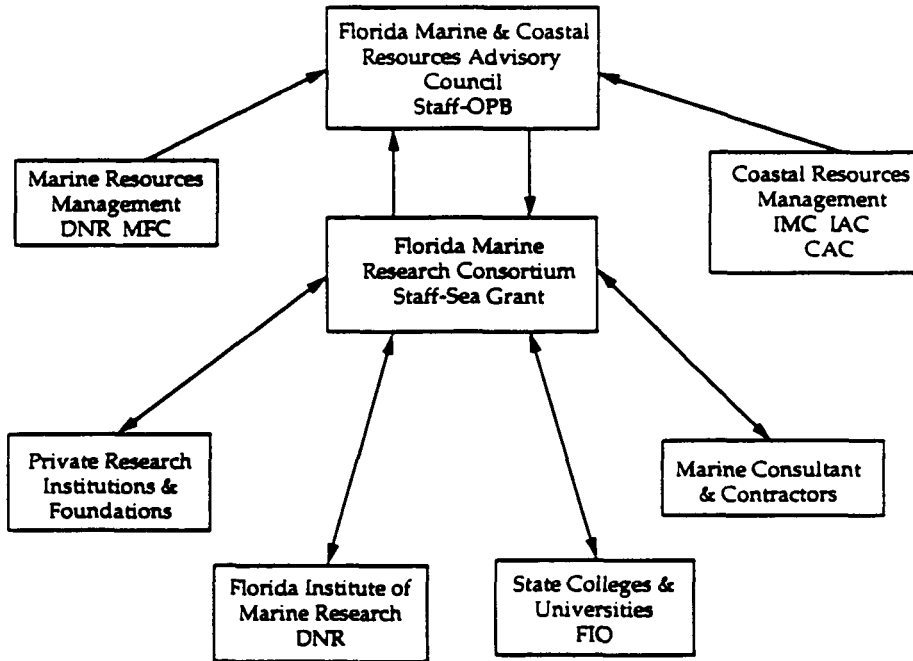
697. Telephone interview with Paul Johnson, Environmental Planning Unit of the Executive Office of the Governor (Oct. 13, 1988).

the state's managers and policymakers.

Recommendation: Figure 4 illustrates a model for marine research planning and coordination in Florida. The Florida Marine and Coastal Resources Advisory Council would have the responsibility for establishing the state's research needs and priorities. The Council would be composed of the chairs of the House and Senate Natural Resources Committees, the heads or designees of the Governor's Office, the Department of Natural Resources (DNR), the Department of Environmental Regulation, and the Department of Agriculture; the Executive Director of the Marine Fisheries Commission (MFC); and gubernatorially appointed representatives of ports, the marine industry, and marine conservation. The Council would be staffed by the Governor's Office of Planning and Budgeting. Input concerning marine resource research needs would come primarily from DNR and the MFC. The Interagency Management Committee, the Interagency Advisory Committee, and the Coastal Resources Citizens Advisory Committee would provide information on coastal research needs. In addition to establishing research needs and priorities for the Marine Research Consortium, these recommendations would also be provided to all state agencies to aid in guiding their research and funding priorities. A Marine Research Consortium would be made up of representatives of DNR's Institute of Marine Research, private research institutions and foundations, state universities and FIO, and private consultants and contractors. It would be staffed by Sea Grant and funded by the legislature. This group would be responsible for the administration of research programs based on the Council's recommendations. In addition to staffing the Consortium, Sea Grant would be responsible for disseminating information generated by the research to the public, educating the public, and reporting to the Council on the progress of meeting research priorities.

Note: The saltwater recreational fishing license required by legislation in 1989 will provide a much-needed source of funding for marine research. Over half of the revenues generated are dedicated to marine research and fisheries enhancement. DNR has taken advantage of the new resources in proposing a far-reaching research plan for 1989 through 1994. The plan targets marine fisheries from a socioeconomic as well as a scientific approach and highlights broad marine ecology issues. The plan also considers long-term ecosystems management strategies and information development and dissemination.

FIGURE 4. FLORIDA MARINE RESEARCH MODEL



Issue: Institutions dedicated to marine and coastal law and policy research. Although the state has numerous public and private scientific institutions dealing with virtually every facet of marine science research, no institution or program exists for marine and coastal policy or legal research. Many states have set up and provided continuing funding for coastal and ocean law programs through Sea Grant. Other states have set up programs within the law school curricula, even creating programs for advanced law degrees in the field. Both the Policy Studies Clinic at the Florida State University College of Law and the Center for Governmental Responsibility at the University of Florida Law School have done work in these areas. However, no marine and coastal program at either college has been ongoing, and the prior research has not been coordinated. Both colleges have personnel that can contribute significantly to marine and coastal policy development.

Recommendation: A Florida Ocean and Coastal Policy Studies Program should be created and funded within the Sea Grant College Program and should include the Florida State University and the University of Florida.

XIII. CONCLUSION

The nation and the coastal states are at the brink of a period of enormous change in ocean policy and in the federal/state relationship in the offshore area. The most recent step in this area—the federal extension of the territorial sea to twelve miles—has contributed to the already confused domestic situation. A void has now been created concerning jurisdiction, application of United States laws, and the interests of coastal states in areas from three miles to twelve miles offshore. Coastal states must be closely involved and must be effective participants in the debate, policy development, and legislation necessary to fill this void.

Coastal states, including Florida, must be prepared to participate in the development of a national ocean policy by clarifying and developing state ocean policy. This article is intended to be a first step in the process of development of a comprehensive state ocean policy for Florida. Effective participation in federal/state dialogues is not, however, the only or even the most important reason for the state to focus on ocean policy development. The management of the state's resources requires further definition and coordination of state policy.

This article has provided an overview and summary of Florida's fragmented laws, management, and policies dealing with ocean issues, and has provided background and analysis necessary for policy synthesis and development. Because of the broad scope of issues relating to the area seaward of the beach, this article could not focus on the many upland development and freshwater management issues that also affect Florida's estuaries and territorial seas. In identifying issues and making recommendations, this article has discussed matters that, in some instances, appear to be short-term concerns of managers and regulators. In sum, these issues are significant, but, obviously, comprehensive ocean policy development must take a broad perspective.

Overall consideration of both short-term and long-term needs for ocean resource management and policy development reveals common problems. First, intergovernmental and interagency cooperation and coordination must be enhanced. This may be accomplished by establishing better mechanisms, ensuring that existing mechanisms are used, and clarifying jurisdictional issues and applicable policies. Second, and more important, is the need for information to develop and implement ocean policy. The management of 6.7 million acres of the state's offshore lands is an ambitious task. It cannot be accomplished without a sound foundation of marine research and education in the state. It is also necessary that the research and information be accessible to policymakers, managers, and regulators. Both the nation and the State of Florida have a history of environmental mistakes when

resource management decisions have been made with inadequate information. We are only now beginning to understand the long-term and indirect effects of many of these decisions. The political, economic, and legal reality is that not knowing or not fully understanding the potential effects of an activity may not be sufficient justification for prohibiting or strictly regulating the activity. The state must have the information necessary to develop sound policy to manage the state's ocean resources and to implement that policy through scientifically justifiable measures. Florida's ocean future depends on education to assure an understanding of our relationship to our seas, and research to provide the knowledge to preserve that relationship.

XIV. GLOSSARY OF ACRONYMS

AICC	- Aquaculture Interagency Coordinating Council.
AMI	- Associated Marine Institute.
ARC	- Aquaculture Review Council.
BAAC	- Beach Access Advisory Committee.
Board of Trustees	- The Board of Trustees of the Internal Improvement Trust Fund.
CAC	- Coastal Resources Citizens Advisory Committee.
CERCLA	- Comprehensive Environmental Response, Compensation, and Liability Act.
Clean Water Act	- Federal Water Pollution Control Act.
Corps of Engineers	- United States Army Corps of Engineers.
CZMA	- Coastal Zone Management Act.
DACS	- Department of Agriculture and Consumer Services.
DER	- Department of Environmental Regulation.
DNR	- Department of Natural Resources.
DOC	- Department of Commerce.
DOI	- United States Department of Interior.
EA	- Environmental Assessment.
EIS	- Environmental Impact Statement.
EOG	- Executive Office of the Governor.
EPA	- Environment Protection Agency.
FAP	- Florida Aquaculture Plan.
FCMP	- Florida Coastal Management Program.
FCZ	- Federal Fishery Conservation Zone.
FIO	- Florida Institute of Oceanography.

FMC	- Fisheries Management Council.
GFWFC	- Game and Fresh Water Fish Commission.
IAC	- Interagency Advisory Committee.
IGCS	- Intergovernmental Coordination Section.
IMC	- Interagency Management Committee.
MARPOL	- International Convention for the Prevention of Pollution By Ships.
MFC	- Marine Fisheries Commission.
MFCMA	- Magnuson Fishery Conservation and Management Act.
MOU	- Memorandum of Understanding.
MPRSA	- Marine Protection, Research, and Sanctuaries Act.
NEPA	- National Environmental Policy Act.
NMFS	- National Marine Fisheries Service.
NOAA	- National Oceanic and Atmospheric Administration.
NPDES	- National Pollutant Discharge Elimination System.
OCRM	- Office of Ocean and Coastal Resource Management.
OCS	- Outer Continental Shelf.
OCSLA	- Outer Continental Shelf Lands Act.
OFW	- Outstanding Florida Waters.
OPB	- Office of Planning and Budgeting.
POTW	- Publicly-Owned Treatment Works.
SCH	- State Clearinghouse.
SWIM	- Surface Waters Improvement and Management Program.
SWUP	- State Water Use Plan.
TED	- Turtle Excluding Devices.
USCG	- United States Coast Guard.
WMD	- Water Management Districts.