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Professor John Norton Moore
University of Virginia School of Law
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Limits in the Seas

No. 112

United States Responses to Excessive National Maritime Claims
This paper is one of a series issued by the Office of Ocean Affairs, Bureau of Oceans and International Environmental and Scientific Affairs in the Department of State. The aim of the series is to provide information on national maritime claims by coastal States. It is intended for background use only. This paper reflects the position of the United States towards excessive claims by coastal States which are inconsistent with international law.

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LIMITS IN THE SEAS

No. 112

UNITED STATES RESPONSES TO EXCESSIVE NATIONAL MARITIME CLAIMS

March 9, 1992

Office of Ocean Affairs
Bureau of Oceans and International Environmental and Scientific Affairs
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INTRODUCTION

The purpose of this study is to publicize efforts undertaken by the United States Government to preserve and enhance navigation freedoms worldwide. Particularly, this study will focus on the U.S. Freedom of Navigation (FON) Program, begun in 1979 and designed to be a peaceful exercise of the rights and freedoms of navigation and overflight recognized under international law. United States policy is to:

accept and act in accordance with the balance of interests relating to traditional uses of the oceans—such as navigation and overflight. In this respect, the United States will recognize the rights of other states in the waters off their coasts, as reflected in the Convention, so long as the rights and freedoms of the United States and others under international law are recognized by such coastal states.

In addition, United States policy is to:

exercise and assert its navigation and overflight rights and freedoms on a worldwide basis in a manner that is consistent with the balance of interests reflected in the convention. The United States will not, however, acquiesce in unilateral acts of other states designed to restrict the rights and freedoms of the international community in navigation and overflight and other related high seas uses.

Under the FON Program the United States undertakes diplomatic action at several levels to preserve its rights under international law. It conducts bilateral consultations with many states stressing the need for and obligation of all states to adhere to customary international law, as reflected in the 1982 United Nations Convention on the Law of the Sea (LOS Convention). When appropriate, the United States delivers formal diplomatic protests addressing specific maritime claims that are inconsistent with international law. Since 1948, the United States has filed more than 140 such protests, including more than 110 since the FON Program began. Portions of these notes are reprinted, or cited, in this study.

Operations by U.S. naval and air forces designed to emphasize internationally recognized navigational rights and freedoms complement U.S. diplomatic efforts. These assertions of rights and freedoms tangibly exhibit U.S. determination not to acquiesce in excessive claims to maritime jurisdiction by other States. Although some operations receive public scrutiny (such as those that have occurred in the Black Sea and in the Gulf of Sidra), most do not. Since 1979, U.S. military ships and aircraft have exercised their rights and freedoms in all oceans against objectionable claims of more than 35 countries at the rate of some 30-40 per year.

Two caveats should be noted in regard to this study. First, it does not purport to discuss all


2 The Los Convention was concluded December 10, 1982, and will enter into force one year following the deposit of the 60th instrument of ratification with the United Nations. As of February 15, 1992, 51 states had deposited their instruments of ratification. See Annex II for a list of states that have ratified the Convention.
coastal state maritime claims that may be inconsistent with the law of the sea, nor does it set out all actions taken by the United States (and other States) in response to these excessive claims. Thus, the failure to mention a particular claim should not be construed as acceptance of that claim by the United States.

Second, this paper does not attempt to identify the overwhelming practice of States which conforms to the provisions of the LOS Convention. Although the discussion which follows focuses on excessive claims, the fact remains that the general practice by States reflects acceptance as customary international law of the non-seabed parts of the LOS Convention.

IDENTIFICATION OF EXCESSIVE MARITIME CLAIMS

Claims by coastal states to sovereignty, sovereign rights, or jurisdiction over ocean areas that are inconsistent with the terms of the LOS Convention are, in this study, called "excessive maritime claims". They are illegal in international law. Since World War II, more than 80 coastal states have asserted various claims that threaten the rights of other states to use the oceans. These excessive maritime claims include, but are not limited to, claims inconsistent with the legal division of the ocean and related airspace reflected in the LOS Convention, such as:

- unrecognized historic water claims;
- improperly drawn baselines for measuring maritime claims;
- territorial sea claims greater than 12 miles;\(^3\)
- other claims to jurisdiction over maritime areas in excess of 12 miles, such as security zones, that purport to restrict non-resource related high seas freedoms;
- contiguous zone claims at variance with Article 33 of the LOS Convention;
- exclusive economic zone (EEZ) claims inconsistent with Part V of the LOS Convention;
- continental shelf claims not in conformance with Part VI of the LOS Convention; and
- archipelagic claims inconsistent with Part IV of the LOS Convention.

Other categories of excessive maritime claims include claims to restrict navigation and overflight rights reflected in the LOS Convention, such as:

- territorial sea claims that impose impermissible restrictions on the innocent passage of military and commercial vessels, of ships owned or operated by a state and used only on government noncommercial service, and of nuclear-powered warships (NPW) or warships and naval auxiliaries carrying nuclear weapons or specific cargoes;

\(^3\) All miles in this study, unless otherwise noted, refer to nautical miles. One nautical mile equals 1,852 meters.
- claims requiring advance notification or authorization for innocent passage of warships and naval auxiliaries through the territorial sea or EEZ or applying discriminatory requirements to such vessels;

- territorial sea claims not exceeding 12 miles that overlap straits used for international navigation and do not permit transit passage, including submerged transit of submarines, overflight of military aircraft, and surface transit of warships and naval auxiliaries (including transit in a manner of deployment consistent with the security of the forces involved), without prior notification or authorization; and

- archipelagic claims that do not permit archipelagic sea lanes passage, including submerged passage of submarines, overflight of military aircraft, and surface transit of warships and naval auxiliaries (including transit in a manner of deployment consistent with the security of the forces involved), without prior notice of authorization.

**LEGAL DIVISION OF THE OCEAN AND AIRSPACE**

**HISTORIC WATERS**

**Criteria**

To meet the international legal standard for establishing a claim to historic waters, a state must demonstrate its open, effective, long term, and continuous exercise of authority over the body of water, coupled with acquiescence by foreign states in the exercise of that authority. The United States has taken the position that an actual showing of acquiescence by foreign countries in such a claim is required, as opposed to a mere absence of opposition.\(^4\)

The United States Supreme Court has found two bodies of U.S. waters to be historic: Mississippi Sound\(^6\) and Long Island Sound.\(^8\) The supreme Court has held that certain other bodies of U.S. waters do not meet the criteria for historic waters including Cook Inlet, Alaska,\(^7\) Santa Monica Bay and San Pedro Bay, California,\(^6\) Florida Bay,\(^9\) numerous bays along the coast of Louisiana,\(^10\) Nantucket Sound, Massachusetts,\(^11\) and Block Island Sound.\(^12\)

Prior to 1958 there was no agreement on the maximum closing line distance for a juridical bay. A

---

\(^4\) 1973 *Digest of U.S. Practice in International Law* 244-45 (1974); Goldie, "Historic Bays in International Law--An Impressionistic Overview," 11 *Syracuse Journal of International Law and Commerce*, 205, 221-23, 248 & 259 (1984);


\(^7\) *United States v. Alaska*, 422 U.S. 184 (1975).


maximum 24-mile closing line rule was agreed to in the 1958 Convention on the Territorial Sea and the Contiguous Zone. Several bodies of water previously claimed by the U.S. as historic now met the requirements of a juridical bay: Chesapeake Bay (with a 12-mile entrance); and, Delaware Bay (with a 10-mile mouth). Similarly, the Gulf of Amatique, which Guatemala claimed as historic waters in 1940, now qualifies as a juridical bay, as do Samana and Neiba Bays claimed by the Dominican Republic as historic in 1952.

**Foreign Waters Considered Not to be Historic**

Table 1 lists known claims to historic waters and actions taken by the United States. The following is a description of several claims made to historic waters that have been protested by the United States.

**Argentina and Uruguay - Rio de la Plata:**

Some authorities have stated that the Rio de la Plata estuary is an historic bay (see Map 1). However, in drawing a straight line across the mouth of the estuary, the joint Declaration of the Governments of Uruguay and Argentina of 30 January 1961 did not assert an historic claim to the Rio de la Plata. Rather the declaration took into account the provisions of Article 13 of the 1958 Convention on the Territorial Sea and the contiguous Zone regarding river closing lines.

**Map 1**

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<table>
<thead>
<tr>
<th>State</th>
<th>Body of Water</th>
<th>Law &amp; Date of Claim</th>
<th>U.S. Protest</th>
<th>U.S. Assertion of Rights</th>
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<tr>
<td>Argentina</td>
<td>Rio de la Plata</td>
<td>Joint declaration w/ Uruguay, Jan. 30, 1961</td>
<td>1963</td>
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<tr>
<td>Australia</td>
<td>Anxious, Rivoli,</td>
<td>Proclamation March 31, 1967</td>
<td>1991</td>
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<td></td>
<td>Encounter, Lacepede</td>
<td>Bays</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cambodia</td>
<td>Part of Gulf of Thailand Agreement w/ Vietnam July 7, 1982</td>
<td>1987</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>Hudson Bay</td>
<td>Amendment to Fisheries Act July 13, 1906</td>
<td>1906</td>
<td></td>
</tr>
<tr>
<td>Dominican Republic</td>
<td>Samana, * Ocoa, * Neiba * Bays Escocesa &amp; Santo Domingo Bays</td>
<td>Law No. 3342, July 1952</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>Country</td>
<td>Area</td>
<td>Document Details</td>
<td>Year</td>
<td></td>
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<td>-------------------------------------------------------</td>
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<tr>
<td>Egypt</td>
<td>Bay of el Arab#</td>
<td>Embassy Note June 4, 1951</td>
<td>1951</td>
<td></td>
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<tr>
<td>Honduras</td>
<td>Constitution of 1982, art.10</td>
<td></td>
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<td>India</td>
<td>Gulf of Nammar, Palk Bay</td>
<td>Law No. 41, June 1, 1979; Agreement w/ Sri Lanka, June 28, 1974</td>
<td>1983</td>
<td></td>
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<td>Italy</td>
<td>Gulf of Taranto</td>
<td>Presidential Decree No. 816 April 26, 1977</td>
<td>1984+</td>
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<td>Kenya</td>
<td>Ungwana Bay</td>
<td>Territorial Waters Act. May 16, 1972</td>
<td></td>
<td></td>
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<tr>
<td>Libya</td>
<td>Gulf of Sidra</td>
<td>Foreign Ministry Note Verbaie; MQ/40/5/1/3325, Oct. 11, 1973</td>
<td>1974+</td>
<td>yes</td>
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<tr>
<td>Panama</td>
<td>Gulf of Panama</td>
<td>Law No. 9, Jan 30, 1956</td>
<td>1956+</td>
<td>yes</td>
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<tr>
<td>Portugal</td>
<td>Taus, Sado and associated bays</td>
<td>Decree Law 47,771; June 27, 1967</td>
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<td>Soviet Union</td>
<td>Peter the Great Bay, Laptav, Demitri, Sannikov Straits</td>
<td>Decree July 20, 1957; Aide Memoire July 21, 1964</td>
<td>1957+; 1965</td>
<td>yes</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>Palk Bay, Balk Bay, Balk Strait, Gulf of Mannar</td>
<td>Agreement w/ India June 28, 1974; Proclamation Jan. 15, 1977</td>
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<td>Thailand</td>
<td>Part of Gulf of Thailand Decree, Sept. 22, 1959</td>
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<td>1963</td>
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<td>Uruguay</td>
<td>Rio de la Plata</td>
<td>Joint declaration w/ Argentina Jan. 30, 1961</td>
<td>1987</td>
<td></td>
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<tr>
<td>Country</td>
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<td>Agreement/Action</td>
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<tr>
<td>Vietnam</td>
<td>Part of Gulf of Thailand, Gulf of Tonkin</td>
<td>Agreement w/ Cambodia July 7, 1982; Statement Nov. 12, 1982</td>
<td>1982</td>
<td>yes</td>
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@ Operational assertion of right by U.S. Naval and/or air forces of internationally recognized navigational rights and freedoms against excessive maritime claim.
* Now qualifies as a juridical bay.
+ More than one protest against this claim.
# Not maintained.
& Case pending before ICJ.
The United States protested on January 23, 1963, on the grounds that article 13 "relates to rivers which flow directly into the sea which is not the situation of the River Plate which flows into an estuary or bay".14 Also protesting this claim were the United Kingdom (On December 26, 1961), and the Netherlands (on June 26, 1962).15

Cambodia and Vietnam - Gulf of Thailand:

On July 7, 1982, Cambodia and Vietnam signed an agreement which, inter alia, made claim to a part of the Gulf of Thailand as historic waters.16 The United States protested this claim in a note to the UN Secretary General, as follows:17

Under the terms of this agreement the parties purportedly claim as historic certain waters in the Gulf of Thailand extending from the mainland to Tho Chu and Poulo Wai Islands.

As is well known under longstanding standards of customary international law and State practice, historic waters are recognized as valid only if the following prerequisites are satisfied: (a) the State asserting claims thereto has done so openly and notoriously; (b) the State has effectively exercised its authority over a long and continuous period; and (c) other States have acquiesced therein.

In the case of the historic waters claim made by the parties to the above agreement, the claim was first made internationally no earlier than July 7, 1982, less than five years ago, notwithstanding the assertion in the agreement that the waters "have for a very long time belonged to Vietnam and Kampuchea [Cambodia] due to their special geographical conditions and their important significance towards each country's national defense and economy."

The brief period of time since the claim's promulgation is insufficient to meet the second criterion for establishing a claim to historic waters, and there is no evidence of effective exercise of authority over the claimed waters by either country before or after the date of the agreement. Moreover, without commenting on the substantive merits or lack thereof attaching to the "special geographical conditions" of the waters in question and their "important significance towards each country's defense and economy," such considerations do not fulfill any of the stated customary international legal prerequisites of a valid claim to historic waters.

Finally, the United States has not acquiesced in this claim, nor can the community of States be said to have done so. Given the nature of the claim first promulgated in 1982, such a brief period of time would not permit sufficient acquiescence to mature.

14 57 American Journal of International Law, 403-04 (1963); 4 Whiteman, Digest of International Law, 342-43.
15 4 Whiteman, Digest of International Law, 343.
16 The text of this agreement can be found in FBIS Asia & Pacific, July 9, 1982, vol. IV, No. 132, pp. K3-K4.
Therefore, the United States views the historic claim to the waters in question as without foundation and reserves its rights and those of its nationals in this regard.

Thailand, Singapore, and Germany have also protested this claim.

**India and Sri Lanka - Gulf of Manaar, Palk Bay:**

By unilateral acts and by a bilateral agreement India and Sri Lanka have claimed that the Gulf of Manaar and Palk Bay are historic waters (see Map 2).

18 The United States protested this claim to India in a Note to the Indian Ministry of External Affairs in 1983.

**Italy - Gulf of Taranto:**

As part of its 1977 decree establishing straight baselines for portions of the Italian Coast, Italy for the first time claimed the Gulf of Taranto as an historic bay (see Map 3).

19 During bilateral discussions with Italian government officials in 1984, the United States stated its view that the Gulf of Taranto cannot be considered an historic bay since the requirements for such status were not met. The United States stated, in part, that "a coastal state claiming such status for a body of water must over a long period of time have openly and continually claimed to exercise sovereignty over the body of water, and its claims must have resulted in an absence of protest of foreign States, amounting to acquiescence on their part." The United Kingdom has stated that this claim "is not consistent with our interpretation of the 1958 Geneva Convention on the Territorial Sea."20

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Map 2

INDIA - SRI LANKA MARITIME BOUNDARY

Bay of Bengal

Tamil Nadu (INDIA)

Madura

Palk Strait

Rameswaram

Ramnathan

Pamban Is.

Dhanushkodi

Pola Bay

Deft Is.

Adams Bridge

Talaimannar

Manna Island

Mannar

Gulf of Mannar

Trincanaiet

Colombo

SRI LANKA

Mercator Projection

0 50 Kilometers

0 50 Nautical miles

at 7°30'N
Map 3

Italy's Historic Bay Claim: Gulf of Taranto
Libya - Gulf of Sidra:

In 1973 Libya's Foreign Ministry circulated a note claiming the Gulf of Sidra as Libyan internal waters. The Gulf was defined by a closing line, approximately 300 miles long, along the 32° 30' parallel of north latitude (see Map 4). The United States first protested this claim in 1974. In a 1985 Note to the UN Secretary General, the United States reiterated its protest and rejected "as unlawful interference with the freedoms of navigation and overflight and related high seas freedoms, the Libyan claim to prohibit navigation" in the Gulf.

Several other states including, Australia, France, the Federal Republic of Germany, Norway, and Spain have protested Libya's claim. In December 1986, the U.S. State Department published "Navigation Rights and the Gulf of Sidra," in GIST, a reference aid on U.S. foreign relations. The study discussed the history of U.S. responses, dating to the 18th century, to attempts by North African states to restrict navigation in these waters. The GIST stated, in part that:

Since Libya cannot make a valid historic waters claim and meets no other international law criteria for enclosing the Gulf of Sidra, it may validly claim a 12-nautical mile territorial sea as measured from the normal low-water line along its coast. Libya may claim up to a 200-nautical mile exclusive economic zone in which it may exercise resource jurisdiction, but such a claim would not affect freedom of navigation and overflight.

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21 1974 Digest of US Practice in International Law, p. 293.
22 The United Nations transmitted this note to the permanent missions in New York on July 10, 1985, as Document NV/85/11; subsequently the note was published in Law of the Sea Bulletin No. 6, October 1985, p. 40.
Panama - Gulf of Panama:

On January 30, 1956, Panama in its Law No. 9 claimed the Gulf of Panama as an historic bay.\textsuperscript{25} Colombia and Costa Rica, in their respective maritime boundary agreements with Panama, did not "object" to Panama's claim.\textsuperscript{26} The United States first protested this claim in a 1956 note to Panama which stated, in part.\textsuperscript{27}

\textsuperscript{25} Law No. 9, published in the \textit{Gaceta Oficial} of April 24, 1956, may be found in \textit{Atlas of the Straight Baselines} (Scovazzi ed., 2nd ed. 1989), p. 44.

\textsuperscript{26} See Article III of the 1976 Columbia-Panama Maritime Boundary Agreement and Article III of the 1980 Costa Rica-Panama Maritime Boundary Agreement. These agreements are translated and analyzed in \textit{Limits in the Seas} Nos. 79 and 97, respectively.

\textsuperscript{27} Diplomatic Note No. 199 of September 28, 1956 to the Panama Foreign Office.
Particular note has been taken by my Government of the statements that "the Republic of Panama and its predecessors...have been exercising sovereignty over the waters of the Gulf of Panama in the Pacific Ocean from time immemorial" and that "the territorial character of the Gulf under reference and the exercise of Panamanian sovereignty over it always has had the tacit acquiescence of all states."...

My Government submits that the Gulf of Panama does not qualify as a historic bay under international law. This body of water has never enjoyed the character of a historic bay, whether by immemorial claim or by treatment as such by the community of nations. The Gulf of Panama was not recognized as a historic bay at the time of the separation of Panama from Colombia, and nothing that has occurred subsequently has been of a character to give the Gulf of Panama the character of a historic bay....

**U.S.S.R. - Peter the Great Bay**

The Soviet Union first claimed Peter the Great Bay as an historic bay by a 1957 Decree (see Map 5). The United States protested the claim that same year, as did Japan, the United Kingdom, France, Canada, Sweden, the Netherlands, and the Federal Republic of Germany. The 106-mile closing line is, at one point, more than 20 miles from any land territory, and 47 miles seaward from Vladivostok, an important Soviet naval base.

Following an incident involved the USS Lockwood on May 3, 1982, the United States renewed its protest of the Soviet Union's claim that Peter the Great Bay was an historic bay. The U.S. note read, in part:

...refers to an incident of May 3, 1982, when a warship of the United States of America was approached by naval units of the Union of Soviet Socialist Republics while navigating on the high seas in the vicinity of Peter the Great Bay, and was ordered to leave what the Soviet naval units referred to as waters of the Soviet Union.

In light of this incident, the Government of the United States of America wishes to state again its objection to the claim... that the waters of Peter the Great Bay landward of a line drawn between the mouth of the river Tyumen-Ula and the Povorotny promontory are internal waters of the Soviet Union. As the Government of the United States of America informed the Government of the Union of Soviet Socialist Republics in its Diplomatic Note of August 12, 1957, and reiterated in its note of March 6, 1958, there is no basis in international law for the unilateral claim to all the waters of Peter the Great Bay landward of the aforementioned line as

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28 In December 1991, the Union of Soviet Socialist Republics broke apart. On January 27, 1992, the permanent Representative of the Russian Federation to the United Nations presented the Secretary General of the U.N., a note which stated, in part, "The Russian Federation continues to exercise its rights and honour its commitments deriving from international treaties concluded by the Union of Soviet Socialist Republics." To our knowledge, the Russian Republic has not made an official statement regarding former USSR maritime claims.


30 *Diplomatic Note No. 86/82* dated August 2, 1982.
internal waters of the Soviet Union. It continues to be the view of the Government of the United States of America that the claim that this large body of water is comprised of internal waters cannot be geographically or historically justified in international law.

**Map 5**

![Map of the Northeast Passage](image)

**U.S.S.R - Northeast Passage:**

The United States conducted oceanographic surveys of the Arctic north of the Soviet Union in the summers of 1963 and 1964. During 1964, the USS Burton Island collected data in the East Siberian Sea. On July 21, 1964, the Soviet Union presented an aide-memoire to the United States regarding this survey in which it was claimed "the Dmitry, Laptev and Sannikov Straits, which unite the Laptev and Eastern-Siberian Seas...belong historically to the Soviet Union."³¹

³¹ Aide-memoire from the Soviet Ministry of Foreign Affairs to the American Embassy in Moscow, July 12, 1964.
In response, the United States stated,³²

So far as the Dmitry, Laptev and Sannikov Straits are concerned, the United States is not aware of any basis for a claim to these waters on historic grounds even assuming that the doctrine of historic waters in international law can be applied to international straits.

**Vietnam - Gulf of Tonkin:**

In addition to claiming part of the Gulf of Thailand as historic waters (see Cambodia and Vietnam above), Vietnam in 1982 also claimed a part of the Gulf of Tonkin as its historic waters. China also borders this Gulf. In December of that year, the United States lodged its protest of this claim to the Vietnam Mission to the United Nations. France and Thailand also protested the claim.

In analyzing Vietnam's claim the Geographer's Office stated, in part,³³

The occurrence of claims to historic bays that are shared by more than one state is even less common than the relatively small number of single states claiming historic bays.

The general norms for the concept of an historic bay ... and the few case studies of bays bordered by more than one state suggest that, at a minimum, the states bordering the bay must all agree that the bay is an "historic bay." The Vietnamese claim to historic waters is questionable because China, which also borders the Gulf of Tonkin, does not claim the gulf as historic waters and disputes the Vietnamese claim to the meridional boundary within the Gulf.

**BASELINES**

A state's territorial sea and most other maritime zones are measured from baselines. The current rules for delimiting maritime baselines are contained in Articles 5 through 14 of the LOS Convention. They distinguish between normal baselines, which follow the low-water mark along the coast, and straight baselines, which can be employed in specified geographical situations.³⁴

**Normal baselines**

Unless other special rules apply, the baseline from which the territorial sea is to be measured is the normal baseline, i.e., the low-water line along the coast as marked on a state's official large-scale charts. United States' policy is that its baseline is the normal baseline. In 1984 the U.S. replied to a Canadian government request for a list of coordinates of the basepoints from which the U.S. territorial sea and the exclusive economic zone are measure by stating that "no such list exists." The United States stated.³⁵

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³⁵ United States Aide-Memoire to Canadian government, March 19, 1984 (Department of State file P84-0012-1925).
The United States measure the breadth of its maritime zones from baselines drawn in accordance with the 1958 Geneva Convention on the Territorial Sea and [the] Contiguous Zone. As provided in Article 3 of the Convention, the normal baseline is the low water line along the coast. The low water line is marked on large-scale charts issued by the National Ocean Service of the Department of Commerce. Bay closing lines are also used as baselines in accordance with Article 7 of the Convention. These too are marked on the large-scale charts wherever they affect the limit of the territorial sea.

Harbor Works

The outermost permanent harbor works which form an integral part of the harbor system are regarded as forming part of the coast for baseline purposes. Harbor works are structures, such as jetties, breakwaters, and groins, erected along the coast, usually near inlets or rivers for protective purposes or for enclosing sea areas adjacent to the coast to provide anchorage and shelter. The U.S. Supreme Court has held that "dredged channels leading to ports and harbors" are not "harbor works." Offshore installations and artificial islands are not permanent harbor works and cannot be considered a part of the baseline.

Reefs

The low-water line of a reef may be used as the baseline for islands situated on atolls or having fringing reefs. The reefs must be depicted with an appropriate symbol on charts official recognized by the coastal State (LOS Convention, Article 6). While the waters inside the lagoon of an atoll are internal waters, the LOS Convention does not address the matter of how to draw a closing line across the atoll entrance.

Straight Baselines

It has been correctly noted that, while in some instances it would be impractical to use the low-water line, "the effect of drawing straight baselines, even strictly in accordance with the rules, is often to enclose considerable bodies of sea as internal waters." Consequently, international law permits states—in limited geographical circumstances—to measure the territorial sea and other national maritime zones from straight baselines drawn between defined points of the coast. The specific geographical circumstances, under which a state may employ straight baselines, are described in Article 7(1) of the LOS Convention and Article 4(1) of the 1958 Territorial Sea and Contiguous Zone Convention:

In localities where the coastline is deeply indented and cut into, or if there is a fringe of islands

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36 Territorial Sea and Contiguous Zone Convention, Article 8; LOS Convention, Article 11.
38 LOS Convention, Article 11.
along the coast in its immediate vicinity, the method of straight baselines joining appropriate points may be employed in drawing the baseline from which the breadth of the territorial sea is measured.

If paragraph 1 above applies, then there are a few other examples of where straight baselines, or straight lines, are permitted. Where the coastline is highly unstable due to natural conditions, e.g., deltas, straight baselines may be established connecting appropriate points on the low-water line. These straight baselines remain effective, despite subsequent regression or accretion of the coastline, until changed by the coastal state (LOS Convention, Article 7(2)).

The straight baselines must not depart from the general direction of the coast, and water areas within the baselines "must be sufficiently closely linked to the land domain to be subject to the regime of internal waters." 40

Straight baselines cannot be drawn to low-tide elevations unless a lighthouse or similar installation which is permanently above sea level, has been erected thereon, or unless the drawing of straight baselines to such a feature has received general international recognition (LOS Convention Article 7(4)).

The U.S. Supreme Court has held that straight baselines could be applied in the United States only with the federal government's approval. In United States v. California, the Court said that the 1958 convention on the Territorial Sea and the Contiguous Zone would permit the United States to use such baselines if it chose but that, 41

California may not use such baselines to extend our international boundaries beyond their traditional international limits against the expressed opposition of the United States.... [A]n extension of state sovereignty to an international area by claiming it as inland water would necessarily also extend national sovereignty, and unless the Federal Government's responsibility for questions of external sovereignty is hollow, it must have the power to prevent States from so enlarging themselves. We conclude that the choice under the Convention to use the straight-base-line method for determining inland waters claimed against other nations is one that rests with the Federal Government, and not with the individual States.

If a river flows directly into the sea, the baseline is a straight line across the mouth of the river between points on the low-water line of its banks (LOS Convention Article 9). No maximum limit is placed on this closing line, nor are specific criteria given on where the closing points should be placed.

United States policy is not to use straight baselines.

40 LOS Convention Article 7(3).
Excessive straight baseline claims

While no detailed internationally accepted standards currently exist that define what is meant by the terms in Article 7, it appears that only certain countries have coastlines that qualify for straight baselines. Nevertheless, the state practice of straight baseline delimitation has, in many instances, distorted the rules for drawing straight baselines. The effect of an illegal straight baseline is a claim that detracts from the international community's rights to use the oceans. One result has been that these straight baseline systems have purported to create large areas of internal waters which legally remain either territorial sea or areas in which the freedoms of navigation and overflight may be exercised. Burma, for example, by drawing a 222-mile straight baseline across the Gulf of Martaban has claimed about 14,300 sq. nm (49,000 sq. kilometers—an area similar in size to Denmark) as internal waters which, absent the closing line, would be territorial sea or high seas (see map 6).

Similarly, Colombia has claimed a 130-mile straight baseline in an area along its Caribbean coast that is neither deeply indented nor are there fringing islands. By establishing this particular straight baseline Colombia has sought to enclose as internal waters about 2,100 sq.nm of waters which previously had been subject to the regime of innocent passage (1,500 sq.nm) or areas in which the freedom of navigation and overflight may be exercised (600 sq.nm).42

More than 60 States have delimited straight baselines along portions of their coasts, and approximately 10 other States have enacted enabling legislation but have yet to publish the coordinates or charts of the straight baselines. Table 2 gives information on those states claiming straight baselines and on any action taken by the United States against those claims not following one or more of the rules for the drawing of straight baselines. Since the U.S. Freedom of Navigation Program is on-going, many of the claims listed in Table 2 are, or will be, under review with possible diplomatic protests and/or operational assertions of right to follow.

There are many ways in which straight baselines have been drawn inconsistent with the provisions of the LOS Convention. The majority of baselines protested by the United States are those which do not meet the criteria set forth in the LOS Convention's Article 7(1); that is, in the vicinity where the baseline is drawn, the coastline is either not "deeply indented and cut into", or it does not have a "fringe of islands along the coast". A state must first meet at least one of these two geographical conditions before applying the straight baseline provisions in the particular locality.

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42 For additional analysis of the Colombian straight baseline claim see Limits in the Seas No. 103, "Straight Baselines: Colombia," April 30, 1985.
Map 6

BURMA: Straight Baselines Claim

ARAKAN COAST
a. Southern Point of Oyster Island
   23°15'28"N
   92°27'15"E
b. Boronga Point
   19°46'50"N
   93°7'18"E
c. South Tenibles
   19°22'46"N
   93°19'29"E
d. Western Point of Henry Rocks
   18°31'02"N
   93°28'55"E
e. Western Point of Nerbuddo Island
   18°26'45"N
   93°38'26"E
f. St. John's or Church Rocks
   17°57'45"N
   94°11'48"E
g. North West Group
   16°52'10"N
   94°12'46"E
h. Korung Island
   16°31'23"N
   94°43'27"E
i. South Rock
   16°16'35"N
   94'11'38"E
j. Black Rock
   16°17'56"N
   94°10'30"E
k. Alguado Reef (Pothelin Light)
   15°42'15"N
   94°13'39"E

GULF OF MARTABAN
A. Alguado Reef (Pothelin Light)
   17°24'37"N
   94°12'32"E
B. Western Point of Long Island
   16°24'15"N
   97°40'02"E

ANDAMAN SEA

TENASSERIM COAST
a. Western Point of Long Island
   14°21'36"N
   97°40'02"E
b. North Island
   14°20'00"N
   97°40'54"E
c. West Canister Island
   13°40'50"N
   97°39'10"E
d. Northern Point of Sourim Island
   13°39'40"N
   97°39'00"E
f. Great Western Torres
   13°37'03"N
   97°38'15"E
g. North Western Point of North Twin
   13°36'15"N
   97°38'15"E
h. Western Point of South Twin
   13°36'15"N
   97°40'02"E
i. Western Rocky Island
   13°31'54"N
   97°34'30"E
j. Haycock Island
   9°40'45"N
   97°34'30"E
k. Western Point of Murray Island
   8°35'34"N
   97°38'12"E

Boundary representation is not necessarily authoritative.

0643 3-90 STATE (NR/GE)
### TABLE 2
CLAIMS MADE TO STRAIGHT BASELINES*

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<th>State</th>
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<td>Portugese Decree No. 47,771, June 27, 1967</td>
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<td>Law No. 17,094, Jan. 19, 1967</td>
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<td>Law No. 23,968, Sep. 13, 1991</td>
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<td>Australia</td>
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<td>Decree 62-DF-216, June 25, 1962</td>
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<td>Decree No. 416, July 14, 1977</td>
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<td>Law No. 77-926, Nov. 17, 1977 [enabling legislation]</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Tunisia</td>
<td>Decree No. 73-527, Nov. 3, 1973</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turkey</td>
<td>Law No. 476, May 15, 1964</td>
<td></td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Order-in-Council, Sept. 25, 1964</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UK Dependencys:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turks &amp; Caicos</td>
<td>Statutory Instrument 1989 No. 1996</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Venezuela</td>
<td>Decree, July 10, 1988 1989</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vietnam</td>
<td>Statement, Nov. 12, 1982 1982+</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>Yemen</td>
<td>Act No. 45, Jan. 15, 1978 [enabling legislation]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yugoslavia</td>
<td>Law No. 876, Dec. 8, 1948</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

+ Multiple protests
The following are a few examples of claims that the United States has protested.

Canada: On three occasions Canada has claimed straight baselines for portions of its coast: in 1967 for Labrador and Newfoundland, in 1969 for Nova Scotia, Vancouver and Queen Charlotte islands, and in 1985 for the Arctic islands. The U.S. has protected each of these claims. An excerpt of the note verbale in 1967 states,

...As the Government of Canada is aware, the United States Government considers the action of Canada to be without legal justification. It is the view of the United States that the announced lines are, in important and substantial respects, contrary to established principles of international Law of the Sea. The United States does not recognize the validity of the purported lines and reserves all rights of the United States and its nationals in the waters in question.

The United States similarly protested the 1969 assertion.44

In September 1985 Canada proclaimed it would establish straight baselines around all of its Arctic islands, effective January 1, 1986 (see map 7). The United States did not agree with Canada that these waters were now to be considered internal, particularly since international straits were involved. The U.S. position with regard to the Canadian claim was addressed in a February 26, 1986, letter from James W. Dyer, Acting Assistant Secretary of State for Legislative and Intergovernmental Affairs, to Senator Charles Mathias, Jr. (R. Maryland) which stated, in part,45

On September 10, 1985, the Government of Canada claimed all the waters among its Arctic islands as internal waters, and drew straight baselines around its Arctic islands to establish its claim. The United States position is that there is no basis in international law to support the Canadian claim. The United States cannot accept the Canadian claim because to do so would constitute acceptance of full Canadian control of the Northwest Passage and would terminate U.S. navigation rights through the Passage under international law.

The Member States of the European Community (EC) also commented on Canada's Arctic straight baseline system in part as follows:46

The validity of the baselines with regard to other states depends upon the relevant principles of international law applicable in this case, including the principle that the drawing of baselines must not depart to any appreciable extent from the general direction of the coast. The Member States acknowledge that elements other than purely geographical ones may be relevant for purposes of drawing baselines in

---

43 Note Verbale date November 1, 1967; reprinted in Annex 4 to volume I of the Documentary Annexes to the United States Reply in the Gulf of Maine Case before the ICJ, 1983.
44 Ibid.
45 State Department File No. P86 0019-8641.
46 British High Commission Note No. 90/86 of July 9, 1986.
particular circumstances but are not satisfied that the present baselines are justified in general. Moreover, the Member States cannot recognize the validity of a historic title as justification for the baselines drawn in accordance with the order.

The Member States of the EC cannot therefore in general acknowledge the legality of these baselines and accordingly reserve the exercise of their rights in the waters concerned according to international law.
**Costa Rica:** The United States responded to the 1988 Costa Rican straight baseline claim by state, in part,⁴⁷

The Government of the United States wishes to recall to the Government of Costa Rica that, as recognized in customary international law and as reflected in the 1982 United Nations Convention on the Law of the Sea, unless exceptional circumstances exist, baselines are to conform to the low-water line along the coast as marked on a state's official large-scale charts. Straight baselines may only be employed in localities where the coastline is deeply indented and cut into, or where there is a fringe of islands along the immediate vicinity of the coast. Additionally, baselines must not depart to any appreciable extent from the general direction of the coast, and the sea areas lying within the lines must be sufficiently closely linked to the land domain to be subject to the regime of internal waters.

While the Pacific coastline of Costa Rica contains two embayments, it is neither deeply indented and cut into, nor fringed with many islands, as those standards are employed and understood in international law.

**Portugal:** In 1985, Portugal claimed a system of straight baselines along the mainland coast and around the Azores. The United States, in a 1986 diplomatic note, protested the claim. An excerpt of the note follows:⁴⁸

The United States is unable to accept as valid the establishment by the Government of Portugal of many of the closing lines and straight baselines promulgated in the decree. It is the view of the United States that the lines in question do not comply with international law which in this case is reflected in the 1982 United Nations Convention on the Law of the Sea. With regard to the mainland, those segments which connect Ponta Carreiros with Barra de Aveiro, Cabo da Roca with Cabo Raso, Cabo Raso with Cabo Espichel, Cabo Espichel with Cabo Sines, Cabo Sines with Cabo de Sao Vicente and Ponta de Sagres with Cabo de Santa Maria, do not enclose juridical bays or lie in localities which meet the legal requirement that the coastline is deeply indented and cut into...

Certain of the baselines around the Maderia and the Azores Islands groupings are objectionable for the same reasons, i.e., they do not lie in localities where the coastlines are deeply indented and cut into nor do they connect a fringe of islands along a coast in its immediate vicinity.

In addition to not meeting the essential standards cited in paragraph one of Article 7, state practice on straight baselines also includes other infractions of international law. For example, several mainland states have drawn straight baselines around dependent islands.

⁴⁸ Diplomatic note transmitted by the American Embassy at Lisbon, based on instructions found in 1986 State telegram 266998.
which basically represent archipelagic baselines. According to Part IV of the LOS Convention archipelagic baselines may be drawn only by an archipelagic state which is defined in Article 46(a) as a State "constituted wholly by one or more archipelagos and may include other islands." The United States has protested claims made by Ecuador and Portugal for this reason.

In 1984 the Federal Republic of Germany claimed a closure line, from which to measure its territorial sea, out to a roadstead. This action created a box in the Helgolander Bucht which, at one point, extends the territorial sea to 16 miles (see map 8). The U.S. protest stated, in part, 49

...Equally illegal and without foundation is the use of closure lines out to a roadstead situated wholly outside a properly delimited territorial sea. While roadsteads normally used for the loading, unloading, and anchoring of ships possess the status of territorial sea, the waters between an outlying roadstead and the general territorial sea are not territorial in nature, and the high seas freedoms applicable to those intervening waters cannot be prejudiced by the coastal state....

TERRITORIAL SEA

International consensus, as reflected in Article 3 of the LOS Convention, is that 12 miles is the maximum permissible breadth of the territorial sea. In 1988 the United States extended its territorial sea to 12 miles. 50 President Regan's Proclamation stated, in part,

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

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

By large measure, the state practice of territorial sea claims has become relatively stable and in line with the customary international law as reflected in the LOS Convention. There are some exceptions.

There are some interesting comparisons of current territorial sea claims to those made in 1958, the time of the first LOS Conference (Table 3). In 1958 more than half the coastal states (45) claimed a territorial sea of 3 miles; four others, the Nordic states, claimed 4 miles. At that time 15 coastal states asserted territorial seas between 5 and 10 miles, and

---

9 others had 12 mile limits. Only 2 states, Ecuador and Peru, claimed 200-mile territorial seas. By February 1, 1992 111 (75%) of the coastal states claim 12-mile limits; 13 states claim lesser breadths while 18 states have claims exceeding the 12-mile limit, with 12 claims of 200 miles.\textsuperscript{51}

\textsuperscript{51} As of February 1992 information was not available on the maritime claims of Estonia, Georgia, Latvia, Lithuania, and Ukraine.
Map 8

Federal Republic of Germany’s
Territorial Sea Extension
in the North Sea

- Territorial Sea extension
- Straight baselines
- Three nautical mile territorial sea
- Traffic separation scheme
- Roadstead
- Area between 12 nautical mile arcs
  (drawn from FRG baseline) and roadstead
- Baseline turning point

NORTH SEA

Helgoland
Bucht

Norderney
Langeness
Spiekeroog
Wangeroojge
Bremen

30° 8° 30° 54°

NORDFRIESLAND
FRG

Pellworm
Nordstrand
EIDERSTEDT

LAND HADELN
FRG

36
Table 3

TERRITORIAL SEA CLAIMS
1958 & 1992

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>45</td>
<td>8</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>6</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>10</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>12</td>
<td>9</td>
<td>111</td>
</tr>
<tr>
<td>20</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>30</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>35</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>50</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>200</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>Rectangle</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>No legislation</td>
<td>5</td>
<td>-</td>
</tr>
</tbody>
</table>

The United States either has protested or asserted its navigation rights against all the claims that exceed the 12-mile limit (Table 4).
Table 4

TERRITORIAL SEA CLAIMS
GREATER THAN 12 MILES

<table>
<thead>
<tr>
<th>State</th>
<th>Breadth: Law, Date of Claim</th>
<th>U.S. Protest</th>
<th>U.S. Assertion Of Right</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angola</td>
<td>20; Decree No. 159/75, Nov. 6, 1975</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Benin</td>
<td>200; Decree No. 76-92, April 2, 1976</td>
<td>1984*</td>
<td>Yes</td>
</tr>
<tr>
<td>Brazil</td>
<td>200; Decree Law No. 1098, March 27, 1970</td>
<td>1970</td>
<td>Yes</td>
</tr>
<tr>
<td>Cameroon</td>
<td>50; Law No. 74/16, Dec. 5, 1974</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Congo</td>
<td>200; Ordinance No. 049/77, Dec. 20, 1977</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Ecuador</td>
<td>200; Decree Law No. 1542, Nov. 11, 1966</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>El Salvador</td>
<td>200; Constitution, Sept. 7, 1950</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Germany</td>
<td>16; Federal Gazette, March 16, 1985</td>
<td>1950</td>
<td>Yes</td>
</tr>
<tr>
<td>Libería</td>
<td>200; Act No. May 5, 1977</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Nicaragua</td>
<td>200; Act No. 205, Dec. 19, 1979</td>
<td>1977</td>
<td>Yes</td>
</tr>
<tr>
<td>Nigeria</td>
<td>30; Decree No. 38, Aug. 26, 1971</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Panama</td>
<td>200; Law No. 31, Feb. 2, 1967</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Peru</td>
<td>200; Supreme Decree, Aug. 1, 1947</td>
<td></td>
<td>Yes</td>
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<tr>
<td>Philippines</td>
<td>Rectangle; Act. No. 3046, June 17, 1961</td>
<td></td>
<td>Yes</td>
</tr>
</tbody>
</table>

* Claim protested more than once.
<table>
<thead>
<tr>
<th>Country</th>
<th>Code</th>
<th>Law/Act/Decree</th>
<th>Year</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sierra Leone</td>
<td>200</td>
<td>Interpretation Act, April 19, 1971</td>
<td>1973</td>
<td>Yes</td>
</tr>
<tr>
<td>Togo</td>
<td>30</td>
<td>Ordinance No. 24, Aug. 16, 1977</td>
<td>1984</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>[navigation and overflight permitted beyond 12 miles]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In many situations protest notes have been transmitted on several occasions (indicated by a + in the table). Navigation assertions of right, either surface transits or overflights, are conducted in the course of normal operations.

One negative note in state practice has been the several occasions since 1974, as the 12-mile territorial sea limit was gaining international consensus by being placed in the LOS negotiating text, when states increased their territorial seas beyond the acceptable limit (Graph 1). Sixteen claims have been made, since 1974, creating a territorial sea limit in excess of 12 miles. Even after the LOS Conference had concluded and the LOS Convention was open for signature, El Salvador re-enacted a 200-mile territorial sea claim. On the positive side, there has been a trend of states that have "rolled-back" their excessive claims to 12 miles. Of the 16 states noted above, six have since enacted laws bringing their claims back to 12 miles. And, Argentina, which in 1967 claimed a 200-mile territorial sea, in 1991 rolled back its claims to 12 miles (Table 5).

Table 5

<table>
<thead>
<tr>
<th>State</th>
<th>Excessive Claim</th>
<th>Year Claim Rolled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Year</td>
<td>Breadth</td>
</tr>
<tr>
<td>Albania</td>
<td>1976</td>
<td>15</td>
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<tr>
<td>Argentina</td>
<td>1967</td>
<td>200</td>
</tr>
<tr>
<td>Cape Verde</td>
<td>1975</td>
<td>200</td>
</tr>
<tr>
<td>Gabon</td>
<td>1970</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>1972</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>1972</td>
<td>100</td>
</tr>
<tr>
<td>Ghana</td>
<td>1973</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>1977</td>
<td>200</td>
</tr>
<tr>
<td>Guinea-Bissau</td>
<td>1974</td>
<td>150</td>
</tr>
<tr>
<td>Haiti</td>
<td>1977</td>
<td>100</td>
</tr>
<tr>
<td>Madagascar</td>
<td>1973</td>
<td>50</td>
</tr>
<tr>
<td>Maldives</td>
<td>1964</td>
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<tr>
<td>Mauritania</td>
<td>1972</td>
<td>30</td>
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<tr>
<td></td>
<td>1977</td>
<td>70</td>
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<td>Senegal</td>
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<td>200</td>
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<td>1973</td>
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<tr>
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<td>1889</td>
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</tbody>
</table>
CHRONOLOGY OF TERRITORIAL SEA CLAIMS WITH BREADTHS EXCEEDING 12 NAUTICAL MILES (As of December 1, 1991)

States-Claim (200 miles unless noted)

Graph 1

Year

1
1887
TONGA-REC

1
1847
PERU

1
1947
PHILIPPINES-REC

1
1967
MALDIVES-REC

1
1954
GUINEA

1
1969
ECUADOR

1
1962
ARGENTINA

1
1969
PANAMA

1
1969
URUGUAY

1
1969
BRAZIL

1
1968
SIERRA LEONE

1
1970
NGERIA-30

1
1972
GABON-100

1
1972
SOMALIA

1
1972
MADAGASCAR-50

1
1972
TANZANIA-50

1
1972
CAMEROON-50

1
1972
GUINEA-BISSAU-150

1
1972
ANGOLA-20

1
1972
CAPE VERDE-100

1
1972
ALBANIA-15

1
1972
BENIN

1
1972
SENEGAL-150

1
1972
CONGO

1
1972
GHANA

1
1972
LIBERIA

1
1972
TOGO-30

1
1972
MAURITANIA - 70

1
1972
NICARAGUA

1
1972
PERU

1
1972
SYRIA-35

1
1972
UNITED NATIONS LAW OF THE SEA CONVENTION OPEN FOR SIGNATURE

1
1972
EL SALVADOR

Claim no longer in force: State now claims 12-mile limit

*Rectangular Claim

*
CONTIGUOUS ZONE

The contiguous zone is an area seaward of the territorial sea in which the coastal State may exercise the control necessary to prevent or punish infringement of its customs, fiscal, immigration, and sanitary laws and regulations that occur with its territory or territorial sea (LOS Convention, Article 33). The contiguous zone is comprised of international waters where ships and aircraft, including warships and military aircraft, of all States enjoy the high seas freedoms of navigation and overflight.

The maximum permissible breadth of the contiguous zone is now 24 miles, as measured from the baseline from which the territorial sea is determined (LOS Convention, Article 33(2)). The United States claims a contiguous zone of 12 miles, but will respect foreign contiguous zone claims to 24 miles consistent with the provisions of the LOS Convention.\(^{52}\)

There are relatively few instances of claims to a contiguous zone that exceed the rights permitted under international law. The following are examples of U.S. protests against such claims:

**Haiti:** The United States protested Haiti's attempt to expand the competence of its contiguous zone to include protection of national security interests. Thus, in 1989 the U.S. protested Haiti's Decree No. 38 of July 12, 1977, stating, in part:\(^{53}\)

...customary international law, as reflected in the 1958 Geneva Convention on the Territorial Sea and the Contiguous Zone, to which Haiti and the United States are party, and in the 1982 United Nations Convention on the Law of the Sea, does not recognize the right of coastal states to assert powers or rights for security purposes in peacetime that would restrict the exercise of the high seas freedoms of navigation and overflight beyond the territorial sea.

The United States has protested similar claims made by the following countries:

<table>
<thead>
<tr>
<th>Bangladesh</th>
<th>Syria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burma</td>
<td>Venezuela</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>Yemen Arab Republic</td>
</tr>
<tr>
<td>Sudan</td>
<td>Peoples Dem. Republic of Yemen</td>
</tr>
</tbody>
</table>

**Namibia:** In a 1990 diplomatic note to Namibia the U.S. expressed its concern over Namibia's claim to establish control within the full extent of its 200-mile exclusive economic zone to prevent infringement of its fiscal, customs, immigration, and health laws. The

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\(^{52}\) The United States claim appears in Department of State Public Notice 358, 37 Federal Register 11, 906, June 15, 1972. The 12-mile limit is now also the outer limit of the U.S. territorial sea for international purposes; for U.S. domestic law purposes the U.S. territorial sea remains at 3 miles.

protest note read, in part.  

As recognized in customary international law and as reflected in articles 33 and 56 of the 1982 United Nations Convention on the Law of the Sea, the right of a coastal state to prevent infringement of its fiscal, customs, immigration, and health laws within its territory or territorial sea does not extend beyond 24 nautical miles from the baseline from which the breadth of the territorial sea is measured.

**Vietnam**: In a decree of March 17, 1980, Vietnam claimed that military vessels must have its permission and must also give notice before entering Vietnam's contiguous zone. The United States protested these claims in 1982 stating.  

The Government of the United States of America also wishes to refer to specific provisions of the Decree of March 17, 1980 which assert jurisdiction in a manner which is contrary to international law with respect to the activities of foreign vessels operating in the territorial sea or the contiguous zone of the Socialist Republic of Vietnam, including, inter alia: a claim that submarines in the contiguous zone must navigate on the surface and show their flag; a claim that aircraft may not be launched from or taken aboard ships operating in the contiguous zone; and, a claim that, before entering the contiguous zone or the territorial sea, ships equipped with weapons must take prescribed steps to render such weapons less readily available for use...[I]nternational law limits the jurisdiction which a coastal state may exercise in maritime areas. It is the view of the government of the United States of America that the aforementioned claims made in the decree of March 17, 1980 exceed such limits.

**EXCLUSIVE ECONOMIC ZONE**

The EEZ concept gained general acceptance early in the UNCLOS III negotiations. A balance between coastal state interests, particularly developing states, and the interests of maritime, land-locked, and geographically disadvantaged states was required, however, before final acceptance of an EEZ text could be achieved. The underlying purpose for creating this new maritime regime was to give coastal states increased rights over the resources off their coasts while curtailing the trend of national claims to broader territorial seas and preserving as many high seas freedoms as possible.

**The EEZ and the LOS Provisions**

At UNCLOS III a fundamental issue was the legal status of EEZ waters. Intense debates arose regarding the legal nature of coastal state rights in the EEZ and their relationship to rights of other states in the zone. The consensus developed that non-resource-related high

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54 Diplomatic Note No. 196, December 24, 1990 from the American Embassy at Windhoek. Germany also protested this claim in October of 1990.

seas freedoms, including the freedoms of navigation and overflight and the freedoms to lay pipelines and submarine cables, would be preserved in the EEZ. Yet, even the exercise of these freedoms must be balanced against the exercise of EEZ rights by the coastal state. Article 58, for example, recognizes the enjoyment of high seas freedoms by all states, "subject to the relevant provisions of this Convention...", and with "due regard to the rights and duties of the coastal State...."

The LOS Convention strikes a balance between the rights and duties of coastal states on the one hand, and of all other states on the other. Part V, Articles 53 through 75, of the LOS Convention, pertains to the EEZ. Article 56 addresses the rights, jurisdiction, and duties of the coastal state in the EEZ. Paragraph 1 of this article distinguishes sovereign rights from jurisdiction:

1. In the exclusive zone, the coastal State has:

   (a) sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters superjacent to the sea-bed and of the sea-bed and its subsoil, and with regard to other activities for the economic exploitation and exploration of the zone, such as the production of energy from the water, currents and winds;

   (b) jurisdiction as provided for the relevant provisions of this Convention with regard to:

      (i) the establishment and use of artificial islands, installations and structures;
      (ii) marine scientific research;
      (iii) the protection and preservation of the marine environment;

   (c) other rights and duties provided for in this Convention.

Article 57 defines the breadth of the EEZ to be no more than 200 miles from the baseline from which the territorial sea is measured.

Article 58 pertains to the rights and duties of other States in the EEZ. Whereas Article 56(2) states that coastal States "shall have due regard to the rights and duties of other States..." in the EEZ, Article 58(3) places similar requirements on other States:

   In exercising their rights and performing their duties under this Convention in the exclusive economic zone, State shall have due regard to the rights and duties of the coastal State and shall comply with the laws and regulations adopted by the coastal State in accordance with the provisions of this Convention and other rules of international law in so far as they are not incompatible with this Part.

Although it is not specific, Article 59 provides a basis for resolving disputes over rights and duties not addressed in the Convention. The conflict "should be resolved on the basis of equity and in the light of all the relevant circumstances, taking into account the respective
importance of the interests involved to the parties as well as the international community as a whole."

Article 60 sets out the provisions for the coastal State to construct and to authorize and regulate the construction, operation, and use of artificial islands, installations, and structures in its EEZ.

Of the remaining 15 articles on the EEZ, 13 specifically relate to living resource jurisdiction in the zone. Of particular importance to foreign fishermen is Article 73 on the enforcement of laws and regulations by the coastal State. Paragraph 3 provides that coastal State penalties for violation of fisheries legislation in the EEZ "may not include imprisonment in the absence of agreements to the contrary by the States concerned."

**The EEZ and State Practice**

The exclusive economic zone has gained recognition as customary international law. A Chamber of the International Court of Justice expressed its opinion on the subject.59

Turning lastly to the proceedings of the Third United Nations Conference on the Law of the Sea and the final result of that Conference, the Chamber notes in the first place that the Convention adopted at the end of the Conference has not yet come into force and that a number of States do not appear inclined to ratify it. This, however, in no way detracts from the consensus reached on large portions of the instrument and, above all, cannot invalidate the observation that certain provisions of the Convention, concerning the continental shelf and the exclusive economic zone...were adopted without any objections. The United States, in particular, in 1983...proclaimed an economic zone on the basis of Part V of the 1982 Convention. This proclamation was accompanied by a statement by the president to the effect that in that respect the Convention generally confirmed existing rules of international law. Canada, which has not at present made a similar proclamation, has for its part also recognized the legal significance of the nature and purpose of the new 200-mile regime...In the Chamber's opinion, these provisions, even if in some respects they bear the mark of the compromise surrounding their adoption, may nevertheless be regarded as consonant at present with general international law on the question.

The general consensus reached on the exclusive economic zone (EEZ) at the Law of the Sea conference as been supported by state practice since the mid-1970s. Thus, the concept of the EEZ, including its maximum breadth of 200 miles and the basic rules governing the zone, has been effectively established as customary international law. These rules are binding, therefore, on states even before the LOS Convention comes into force.

As of February 1, 1992, 83 States claim an EEZ. The United States, by Presidential

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Proclamation, claimed an EEZ in 1983 (See Annex I for the text of this Proclamation).57

Several states have enacted laws claiming rights that potentially could exceed those authorized in the LOS Convention. Barbados, for example, claimed the right to extend the application of any of its laws to its EEZ. The United States protested this claim by stating, in part.58

Of particular concern...is the provision of the Marine Boundaries and Jurisdiction Act, 1978 which purports to grant authority to the Governor-General of Barbados to extend the application of any law of Barbados to the claimed exclusive economic zone of Barbados. It is the view of the Government of the United States that claims made by the Marine Boundaries and Jurisdiction Act, 1978, including the claim of unlimited authority to extend the law of Barbados over maritime areas, are without foundation in international law.

Burma has also claimed broad authority in the EEZ. In Article 18(b) of its 1977 Territorial Sea and Maritime Zones Law Burma claimed the

...exclusive rights and jurisdiction for the construction, maintenance or operation of artificial islands, offshore terminals installations and other structures and devices necessary for the exploration of its natural resources, both living and non-living, or for the convenience of shipping or for any other purpose. (Emphasis added).

The United States protested this claim in 1982, as well as similar claims made by the following countries (the year of the U.S. protest is in parenthesis):


Although Article 73 (1) of the LOS Convention expressly prohibits the coastal State from imprisoning violators of national fishery regulations, unless agreed to between the concerned states, the following countries have included imprisonment provisions, or potential for imprisonment penalties, in their EEZ laws:

Antigua and Barbuda
Bangladesh
Barbados
Burma
Cape Verde
Grenada
Guinea-Bissau
Guyana
India
Maldives
Mauritius
Niue

57 Presidential Proclamation 5030, March 10, 1983, 48 Federal Register 10601. Effective January 1, 1992, the United States began exercising jurisdiction over highly migratory species of tuna within its EEZ.
58 Diplomatic Note No. 152, June 14, 1982 from the American Embassy at Bridgetown.
Nigeria  Seychelles  
Pakistan  Suriname  
Philippines  Vanuatu  
Portugal  Yemen  

CONTINENTAL SHELF

The first wave of post-World World II national claims to expanded ocean areas began with President Truman’s 1945 Proclamation on the Continental Shelf, by which the United States asserted exclusive sovereign rights over the resources of the continental shelf off its coasts. The Truman Proclamation specifically stated that waters above the shelf were to remain high seas and that freedom of navigation and overflight were not to be affected.

The definition of the continental shelf established at UNCLOS I in 1958 was vague and flexible. Article 1(a) of the Convention on the Continental Shelf states that the continental shelf refers:

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

At UNCLOS III the 1958 definition was discarded and an attempt was made to develop a logical and satisfactory definition of the continental margin that included not only the continental shelf but also the continental slope and rise. Article 76(1) of the LOS Convention defines the continental shelf:

The continental shelf of a coastal State comprises the sea-bed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend up to that distance.

Regardless of the seafloor features, a State may claim, at a minimum, a 200-mile continental shelf. Under other LOS Convention provisions a state has the right to claim a 200-mile EEZ which includes jurisdictional rights over the living and nonliving resources of the seafloor and seabed. Thus, for those states whose physical continental margin does not extend farther than 200 miles from the baseline, the concept of the continental shelf is of less importance than before.

Paragraphs 3-7 of Article 76, which provide a rather complex formula for defining the

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"continental shelf", apply only to states that have physical continental margins extending more than 200 miles from the coast. A few items in these paragraphs are worth noting:

- the margin does not include the deep ocean floor with its ocean ridges (paragraph 3);

- if the continental margin extends beyond 200 miles, the outer limit shall be measured by one of two methods described in paragraph 4;

--paragraph (a) (i) margin definition is based on the determination of thickness of sediments. The margin can extend to that point where the thickness of sediments "is at least 1 percent of the shortest distance from such point to the foot of the continental slope." Thus, if at a given point beyond 200 miles from the baseline the sediment thickness is 3 kilometers, then that point could be as much as 300 kilometers seaward of the foot of continental slope, subject to the provisions in paragraph 5;

--paragraph (a) (ii) defines the continental margin using a limit not more than 60 miles from the foot of the continental slope;

- paragraph 5 limits any continental shelf definition at either 350 miles from the territorial sea baseline or 100 miles form the 2,500 meter isobath, whichever is farther seaward. It is important to recognize that for paragraph 5 to be relevant, the requirements set forth in paragraph 4 must first be met; and

- on submarine ridges the outer limit shall not exceed 350 miles from the territorial sea baselines, but this provision does not apply "to submarine elevations that are natural components of the continental margin, such as its plateaux, rises, caps, banks and spurs" (paragraph 6).

Although the United States has not yet determined the outer limit of its continental margin, it has recognized the definition in Article 76 as reflecting customary international law. On November 17, 1987 the Interagency Group on the Law of the Sea and Ocean Policy established the policy of the United States on delimiting the outer limit of the United States continental shelf. The Interagency Group decided "that the delimitation provisions of Article 76 of the 1982 United Nations Convention on the Law of the Sea reflect customary international law and that the United States will use these rules when delimiting its continental shelf and in evaluating the continental shelf claims of other countries."

Since the mid-1970s, several countries have made general claims to the continental shelf that the United States believes exceed the provisions of the LOS Convention. For example, the United States protested Pakistan's 1976 law stating, in part that the law purported:

60 Memorandum from Assistant Secretary John D. Negroponte to Deputy Legal Adviser Elizabeth Verville, November 17, 1987.
61 Diplomatic Note No. 694 dated June 8, 1982, from the American Embassy at Islamabad, Pakistan. Pakistan's Territorial Waters and Maritime Zones Act, 1976, may be found in Robert W. Smith, Exclusive
to assert jurisdiction over the continental shelf...in a manner which is contrary to international law, including inter alia: a claim of authority to designate areas of the continental shelf...and to restrict navigation and certain other activities therein, and, a claim of authority to extend any law over, and to prescribe and enforce any regulation necessary to control the conduct of any person in,...the continental shelf...of Pakistan. The Government of the United States wishes to remind the Government of Pakistan that international law limits the jurisdiction which a coastal state may exercise in maritime areas....

Similar protests were lodged with Guyana, India, Mauritius, and the Seychelles.62

At least two countries (Ecuador and Chile) have made specific continental shelf claims involving limits beyond 200 miles. In a 1985 Presidential Proclamation Ecuador claimed the undersea Carnegie range (Cordillera de Carnegie) as its continental shelf. This claim created a "bridge" between the 200-mile limits drawn from Ecuador's mainland and from the Galapagos Islands. A 100-mile continental shelf was claimed on either side of the 2,500-meter depth isobath along this "bridge". Ecuador applied Article 76(5) of the LOS Convention which sets these maximum limits, but did so without first satisfying the physical criteria set forth in Article 76(4). (It is unlikely that Ecuador could satisfy the sedimentary rock thickness test since this cordillera is an oceanic ridge.) The United States protested this claim in February 1986. (Germany and France have also protested Ecuador's assertion). The United States went into a fair amount of detail in its protest of this claim:63

...refers to a Proclamation of 19 September [1985] by President Febres Cordero on the continental shelf of Ecuador that states, inter alia, that "...in addition to the continental and island shelves in Ecuador's 200 mile territorial sea, the seabed and subsoil between its continental territorial sea and the territorial sea around the archipelago De Colon [Galapagos Islands] for a distance of 100 miles from the isobath at a depth of 2,500 meters also form part of Ecuador's continental shelf."

Customary international law on delimitation of the continental shelf as reflected in Article 76 of the Law of the Sea Convention provides that the continental shelf of a coastal state extends throughout the natural prolongation of its land territory to the edge of the continental margin, or to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend up to that distance. Article 76(4) further provides that when the outer edge of the continental margin does extend beyond the aforementioned 200

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63 It should be noted that Ecuador refers to its 200-mile territorial sea in this claim. The United States protested this claim in 1967 after it was first made in 1966, and again in 1986.
nautical mile distance the outer limit of the continental shelf either: (a) coincides with fixed points at each of which the thickness of sedimentary rocks is at least 1 percent of the shortest distance from such point to the foot of the continental slope; or (b) coincides with fixed points not more than 60 nautical miles from the foot of the continental slope.

In its 19 September proclamation Ecuador has apparently relied on Article 76(5) which provides: "the fixed points comprising the line of the outer limits of the continental shelf on the seabed, drawn in accordance with paragraph 4(a) (i) and (ii), either shall not exceed 350 nautical miles from the baselines from which the breadth of the territorial sea is measured or shall not exceed 100 nautical miles from the 2,500 meter isobath, which is a line connecting the depth of 2,500 meters."

Article 76(5) may, however, only be invoked if either of the conditions precedent in Article 76(4) cited above are fulfilled. We believe these conditions cannot be invoked in support of the Ecuadorian position. Therefore, it is the view of the United States that that part of Ecuador's continental shelf claim falling beyond the 200 mile exclusive economic zone off the coasts of the Galapagos Islands and mainland Ecuador are without legal foundation....

Chile has also made a claim to the continental shelf that exceeds the provisions of the LOS Convention. In 1985 Chile claimed a continental shelf of 350 miles around its Pacific Ocean territories of Easter Island and Sala Y Gomez Island.64 Chile, however, failed to prove, under Article 76(4), that the continental shelf extends to 200 miles, much less to 350 miles. The United States protested this claim in May 1986, as have France and the Federal Republic of Germany.

ARCHIPELAGOES

The archipelago concept was established in international law in part IV (Articles 46-54) of the 1982 LOS Convention. By definition, an archipelagic state is a state "constituted wholly by one or more archipelagos and may include other islands" (Article 46). This article defines an 'archipelago' as a

    group of islands, including parts of islands, inter-connecting waters and other natural features which are so closely inter-related that such islands, waters and other natural features form an intrinsic geographical, economic and political entity, or which historically have been regarded as such.

Thus, an archipelagic state must consist wholly of islands. A continental state that has offshore groups of islands may not claim archipelagic status for these islands. Nevertheless, several continental states, including Denmark, Ecuador, Portugal, and Spain,

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64 Chile's claim may be found in the UN Office for Ocean Affairs and the Law of the Sea, The Law of the Sea: National Legislation on the Continental Shelf (UN Sales No. E.89.V.5, 1989), p. 62.
have established straight baselines around their islands in a manner simulating an archipelago. The United States has protested these claims.

To define the archipelago, a state may draw archipelagic baselines meeting certain requirements specified in Article 47. For example, the length of the baselines may not exceed 100 miles, except that up to 3 percent of the total number of baselines may be drawn to a maximum length of 125 miles (paragraph 2). The baselines are to be drawn in such a manner that the area of water to area of land ratio enclosed by the baselines must be between 1:1 and 9:1 (paragraph 1).

A state claiming itself an archipelagic state must give publicity to charts or lists of geographical coordinates that define the archipelago and to deposit such charts or lists with the United Nations (paragraph 9).

Subject to the provisions of Part IV of the LOS Convention an archipelagic state has sovereignty over the waters, airspace, seabed and subsoil enclosed by the archipelagic baselines (Article 49). Within the archipelago, the state may claim internal waters, in accordance with articles 9 (mouths of rivers), 10 (bays), and 11 (ports).

As of February 1992, the following states have claimed archipelagic status--those with an asterix (*) have not specified archipelagic baselines:

- Antigua and Barbuda
- Cape Verde
- Comoros*
- Fiji
- Indonesia
- Kiribati*
- Marshall Islands*
- Papua New Guinea
- Philippines
- Sao Tome & Principe
- Solomon Islands
- Trinidad and Tobago
- Vanuatu
- Saint Vincent and the Grenadines*

A few cases should be noted in which the United States has responded to a particular archipelagic claim.

**Cape Verde:** Cape Verde claimed archipelagic baselines in 1977.65 The law creates 14 basepoints which, when connected, comprise the archipelagic baseline system. Two baseline segments exceed the permissible maximum 125 mile length. The water area enclosed by the archipelagic baselines is 50,546 sq. kilometers; the Cape Verde land area is 4,031 sq. kilometers. The resulting water:land area ratio is 12.54:1, which exceeds the maximum allowable 9:1 ratio. Because of these technical flaws in the law, the United States protested Cape Verde's claim in 1980. Both elements can be corrected with some modification to the baselines.

**Philippines:** In 1961 the Philippines claimed the waters within the limits set out in Article III

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of the Treaty of Paris between the United States and Spain of December 10, 1898, as part of the Philippine territory. It also claimed straight baselines connecting the outer points of the outer islands. The United States protested this claim in May 1961.

On May 8, 1984, the Philippines deposited with its instrument of ratification of the LOS Convention a declaration reaffirming certain understandings regarding the Convention made at the time of its signing. It read, in part:66

1. By signing the Convention by the Government of the Republic of the Philippines shall not in any manner impair or prejudice the sovereign rights of the Republic of the Philippines under and arising from the Constitution of the Philippines.

2. Such signing shall not in any manner affect the sovereign rights of the Republic of the Philippines as successor of the United States of America, under and arising out of the Treaty of Paris between Spain and the United States of America of December 10, 1898, and the Treaty of Washington between the United States of America and Great Britain of January 2, 1930;...

5. The Convention shall not be construed as amending in any manner any pertinent laws and Presidential Decrees of Proclamations of the Republic of the Philippines; the Government of the Republic of the Philippines maintains and reserves the right and authority to make any amendments to such laws, decrees or proclamations pursuant to the provisions of the Philippine Constitution;...

7. The concept of archipelagic waters is similar to the concept of international waters under the Constitution of the Philippines and removes straits connecting these waters with the economic zone or high seas from the rights of foreign vessels to transit passage for international navigation.

In January 1986 the United States protested this declaration. Several other states also protested the Philippine declaration, including Australia, Bulgaria, Czechoslovakia, Ukraine, and the USSR.67

With regard to statements one and five of the Philippine declaration the United States stated that,

...with respect to other States and the nationals of such other States, the rights and duties of states are defined by international law, both customary and conventional. The

rights of states under international law, both customary and conventional. The rights of states under international law cannot be enlarged by their domestic legislation, absent acceptance of such enlargement by affected states. In this regard, the Government of the United States notes that the Constitution of the Philippines declares, 'The waters around, between, and connecting the islands of the archipelago, irrespective of their breadth and dimensions, form part of the internal waters of the Philippines.' The Government of the United States further notes that customary international law, as reflected in the 1982 Law of the Sea convention, does to apply to such waters the regime of internal waters. Therefore, the Government of the United States renews its protests, made in 1961 and 1969, of the claim by the Government of the Republic of the Philippines that such waters constitute internal waters, and the Government of the United States reserves its rights and those of its nationals in this regard.

With regard to the Philippines' second point, the U.S. protest stated that the United States

...does not share its view concerning the proper interpretation of the provisions of those treaties, as they relate to the rights of the Philippines in the waters surrounding the Philippine Islands. The Government of the United States continues to be of the opinion that neither those treaties, nor subsequent practice, has conferred upon the United States, nor upon the Philippines as successor to the United States, greater rights in the waters surrounding the Philippine Islands than are otherwise recognized in customary international law.

With regard to the Philippine's point number seven, the United States stated that it

...wishes to observe that, as generally understood in international law, including that reflected in the 1982 Law of the Sea Convention, the concept of internal waters differs significantly from the concept of archipelagic waters. Archipelagic waters are only those enclosed by properly drawn archipelagic baselines and are subject to the regimes of innocent passage and archipelagic sea lanes passage. The Government of the United States further wishes to point out that straits linking the high seas or exclusive economic zone with archipelagic waters, as well as straits within archipelagic waters, are, if part of normal passage routes used for international navigation or overflight through or over archipelagic waters, subject to the regime of archipelagic sea lanes passage.

NAVIGATION AND OVERFLIGHT RIGHTS

Right of Innocent Passage

One of the fundamental tenets in the international law of the sea is the right enjoyed by all ships of every state to innocent passage through another state's territorial sea. The LOS Convention provides definitions for the meaning of "passage" (Article 18) and of "innocent passage" (Article 19), and lists those activities considered to be non-innocent and
"prejudicial to the peace, good order or security of the coastal State" (Article 19 (2)a-1).

The United States reaffirmed its position on innocent passage in the 1988 Presidential Proclamation No. 5928 (by which the U.S. territorial sea was extended to 12 miles) which states, in part,\textsuperscript{66}

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

Since 1986 government officials from the United States and the Soviet Union have met periodically to discuss certain international legal aspects of traditional uses of the oceans and, in particular, navigation. In 1989 the two countries issued a joint statement adopting a uniform interpretation of the rules of international law governing innocent passage through the territorial sea which all governments were urged to accept (see Annex III for the full text).

The highlights of this joint statement include the following:

- The LOS Convention is cited as containing the relevant rules of international law governing innocent passage of ships in the territorial sea.

- All ships, including warships, regardless of cargo, armament, or means of propulsion, enjoy the right of innocent passage, for which neither notification nor authorization is required.

- The list set out in Article 19(2) is an exhaustive list of activities that would render passage not innocent. A ship not engaging in any of these listed activities is in innocent passage.

- A coastal state that questions whether a ship is in innocent passage must give that ship an opportunity to clarify its intentions, or to correct its conduct.

- Ships exercising the right of innocent passage must abide by all laws and regulations of the coastal state adopted in conformity with international law, as reflected in Articles 21, 22, 23, and 25 of the LOS Convention.

- If a warship acts in a manner contrary to innocent passage, and does not correct is action upon the coastal state's request, the coastal state may require it to leave the territorial sea, in accordance with Article 30. In such cases the warship shall do so immediately.

Without prejudice to the exercise of rights of coastal and flag states, all differences regarding a particular case of innocent passage shall be resolved between the coastal state and the flag state through diplomatic channels or other agreed means.

**Permissible Restrictions on Innocent Passage**

For purposes such as resource conservation, environmental protection, and navigational safety, a coastal state may establish certain restrictions upon the exercise of innocent passage of foreign vessels. Such restrictions must be reasonable and necessary and not have the practical effect of denying or impairing the right of innocent passage. The restrictions must not discriminate in form or in fact against the ships of any state or those carrying cargoes to, from, or on behalf of any state. According to Article 21 of the LOS Convention, the coastal state may, where navigational safety dictates, require foreign ships exercising the right of innocent passage to utilize designated sea lanes and traffic separation schemes.

Tankers, nuclear powered vessels, and ships carrying dangerous noxious substances may be required, for safety reasons, to utilize designated sea lanes (Article 22(2)).

Article 21 of the LOS Convention empowers a coastal state to adopt, with due publicity, laws and regulations relating to innocent passage through the territorial sea in respect of all or any of the following eight subject areas (which do not include security):

1. The safety of navigation and the regulation of marine traffic (including traffic separation schemes).
2. The protection of navigation aids and facilities and other facilities or installations.
3. The protection of cables and pipelines.
4. The conservation of living resources of the sea.
5. The prevention of infringement of the fisheries regulations of the coastal state.
6. The preservation of the environment of the coastal state and the prevention, reduction and control of pollution thereof.
7. Marine scientific research and hydrographic surveys.
8. The prevention of infringement of the customs, fiscal, immigration or sanitary or regulations of the coastal state.

This list is exhaustive and inclusive.
Temporary Suspension of Innocent Passage

A coastal state may suspend innocent passage temporarily in specified areas of its territorial sea, when it is essential for the protection of its security. Such a suspension must be preceded by a published notice to the international community and may not discriminate in form or in fact among foreign ships (Article 25(3)). In the U.S., authorization to suspend innocent passage in the territorial sea during a national emergency is given to the President in 50 U.S.C., sec. 191.69

International law does not define how large an area in the territorial sea may be temporarily closed off to innocent passage. Since the maximum permissible breadth for the territorial sea is 12 miles, any suspension of passage seaward of this limit certainly would be contrary to international law. "Protection of its security" is not explicitly defined beyond the example of "weapons exercises" added to the LOS Convention. The length of "temporarily" is not specified, but clearly is not to be factually permanent. The prohibition against "discrimination in form or fact among foreign ships" clearly refers to discrimination among flag states and, in the view of the United States, includes direct and indirect discrimination on the basis of cargo or propulsion. This position is strengthened by the provisions in the LOS Convention explicitly dealing with nuclear-powered and nuclear-capable ships (Articles 22(2) and 23).

In response to a 1986 Sri Lanka Notice to Mariners which purported to require that, with certain exceptions, all vessels must obtain permission before entering Sri Lanka's territorial sea, the United States protested in a note which read, in part:70

The Government of the United States acknowledges the efforts of the Government of Sri Lanka to interdict maritime activities of armed anti-government groups. The United States Government recognizes the right of the Government of Sri Lanka under customary international law as reflected in article 25 of the 1982 Convention on the Law of the Sea to prevent passage which is not innocent and to suspend temporarily, in specified areas of its territorial sea, innocent passage of foreign ships if such suspension is essential to its security. However, the Notice to Mariners is not in accordance with the right of innocent passage because the suspension of innocent passage is overly broad and because the duration of the suspension is not indicated as being temporary.

Sri Lanka replied to this note assuring the United States that the suspension was done "as a measure essential for the protection of Sir Lanka's security" and that it was "a temporary measure". The note also stated that the Notice to mariners "ensures that the right of innocent passage in routes used for international maritime traffic are not interfered with."71

69 See also 33 C.F.R. part 127. "Security" includes suspending innocent passage for weapons testing and exercises.
70 Diplomatic Note No. 137, September 12, 1986 from the American Embassy at Colombo.
71 For other instances in which states have sought to suspend innocent passage, see 4 Whiteman, Digest of International Law 379-86 (1965).
Excessive Restrictions on Innocent Passage

A concern of many maritime states pertains to requirements placed by coastal states on certain types of ships either prior to entering the territorial sea or on the transit itself. The following analysis highlights the types of restrictions the United States finds excessive under international law.

Time Limits for passage and prohibited zones

In 1985 Libya announced unique regulations which, inter alia, permitted innocent passage through its territorial sea by commercial ships in daylight hours only, provided prior information (at least 12 hours in advance of the proposed transit) is given to Libyan authorities. All ships were to remain out of certain prohibited zones located in the territorial sea (map 4, page 12).

The United States protested these claims in a note verbale to the Secretary-General of the United Nations and noted that the regulations, 72

...do not appear to be limited in their application to vessels intending to call to Libyan ports, but rather that they address themselves to vessels exercising the internationally recognized right of innocent passage. With regard to the said regulations 6 and 7, the Government of the United States makes the following observations: first, the right of innocent passage is one that under long-standing principles of international law may be exercised by all vessels, whether or not engaged in commercial service; second, international law does not permit a coastal state to limit innocent passage of vessels through its territorial sea to certain periods of time, such as daylight hours only; third, under long-standing principles of international law, the coastal State may not claim to condition the right of innocent passage upon prior notification to it.

The United States further notes that regulation 10 of the said Notice to Mariners requires that vessels strictly comply with directives pertaining to the so-called prohibited zones specified in that regulation. In this regard, the United States observes that zones A, B, and D [in the vicinity of Tripoli] are all areas within the territorial sea of Libya and therefore subject to innocent passage by vessels of all States. International law does not permit a coastal State to subject an area of its territorial sea to a permanent prohibition of navigation....

72 USUN note dated July 10, 1985 circulated to the permanent missions to the UN by UN Doc. NV/85/11, 10 July 1985; reproduced in UN Law of the Sea Bulletin No. 6, October 1985, p.40.
In 1981 Finland prohibited innocent passage through fortified areas or other declared areas of the Finnish territorial sea to be of military importance, and prohibited the arrival of vessels in such areas except between sunrise and sunset.\footnote{Decree No. 656/80 of January 1, 1981 amending Decree no. 185 of April 18, 1963.}

The U.S. protest note stated, in part:\footnote{Note Verbale No. 92 of June 6, 1989.}

...the right of innocent passage through the territorial sea extends to the whole of the territorial sea except as it may be suspended temporarily when such suspension is essential for the protection of security of the coastal state and is duly published. This limited right to suspend innocent passage is recognized in customary international law as reflected in Article 25 of the 1982 United Nations Convention on the Law of the Sea, as well as in the second paragraph of Article 9 of aforesaid Finnish Decree.

**Passage Limited to Sea Lanes**

In the same 1981 decree Finland claimed (1) that compulsory pilotage of warships was required when navigating Finnish territorial sea, and (2) public sea lanes as specially regulated were to be used. The U.S. protested both these requirements. The specific articles in Finland's decree do not specify the criteria to be used in specially regulating public sea lanes. The following talking point was provided to the U.S. Embassy for use in presenting the U.S. protest of this requirement:\footnote{State telegram 174994, June 2, 1989.}

Customary international law, as reflected in Article 22 of the Law of the Sea Convention, permits a coastal state to establish sea lanes in its territorial sea where needed for the safety of navigation, after taking into account the recommendations of the competent international organization [i.e., the International Maritime Organization]; any channels customarily used for international navigation; the special characteristics of particular ships and channels; and the density of traffic.


Foreign warships and underwater vehicles shall enjoy the right of innocent passage through the territorial waters (territorial sea) of the USSR in accordance with the procedure to be established by the Council of Ministers of the USSR.

Then, in 1983, the Soviet government published rules for warship navigation in the Soviet territorial sea.\footnote{Rules for Navigation and Sojourn of Foreign Warships in the Territorial and Internal Waters and Ports of the USSR; ratified by the Council of Ministers Decree No. 384 of April 25, 1983. Found in 24 International Legal Materials 1717 (1985).} In these rules the Soviet Union provided for the innocent passage of
foreign warships only in limited areas of the Soviet territorial sea in the Baltic, the Sea of Okhotsk, and in the Sea of Japan.

In March 1986, two U.S. warships, the USS CARON and USS YORKTOWN, exercised the right of innocent passage through the Soviet territorial sea in the Black Sea. The incident created an exchange of protest notes by both sides. The Soviet Union accused the United States of violating Soviet borders. The United States rejected the Soviet assertions by stating, in part,

The transit of the USS Yorktown and USS Caron through the claimed Soviet territorial sea on March 13, 1986 was a proper exercise of the right of innocent passage, which international law, both customary and conventional, has long accorded ships of all states. The exercise of the right of innocent passage is in no way a violation of a country's territorial sea nor is it "provocative"; it is, rather an essential part of the international law regime of the territorial sea. The right of ships of all states to engage in innocent passage without prior notification to, or permission of, coastal state is firmly grounded in international law...The right of innocent passage may be exercised by all types of vessels, whether they are traversing the territorial sea in connection with a call at a port or traversing the territorial sea without making such a call....

Two years later the same two U.S. warships were again involved in an incident in the Black Sea. On February 12, 1988 two Soviet vessels "bumped" the two U.S. Navy ships in the Soviet territorial sea (map 9).

Map 9
In an unpublished article offered to major newspapers, the United States stated, in part,\textsuperscript{76}

Our disagreement with the USSR involves Soviet efforts to limit, indeed virtually to abrogate, the right of innocent passage for warships through the Soviet territorial sea. According to Soviet legislation, foreign warships may exercise innocent passage in only five specified locations out of the thousands of miles of Soviet coastline. The Soviets made no provisions for innocent passage in the Black Sea.

The issue of innocent passage of warships was resolved between the United States and the Soviet Union by the issuance of the Joint Statement with attached Uniform Interpretation of the Rules of Innocent Passage signed by Secretary Baker and Foreign Minister Shevardnadze on September 23, 1989 (see earlier description, p. 48, and Annex III). This understanding clearly reflects the right of warships to conduct innocent passage through the territorial sea.

**Prior Notice or Permission for Warship Innocent Passage**

\textsuperscript{76} Memorandum of Mary V. Mochary, Principal Deputy Legal Adviser, U.S. Department of State to the Assistant Secretary for Public Affairs, April 26, 1988.
The innocent passage of warships through the territorial sea has been a much debated issue in the international community. This issue received much attention during the general debates in the closing days of UNCLOS III. Gabon, for example, introduced a formal amendment to Article 21 that would have given the coastal state the right to require prior authorization and notification of warships for passage through the territorial sea.79 States which made statements in favor of restricting the innocent passage of warships included Albania, Benin, China, Iran, Malta, North Korea, and Pakistan. States speaking in favor of the right of innocent passage without prior notification or authorization included the United States, France, Thailand, the Federal Republic of Germany, and the United Kingdom. Following the debate the amendment was withdrawn.

During this debate the United States made the following comment:60

Some speakers spoke to the right of innocent passage in the territorial sea and asserted that a coastal State may require prior notification or authorization before warships or other government ships on non-commercial service may enter the territorial sea. Such assertions are contrary to the clear import of the Convention's provisions on innocent passage. Those provisions, which reflect long-standing international law, are clear in denying coastal State competence to impose such restrictions. During the eleventh session of the Conference formal amendments which would have afforded such competence were withdrawn. The withdrawal was accompanied by a statement read from the Chair, and that statement clearly placed coastal State security interests within the context of articles 19 and 25. Neither of those articles permits the imposition of notification or authorization requirements on foreign ships exercising the right of innocent passage.

About a month before the final day of the UNCLOS III Ambassador Koh, the Conference President, during an address at a symposium, stated:81

I think the Convention is quite clear on this point. Warships do, like other ships, have a right of innocent passage through the territorial sea, and there is no need for warships to acquire the prior consent or even notification of the coastal State.

As noted earlier the U.S. and the Soviet Union have jointly stated that:82

All ships, including warships, regardless of cargo, armament or means of propulsion, enjoy the right of innocent passage through the territorial sea in accordance with international law, for which neither prior notification nor authorization is required.

82 The Uniform Interpretation of the Rules of Innocent Passage, attached to the Joint Statement signed by U.S. Secretary of State Baker and Soviet Foreign Minister Shevardnadze September 23, 1989, Annex III.
Enforcement of Violations

In 1981 Malta implemented a law which gave the Prime Minister the power to make and enforce regulations to control the passage of ships through the territorial sea. The regulations may relate to the arrest, detention and seizure of ships "and such other power as necessary" to ensure compliance with "any law, rule, regulation or order" and include the imposition of punishments, including imprisonment.\(^{83}\)

The United States, in its protest of this law, stated that:\(^{84}\)

...wishes to express its concern that Section 5 of the Territorial Waters and Contiguous Zones Act makes no reference to the internationally recognized right of innocent passage.

State practice on warship innocent passage

Over 40 states currently have excessive claims to control the entry of foreign warships into the territorial sea (see Graph 2). These claims range from requiring permission or notification prior to entry into the territorial sea to specifying the maximum number of warships allowed in the territorial sea at one time. The United States has been diligent to protest these claims.

An example of a portion of U.S. statement on this subject is the 1984 U.S. aide-memoire to Sweden:\(^{85}\)

...In stating this position, and in exercising its right of warship innocent passage in accordance with the international law, the United States implies no disregard for the sovereignty of Sweden or for its rights in the territorial sea. Innocent passage of any vessel, including a warship, is the continuous and expeditious transit of such a vessel in a manner not prejudicial to the peace, good order or security of the coastal State. United States warships engaged in innocent passage adhere strictly to the requirements of international maritime law and practice regarding the modalities of innocent passage. Thus, for example, submarines must navigate on the surface and fly their national flags. Ships may neither launch nor recover aircraft, and there may be no exercise or practice with weapons. The passage of United States warships under such conditions poses no threat to the security of the coastal State and constitutes no violation of its territorial sovereignty.

Protests to claims involving pre-conditions for warship innocent passage have been lodged

\(^{83}\) Malta Act XXVIII of 1981 may be found in UN Doc. LE 113 (3-3), November 16, 1981.

\(^{84}\) Protest note dated October 16, 1981.

\(^{85}\) Aide-memoire dated December 4, 1984 from the American Embassy at Stockholm.
by the United States to the following states.\textsuperscript{86}

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\textsuperscript{86} In 1985 the German Democratic Republic claimed the foreign warships needed prior permission. The United States protested the claim in 1986. After German unification this requirement is not being claimed by Germany.

\textsuperscript{87} Prior to its merger into one country both Yemen (Aden) and Yemen (Sanaa) claimed that foreign warships required prior permission or notification before entering the territorial sea. The United States protested the Aden claim in 1982, the Sanaa claim in 1986.
Other restrictions on innocent passage

Several states have claimed illegal restrictions on innocent passage of nuclear-powered warships. The United States has protested all these claims.

In 1977 the People's Democratic Republic of Yemen - Yemen (Aden) - claimed that "foreign nuclear-powered ships or ships carrying nuclear material shall give...prior notification..." The United States protested saying, in part:

...that the internationally recognized legal right of innocent passage through the territorial sea may be exercised by all ships, regardless of type of cargo, and may not in any case be subjected to a requirement of obtaining prior authorization from or giving notice to the coastal State...

The Yemen Arab Republic, which merged with Yemen-Aden on May 22, 1990, made a similar claim to require prior permission in 1982 when it signed the LOS Convention. The United States protested on October 6, 1986.

Pakistan, in its 1977 law, claimed that "foreign super-tankers, nuclear-powered ships and ships carrying nuclear or other inherently dangerous or noxious substances or materials may enter or pass through the territorial waters after giving prior notice to the Federal Government." The United States protested on June 8, 1982.

Djibouti's claim that "foreign vessels with nuclear propulsion or transportation of nuclear materials or other radioactive substances must inform Djibouti beforehand about their entrance and crossing of Djibouti territorial waters" was protested by the United States on May 22, 1989.

Egypt, upon deposit of its instrument of ratification of the LOS Convention made a declaration which stated that nuclear-powered ships and ships carrying nuclear substances required Egyptian authorization prior to entering its territorial sea. The United States protested this claim in February 1985.

Roll Back of Claims

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88 Yemen Act No. 45 of 1977.
89 Protest note dated August 2, 1982.
90 Pakistan's Territorial Waters and Maritime Zones Act, 1976, may be found in UN Legislative Series, National Legislation and Treaties Relating to the Law of the Sea, UN Sales No. E/F.80.V.3, at 86 (1980).
91 Djibouti Law No. 52/AN/78 may be found in Robert W. Smith, Exclusive Economic Zone Claims (Martinus Nijhoff Publishers, Dordrecht, 1986) at 111.
Turkey, in 1979, implemented Decree 7/17114 which required foreign warships to provide prior notice before transiting the Turkish territorial sea. The United States protested the claim on December 4, 1979. The Turkish government notified the State Department in May 1985 that this decree,\(^5\)

...has been cancelled by the Directive dated November 24, 1983, No.83/7467. [From] then on foreign warships transiting territorial seas of Turkey are subject to the general provisions of international law.

The Soviet Union modified its claim restricting innocent passage of foreign warships on September 20, 1989. Bulgaria's requirement for prior permission was replaced in its July 8, 1987 Act, with a limitation of innocent passage to designated sea lanes.

**INTERNATIONAL STRAITS**

**Legal Regime**

Part III of the LOS convention addresses five different kinds of straits used for international navigation, each with a distinct legal regime:

1. Straits connecting one part of the high seas/EEZ and another part of the high seas/EEZ (Article 37- governed by transit passage).

2. Straits connecting a part of the high seas/EEZ and the territorial sea of a foreign state (Article 45(1) (a)- regulated by nonsuspendable innocent passage).

3. Straits connecting one part of the high seas/EEZ and another part of the high seas/EEZ where the strait is formed by an island of a state bordering the strait and its mainland, if there exists seaward of the island a route through the high seas/EEZ of similar convenience with regard to navigation and hydrographic characteristics (Article 38(1)- regulated by nonsuspendable innocent passage).

4. Straits regulated in whole or in part by international conventions (Article 35(c)). The LOS Convention does not alter the legal regime in straits regulated by long-standing international conventions in force specifically relating to such straits.

5. Straits through archipelagic waters governed by archipelagic sea lanes passage (Article 53(4)).

**Transit passage**

Straits used for international navigation through the territorial sea between one art of the

\(^5\) Turkish Embassy letter 780-144, May 2, 1985, to the Office of The Geographer, U.S. Department of State.
high seas or the EEZ and another part of the high seas or EEZ, category one described above, are subject to the legal regime of transit passage. Transit passage is defined in the LOS Convention (Articles 38(2) and 39(1) (c)) as the exercise of the freedom of navigation and overflight solely for the purpose of continuous and expeditious transit in the normal modes of operation utilized by ships and aircraft for such passage. This means that submarines are free to transit international straits submerged, since that is their normal mode of operation; surface warships may transit in a manner consistent with sound navigation practices and the security of the force, including formation steaming and the launching and recovery of aircraft. All transiting ships and aircraft must proceed without delay; must refrain from the threat or the use of force against the sovereignty, territorial integrity, or political independence of states bordering the strait; and must otherwise refrain from any activities other than those incidental to their normal modes of continuous and expeditious transit (Article 39(1)).

Transit passage through international straits cannot be suspended by the coastal state for any purpose (Article 44). The state bordering the international strait may designate sea lanes and prescribe traffic separation schemes to promote navigational safety. However, such sea lanes and separation schemes must be approved by the competent international organization in accordance with generally accepted international standards. Ships in transit must respect properly designated sea lanes and traffic separation schemes (Articles 41(1) and 41(3)).

The U.S. position on transit passage is well known. In the Proclamation extending the territorial sea of the United States, President Reagan stated:

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

In a December 1984 aide-memoire delivered to Sweden the United States described the legal regime followed by U.S. warships navigating through international straits:

...warships of the United States navigate through territorial seas in straits used for international navigation in accordance with international law as reflected in Part III of the 1982 Convention of the Law of the Sea. As is true of innocent passage in non-strait waters, exercise of the appropriate navigational regime in straits poses no threat to the security of the coastal State and constitutes no violation of its territorial integrity.

It is the position of the United States that transit passage also applies in the approaches to international straits. In a telegram to the U.S. Embassy in Santiago, Chile the State Department discussed the rights of navigation through the Strait of Magellan and the

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95 Aide-memoire of December 4, 1984, from the American Embassy at Stockholm.
Beagle Channel: 96

The fact that a vessel navigating through [an international strait] (or a aircraft overflying it) would have to traverse an area of Argentine territorial sea is a matter of no legal consequence. It is an extremely rare occurrence for a strait to be so configured that a vessel can enter it without traversing some extent of territorial sea before reaching the headlands. It is, nevertheless, the firm position of the USG that the regime of transit passage applies not only to the territorial sea actually within the strait, but also to those in the approaches to it. The presence of Argentine territorial sea outside the eastern end of the strait no more "blocks" it than does the presence of Chilean territorial sea outside the western end.

The same position was taken in 1988 with regard to the approaches to the Strait of Hormuz. A U.S. Navy telegram stated, in part: 97

...the regime [of transit passage] applies not only in or over the waters overlapped by territorial seas but also throughout the strait and in its approaches, including areas of the territorial sea that are overlapped. The Strait of Hormuz provides a case in point: although the area of overlap of the territorial seas of Iran and Oman is relatively small, the regime of transit passage applies throughout the strait as well as in its approaches including areas of the Omani and Iranian territorial seas not overlapped by the other.

Innocent passage

The regime of innocent passage, rather than transit passage, applies in straits used for international navigation that connect a part of the high seas or EEZ with the territorial sea of a coastal state. There may be no suspension of innocent passage through such straits (Article 45). Included in this category are Head Harbour Passage (leading through Canadian territorial sea b the United States' Passamaquoddy Bay), and the Bahrain-Saudi Arabia Passage.

Navigation Regimes of Particular Straits

The United States position on navigation through international straits and its response to the excessive claims can best be illustrated by looking at particular international straits. The following examples, however, do not include all straits the United States considers subject to the transit passage regime.

Aland Strait

96 1984 State telegram 375513.
When it signed the LOS Convention Sweden declared, in part:98

It is the understanding of the Government of Sweden that the exception from the transit regime in straits provided for in Article 35(c) of the Convention is applicable to the strait between Sweden and Denmark (Oresund) as well as to the strait between Sweden and Finland (the Aland islands). Since in both those straits the passage is regulated in whole or in part by long-standing international conventions in force, the present legal regime in the two straits will remain unchanged after the entry into force of the Convention.

In claiming the Aland Strait- the 16 mile wide entrance to the Gulf of Bothnia- as an exception to the transit passage regime, Sweden relies on the fact that passage in that strait is regulated in part by the Convention relating to the Non-fortification and Neutralization of the Aland Islands.99 It should be noted that under Article 4.II of this Convention, the territorial sea of the Aland Islands extends only "three marine miles" from the low water line. The Convention therefore is not applicable to all the waters that form the strait. The United States, which is not a party to this Convention, has never recognized this international strait as falling within the Article 35(c) exception.

**Bab el Mandeb**

This strategically important strait links the Red Sea and the Suez Canal of the Gulf of Aden and the Arabian Sea. When it signed the LOS Convention in 1982 the Yemen Arab Republic declared that warships are warplanes must obtain permission prior to passing through or over its "territorial waters", including international straits.100 The United States protested this claim stating, in part:101

...the Government of the Yemen Arab Republic may not legally condition the exercise of the right of transit passage through or over an international strait, such as Bab-el-Mandeb, upon obtaining prior permission. Transit passages is a right that may be exercised by ships of all nations, regardless of type or means of propulsion, as well as by aircraft, both state and civil. While warplanes and other state aircraft normally require prior authorization before overflying another State's territory, authorization is not required for the exercise of the right of straits transit passage under customary law as reflected in Article 32 of the Convention....

**Bosphorus and Dardanelles**

These straits, connecting the Aegean Sea and the Black Sea, are governed by the Montreux Convention of July 20, 1936 and therefore fall under the LOS Article 35(c)
exception.\textsuperscript{102}

**Gibraltar**

Upon signing the LOS Convention in 1984, Spain made several claims of coastal authority over the transit passage rights of aircraft and vessels.\textsuperscript{103} The United States protested Spain's declaration in 1985 because Spain attempted to impose upon aircraft in general, and state aircraft (military, customs, and police aircraft) in particular, obligations that the customary international law reflected in the LOS Convention neither imposes nor permits.\textsuperscript{104}

**Hormuz**

The Strait of Hormuz provides the sole entrance and exit of the Persian Gulf (map 10). Iran and Oman are the riparian states to the Strait. When signing the LOS Convention in 1982 Iran made a declaration stating, in part:\textsuperscript{105}

…it seems natural…that only States parties to the Law of the Sea Convention shall be entitled to benefit from the contractual rights created therein. The above considerations pertain specifically (but not exclusively) to the following: The right of transit passage through straits used for international navigation….

On April 30, 1987, the Algerian Embassy in Washington delivered a Diplomatic Note transmitting a communication from Iran concerning the right of transit passage through the Strait of Hormuz in the context of an alleged violation of claimed Iranian territorial waters. The United States replied to the Iranian note by saying:\textsuperscript{106}

…the United States...particularly rejects the assertions that the...right of transit passage through straits used for international navigation, as articulated in the [LOS] Convention, are contractual rights and not codification of existing customs or established usage. The regimes of...transit passage, as reflected in the Convention, are clearly based on customary practice of long standing and reflects the balance of rights and interests among all States, regardless of whether they have signed or ratified the Convention….

\textsuperscript{102} Montreux Convention, 173 L.N.T.S. 213, 31 American Journal of International Law, Supp.4.
\textsuperscript{103} Spain's declaration may be found in UN Status of LOS Convention, p.25.
\textsuperscript{104} Diplomatic Note No. 806, August 14, 1985 from the American Embassy in Madrid.
\textsuperscript{105} See UN, Status of LOS Convention, p.18.
\textsuperscript{106} Diplomatic Note of August 17, 1987, to the Democratic and Popular Republic of Algeria.
Strait of Magellan

Navigation through the Strait of Magellan is governed by Article V of the Boundary Treaty between Argentina and Chile of July 23, 1881, which states that the straits are neutralized forever, and free navigation is assured to the flags of all nations. Article 10 of the Treaty of Peace and Friendship between Argentina and Chile of November 29, 1984, reaffirms this status. This article states that "the delimitation agreed upon herein, in no way effects the provisions of the Boundary Treaty of 1881, according to which the Straits of Magellan are perpetually neutralized and freedom of navigation is assured to ships of all flags under the terms of Art. 5 of said Treaty."

107 82 Brit. Foreign and State Papers 1103, 159 Parry's T.S. 45.  
In concluding that the Strait of Magellan fell under the LOS Article 35(c) exception, the State Department has stated that,\textsuperscript{109}

This long-standing guarantee of free navigation for all vessels [in the 1881 Treaty] has been amply reinforced by practice, including practice recognizing the right of aircraft to overfly.\textemdash Essentially, the USG position would be that of the 1881 Treaty and over a century of practice have imbued the Strait of Magellan with a unique regime of free navigation, including the right of overflight. That regime has been specifically recognized and reaffirmed by both Argentina and Chile in the Beagle Channel Treaty. Hence, the United States and other States may continue to exercise navigational and overflight rights and freedoms in accordance with this long-standing practice.

\textbf{Strait of Messina}

The Strait of Messina separates the Italian island of Sicily from Italy's mainland. This strait comes under category three, listed on page 60, which connects one part of the high seas/EEZ and another part of the high seas/EEZ where the strait is formed by an island of a state bordering the strait and its mainland.

Effective April 3, 1985, Italy closed the strait to vessels 10,000 tons and over carrying oil and other pollutants, as well as instituting compulsory pilotage for ships over 5,000 tons carrying oil and other pollutants and for ships over 10,000 tons regardless of cargo while transiting the strait. This action was taken following a collision at sea resulting in an oil spill in the area.

The United States submitted a diplomatic note on Italy on April 5, 1985, making the following observations:

As the Government of the United States understands it, this decree is not intended to apply to warships or other governmental ships on non-commercial service exercising the right of innocent passage.

It is the understanding...that this prohibition on navigation through the Strait of Messina by specified vessels, and this requirement of pilotage for others, is intended to give the Government of Italy time in which to formulate proposals for the regulation of maritime traffic in the strait.

...the Strait of Messina is a strait used for international navigation, to which...the regime of non-suspendable innocent passage applies. The regime of innocent passage is one that may be exercised by vessels of all States, regardless of type of cargo. By purporting to prohibit navigation through the Strait of Messina by vessels of specified size carrying specified cargo, the Government of Italy appears to be attempting to\textsuperscript{109} State Department telegram 375513, December 21, 1984.
suspend the right of innocent passage for such vessels, in contravention of long-settled customary and conventional international law...

Furthermore, the Government of the United States must express its objection to the requirement, in the decree, that certain other vessels require pilots in order to exercise the right of innocent passage...[t]his requirement is inconsistent with the regime of non-suspendable innocent passage that applies in the Strait of Messina.

**Northeast Passage**

The Northeast Passage is situated in the Arctic Ocean, north of the Soviet Union and includes the Dmitry, Laptev and Sannikov Straits. The United States conducted oceanographic surveys in this area during the summers of 1963 and 1964. During the 1963 survey the USCGC Northwind collected data in the Laptev Sea; during the following summer the USS Burton Island surveyed in the East Siberian Sea. On July 21, 1964 the Soviet government presented the American Embassy in Moscow an aide-memoire regarding the Burton Island survey. The following are excerpts from this communication:

...The Northern seaway route is situated near the Arctic coast of the USSR. This route, quite distant from international seaways, has been used and is used only by ships belonging to the Soviet Union or chartered in the name of the Northern Seaways...

It should also be kept in mind that the northern seaway route at some points goes through Soviet territorial and internal waters. Specifically, this concerns all straits running west and east in the Karsky Sea. Inasmuch as they are overlapped two-fold by Soviet territorial waters, as well as by the Dmitry, Laptev and Sannikov Straits, which unite the Laptev and Eastern Siberian Seas and belong historically to the Soviet Union. Not one of these stated straits, as is known, serves for international navigation. Thus over the waters of these straits the statute for the protection of the state borders of the USSR fully applies, in accordance with which foreign military ships will pass through territorial seas and enter internal waters of the USSR after advance permission of the Government of the USSR....

On June 22, 1965, the United States replied stating, in part:110

While the United States is sympathetic with efforts which have been made by the Soviet Union in developing the Northern Seaway Route and appreciates the importance of this waterway to Soviet interests, nevertheless, it cannot admit that these factors have the effect of changing the status of the waters of the route under international law. With respect to the straits of the Karsky Sea described as overlapped by the Soviet territorial waters it must be pointed out that there is a right of innocent passage of all ships through straits used for international navigation between two parts of the high seas and that this right cannot be suspended....In the case of straits comprising high

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seas as well as territorial waters there is of course unlimited right of navigation in the high seas areas...

For the reasons indicated the United States must reaffirm its reservations of its rights and those of its nationals in the waters in question whose status it regards as dependent on the principles of international law and not decrees of the coastal state.

The Northwind conducted its transit from July to September of 1965.

In the summer of 1967 the United States planned an Arctic circumnavigation by the U.S. Coast Guard icebreakers Edisto and East Wind. The U.S. advised the Soviet government of the planned route which would have taken the ships north of Novaya Zemlya and Severnaya Zemlya into the Laptev Sea and the East Siberian Sea and that the oceanographic surveys would be conducted entirely in international waters.¹¹¹ Due to ice conditions along this route the ships entered the Karsky Sea and were proceeding towards the Vilkitsky Straits.¹¹²

The Soviet government reiterated, by a written aide-memoire (on August 24) and by an oral demarche (on August 28) its position that these straits were Soviet waters and that the U.S. had not advised the Soviet authorities of the proposed passage thirty days in advance, as required by Soviet regulations.

The U.S. terminated its circumnavigation and delivered a note to the Soviet government reiterating its position stating, in part:¹¹³

...strongly protests the position taken by the Soviet government with regard to the peaceful circumnavigation of the Arctic by the United States Coast Guard icebreakers Edisto and Eastwind.

...the circumnavigation ...was undertaken as a part of regular scientific research operations in the Arctic Ocean. The Department of State, as a matter of courtesy, informed the Soviet Government of these operations. Owing to unusually severe ice conditions the icebreakers failed in their efforts to pass north of Severnaya Zemlya and, accordingly, on August 24, Embassy informed the Ministry by note that the vessels would find it necessary to pass through Vilkitsky Straits in order to continue their voyage...[the Soviet government] has taken the unwarranted position that the proposed passage of the Edisto and Eastwind would be in violation by Soviet regulations, raising the possibility of action by the Soviet Government to detain the vessels or otherwise interfere with their movement.

These statements and actions of the Soviet Government have created a situation which

¹¹¹ This information was conveyed by a diplomatic note dated August 14, 1967.
¹¹² The Soviet Union was notified of this change in course by Note No. 340 delivered by the American Embassy on August 24, 1967.
¹¹³ Diplomatic note dated August 30, 1967.
has left the United States Government with no other feasible course but to cancel the
planned circumnavigation. In doing so, however, the United States Government wishes
to point out that the Soviet Government bears full responsibility for denying to United
States vessels their rights under international law....

**Northwest Passage**

The United States and Canada have a long-standing dispute over the legal status of the
waters of the Northwest Passage between Davis Strait/Baffin Bay and the Beaufort Sea
(see map 6, p.22). The United States considers the passage a strait used for international
navigation subject to the transit passage regime. Canada considers these waters to be
Canadian and that controls can be applied to the passage, including requirements for prior
authorization of the transit of all non-Canadian vessels.

U.S. Coast Guard Cutters transited the Northwest Passage in 1952 and 1957. In 1969 the
*S.S. Manhattan*, accompanied by the U.S. Coast Guard Cutters *Northwind* and *Staten
Island*, transited this Passage. Following the *S.S. Manhattan* transit, Canada, in 1970,
enacted its Arctic Waters Pollution Prevention Act to address the fragile Arctic
environment and to prevent potential damage by vessel-source pollution. In the same year the U.S.
protested the validity of the law because of the law's interference with navigational rights
and freedoms.114

In 1985 several diplomatic notes were exchanged regarding an upcoming transit of the
Northwest Passage by the U.S. Coast Guard icebreaker *Polar Sea*. In May of that year the
U.S. informed the Canadian government that due to the operational requirements the *Polar
Sea* would be navigating the Northwest passage in August and invited Canadian Coast
Guard personnel to participate. The United States also informed Canada that it considers
this transit115

will be an excuse of navigational rights and freedoms not requiring prior notification.
The United States appreciates that Canada may not share this position.

Canada, in a June 11 diplomatic note, replied by inter alia, restating its position that the
waters of the Northwest Passage were Canadian internal waters.116 The United States
responded by stating in part that,117

...although the United States is pleased to invite Canadian participation in the transit, it

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114 The United States continues to object to the application of the law in so far as it purports to apply to
sovereign immune vessels. The United States believes that internationally agreed standards should be
developed to replace many of the unilateral provisions. However, the United States considers U.S.
commercial vessels subject to this law. The United States has agreed to consult with Canada in the
development of standards and operational procedures to facilitate commercial navigation in the Arctic.
117 Diplomatic Note No. 222, June 24, 1985.
has not sought the permission of the Government of Canada, nor has it given Canada notification of the fact of transit.

Canada responded by stating that it,\textsuperscript{118}

...noted with deep regret that the United States remains unwilling, as it has been for many years, to accept that the waters of the Arctic archipelago, including the Northwest Passage, are internal waters of Canada and fall within Canadian sovereignty.

...In this regard, the Government of Canada indeed shares the view of the United States, communicated in the State Department's Note No. 222 of June 24, 1985 that "the transit, and the preparations for it, in no way prejudice their juridical position of either side regarding the Northwest Passage."

This information and these assurances have satisfied the Government of Canada that appropriate measures have been taken by and under the authority of the Government of the United States to ensure that the Polar Sea substantially complies with required standards for navigation in the waters of the Arctic archipelago and that in all other respects reasonable precautions have been taken to reduce the danger of pollution arising from this voyage. Accordingly, the Embassy is now in a position to notify the United States that, in the exercise of Canadian sovereignty over the Northwest Passage, the Government of Canada is pleased to consent of the requested transit...

The transit of the Northwest Passage was accomplished by the Polar Sea in early August 1985.

On January 11, 1988, an Agreement on Arctic Cooperation was signed in Ottawa by Secretary of State George P. Shultz and Canadian Secretary of State for External Affairs Joe Clark. This agreement sets forth the terms for cooperation by the two governments in coordinating research in the Artic marine environment during icebreaker voyages and in facilitating safe, effective icebreaker navigation off their Arctic coasts. The agreement does not affect the rights of passage by other warships or by commercial vessels.

\textbf{Oresund and The Belts}

These straits, which connect the North Sea and the Baltic Sea, are governed by two treaties: (1) the Treaty for the Redemption of the Sound Dues, Copenhagen, March 14, 1857\textsuperscript{119}, which grant free passage of the Sound and Belts for all flags; and (2) the U.S. - Danish Convention on Discontinuance of Sound Dues, April 11, 1857\textsuperscript{120} guaranteeing "the free and unencumbered navigation of American vessels, through the Sound and the Belts forever".

\textsuperscript{118} Diplomatic Note No. 433, July 31, 1985.
\textsuperscript{120} 11 Stat. 719, T.S.67; 7 Miller 519; 7 Bevans 11.
Warships were never subject to payment of the so-called "Sound Dues," and thus the U.S. position is that no part of these "long-standing international conventions" is applicable to them. The U.S. position is that warships and state aircraft traverse the Oresund and the Belt based either under the customary right of transit passage or under the conventional right of "free and unencumbered navigation."

Both Denmark and Sweden, however, maintain that warship and state aircraft that transit these straits are subject to coastal state restrictions. They argue that the "longstanding international conventions" apply as "modified" by longstanding domestic legislation.

**Strait of Tiran**

The Strait of Tiran connects the Gulf of Aqaba with the Red Sea (see map 11). Article V(2) of the Treaty of Peace between Egypt and Israel states that "the parties consider the Strait of Tiran and the Gulf of Aqaba to be international waterways open to all nations for unimpeded and non-suspendable freedom of navigation and overflight."

When asked about the effect of the LOS Convention on the regime of navigation and overflight for this strait and the Gulf of Aqaba, a U.S. official replied:

The U.S. fully supports the continuing applicability and force of freedom of navigation and overflight for the Strait of Tiran and the Gulf of Aqaba as set out in the peace treaty between Egypt and Israel. In the U.S. view, the treaty of peace is fully compatible with the LOS Convention and will continue to prevail. The conclusion of the LOS Convention will not affect these provisions in any way.

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121 Miller 524-86.
122 See Alexandersson, The Baltic Straits 82-86 & 89 (1982).
123 Treaty of Peace between Egypt and Israel, March 26, 1979; found in 1979 Digest of U.S. Practice in International Law 1691; 18 International Legal Materials 362.
OVERFLIGHT RESTRICTIONS

The United States has protested several countries claiming jurisdiction to control overflight of ocean areas not subject to such jurisdiction. In most cases, these claims correspond with illegal territorial sea claims that exceed the 12 mile limit.

**Cuba:** In 1986 Cuba complained to the United States that U.S. military aircraft were operating within the Cuban Flight Information Region (FIR) without Cuban permission. The United States responded on August 20, 1986, stating, in part, that it

...rejects the implicit assertion in the note of 16 May, 1986, that state aircraft of the United States are required to notify and obtain authorization from Cuban authorities before entering Flight Information Regions (FIR) administered by Cuba. There is no
authority for the imposition of such a requirement...

**Ecuador:** In 1986 Ecuador interfered with a U.S. Air Force aircraft flying over the high seas more than 175 miles from Ecuador's coast. (The United States previously had protested Ecuador's claim to a 200-mile territorial sea in 1967). The American Embassy was instructed to again protest the 200 mile territorial sea claim and to express U.S. opposition to countries imposing burdensome requirements on overflights.\(^{126}\)

**Libya:** The United States protested Libya's establishment in 1973 of a 100 mile "restricted area" of airspace around Tripoli.\(^{126}\)

**Peru:** In 1986 Peru complained that a U.S. Air Force C-141 did not receive permission to overfly its airspace. The U.S. responded by saying that it did not recognize any territorial sea claim in excess of 12 miles and that the U.S. aircraft was 80 miles off the Peruvian coast.\(^{127}\) Similar incidents occurred in 1987 and 1988. The U.S. again lodged a protest on March 16, 1988.

### ARCHIPELAGIC SEA LANES PASSAGE

Under the LOS Convention an archipelagic state may designate sea lanes and air routes suitable for the continuous and expeditious passage of foreign ships and aircraft through it or over its archipelagic waters (Article 53(1)). Archipelagic sea lanes "shall include all normal passage routes...and all normal passage routes...and all normal navigational channels....(Article 53(4)). Innocent passage applies in other archipelagic waters beyond the internal waters of the islands of the archipelago.

If a state meets all the requirements of being an archipelagic state, but has not claimed that status, then archipelagic sea lanes passage applies in sea lanes and air routes normally used for international navigation (Article 53 (12)). Innocent passage applies in other parts of the archipelagic waters.

**Excessive claims**

**Philippines:** In conjunction with the deposit of its instrument of ratification of the LOS Convention on May 8, 1984 the Philippines asserted certain rights over archipelagic straits inconsistent with international law. The Philippines had stated that,\(^{128}\)

The concept of archipelagic waters is similar to the concept of internal waters under the Constitution of the Philippines, and removes straits connecting these waters with the

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\(^{125}\) 86 State telegram 262333, August 20, 1986.


\(^{127}\) Diplomatic note dated August 15, 1986.

\(^{128}\) Philippine declaration can be found in UN, *Status of the LOS Convention*, p.37.
economic zone or high sea from the rights of foreign vessels to transit passage for international navigation.

The United States protested stating, in part,\textsuperscript{129}

...the concept of internal waters differs significantly from the concept of archipelagic waters. Archipelagic waters are only those enclosed by properly drawn archipelagic baselines and are subject to the regimes of innocent passage and archipelagic sea lanes passage...strait linking the high seas or exclusive economic zone with archipelagic waters, as well as straits within archipelagic waters, are, if part of normal passage routes used for international navigation or overflight through or over archipelagic waters, subject to the regime of archipelagic sea lanes passage.

...A coastal State properly claiming archipelagic waters may lawfully exercise sovereignty over archipelagic sea lanes through such waters, if such sea lanes encompassing all normal passage routes for international navigation are designated in accordance with international law, and if the regime of archipelagic sea lanes passage is applied.

\textsuperscript{129} Diplomatic note dated January 29, 1986.
ANNEX I
PRESIDENTIAL PROCLAMATION 5030
MARCH 10, 1983

WHEREAS the government of the United States of America desires to facilitate the wise development and use of the oceans consistent with international law;

WHEREAS international law recognizes that, in a zone beyond its territory and adjacent to its territorial sea, known as the Exclusive Economic Zone, a coastal State may assert certain sovereign rights over natural resources and related jurisdiction; and

WHEREAS the establishment of an Exclusive Economic Zone by the United States will advance the development of ocean resources and promote the protection of the marine environment, while not affecting other lawful uses of the zone, including the freedoms of navigation and overflight, by other States;

NOW, THEREFORE, I, RONALD REAGAN, by the authority vested in me as President by the Constitution and laws of the United States of America, do hereby proclaim the sovereign rights and jurisdiction of the United States of America and confirm also the rights and freedoms of all States within an Exclusive Economic Zone, as described herein.

The Exclusive Economic Zone of the United States is a zone contiguous to the territorial sea, including zones contiguous to the territorial sea of the United States, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands (to the extent consistent with the Covenant and the United Nations Trusteeship Agreement), and United States overseas territories and possessions. The Exclusive Economic Zone extends to a distance 200 nautical miles from the baseline from which the breadth of the territorial sea is measured. In cases where the maritime boundary with a neighboring State remains to be determined, the boundary of the Exclusive Economic Zone shall be determined by the United States and other State concerned in accordance with equitable principles.

Within the Exclusive Economic Zone, the United States has, to the extent permitted by international law, (a) sovereign rights for the purpose of exploring, exploiting, conserving and managing natural resources, both living and non-living, of the seabed and subsoil and the superjacent waters and with regard to other activities for the economic exploitation and exploration of the zone, such as the production of energy from the water, currents and winds; and (b) jurisdiction with regard to the establishment and use of artificial islands, and installations and structures having economic purposes, and the protection and preservation of the marine environment.

This Proclamation does not change existing United States policies concerning the continental shelf, marine mammals and fisheries, including highly migratory species of tuna which are not subject to United States jurisdiction and require international agreements for effective management.
The United States will exercise these sovereign rights and jurisdiction in accordance with the rules of international law.

Without prejudice to the sovereign rights and jurisdiction of the United States, the Exclusive Economic Zone remains an area beyond the territory and territorial sea of the United States in which all States enjoy the high seas freedoms of navigation, overflight, the laying of submarine cables and pipelines, and other internationally lawful uses of the sea.

In WITNESS WHEREOF, I have hereunto set my hand this tenth day of March, in the year of our Lord nineteen hundred and eighty-three, and of the Independence of the United States of America the two hundred and seventh.

RONALD REAGAN

STATEMENT BY THE PRESIDENT

The United States has long been a leader in developing customary and conventional law of the sea. Our objectives have consistently been to provide a legal order that will, among other things, facilitate peaceful, international uses of the oceans and provide for equitable and effective management and conservation of marine resources. The United States also recognizes that all nations have an interest in these issues.

Last July I announced that the United States will not sign the United Nations Law of the Sea Convention that was opened for signature on December 10. We have taken this step because several major problems in the Convention's deep seabed mining provisions are contrary to the interests and principles of industrialized nations and would not help attain the aspirations of developing countries.

The United States does not stand alone in those concerns. Some important allies and friends have not signed the Convention. Even some signatory States have raised concerns about these problems.

However, the Convention also contains provisions with respect to traditional uses of the oceans which generally confirm existing maritime law and practice and fairly balance the interests of all States.

Today I am announcing three decisions to promote and protect the oceans interests of the United States in a manner consistent with those fair and balanced results in the Convention and international law.

First, the United States is prepared to accept and act in accordance with the balance of interests relating to traditional uses of the oceans—such as navigation and overflight. In this respect, the United States will recognize the rights of other States in the waters off their
coasts, as reflected in the Convention, so long as the rights and freedoms of the United States and others under international law are recognized by such coastal States.

Second, the United States will exercise and assert its navigation and overflight rights and freedoms on a worldwide basis in a manner consistent with the balance of interests reflected in the Convention. The United States will not, however, acquiesce in unilateral acts of other States designed to restrict the rights and freedoms of the international community in navigation and overflight and other related high seas uses.

Third, I am proclaiming today an Exclusive Economic Zone in which the United States will exercise sovereign rights in living and non-living resources within 200 nautical miles of its coast. This will provide United States jurisdiction for mineral resources out to 200 nautical miles that are not on the continental shelf. Recently discovered deposits there could be an important future source of strategic minerals.

Within this Zone all nations will continue to enjoy the high seas rights and freedoms that are not resource-related, including the freedoms of navigation and overflight. My Proclamation does not change existing United States policies concerning the continental shelf, marine mammals and fisheries, including highly migratory species of tuna which are not subject to United States jurisdiction. The United States will continue efforts to achieve international agreements for the effective management of these species. The Proclamation also reinforces this government's policy of promoting the United States fishing industry.

While international law provides for a right of jurisdiction over marine scientific research within such a zone, the Proclamation does not assert this right. I have elected not to do so because the United States interest in encouraging marine scientific research and avoiding any unnecessary burdens.

The United States will nevertheless recognize the right of other coastal States to exercise jurisdiction over marine scientific research within 200 nautical miles of their coasts, if that jurisdiction is exercised reasonably in a manner consistent with international law.

The Exclusive Economic Zone established today will also enable the United States to take limited additional steps to protect the marine environment. In this connection, the United States will continue to work through the International Maritime Organization and other appropriate international organizations to develop uniform international measures for the protection of the marine environment while imposing no unreasonable burdens on commercial shipping.

The policy decisions I am announcing today will not affect the application of existing United States law concerning the high seas or existing authorities of any United States government agency.

In addition to the above policy steps, the United States will continue to work with other countries to develop a regime, free of unnecessary political and economic restraints, for
mining deep seabed minerals beyond national jurisdiction. Deep seabed mining remains a lawful exercise of the freedom of the high seas open to all nations. The United States will continue to allow its firms to explore for and, when the market permits, exploit these resources.

The Administration looks forward to working with the Congress on legislation to implement these new policies.
ANNEX II

STATES RATIFYING THE
UNITED NATIONS LAW OF THE SEA CONVENTION

As of February 15, 1992, the following states have deposited with the United Nations their instruments of ratification for the United Nations Law of the Sea Convention. The first listing is alphabetical, the second chronological.

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43. Tanzania  September 30, 1985
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ANNEX III

United States - U.S.S.R.
Uniform Interpretation of the
Rules of International Law Governing
Innocent Passage Through the Territorial Sea
September 23, 1989

1. The relevant rules of international law governing innocent passage of ships in the territorial sea are stated in the 1982 United Nations Convention on the Law of the Sea (Convention of 1982), particularly in Part II, Section 3 [ "Innocent Passage in the Territorial Sea"].

2. All ships, including warships, regardless of cargo, armament or means of propulsion, enjoy the right of innocent passage through the territorial sea in accordance with international law, for which neither prior notification nor authorization is required.

3. Article 19 of the Convention of 1982 sets out in paragraph 2 an exhaustive list of activities that would render passage not innocent. A ship passing through the territorial sea that does not engage in any of those activities as in innocent passage.

4. A coastal State which questions whether the particular passage of a ship through its territorial sea is innocent shall inform the ship of the reason why it questions the innocence of the passage, and provide the ship an opportunity to darify its intentions or correct its conduct in a reasonably short period of time.

5. Ships exercising the right of innocent passage shall comply with all laws and regulations of the coastal State adopted in conformity with relevant rules of international law as reflected in Articles 21, 22, 23 and 25 of the Convention of 1982. These include the laws and regulations requiring ships exercising the right of innocent passage through its territorial sea to use such sea lanes and traffic separation schemes as it may prescribe where needed to protect safety of navigation. In areas where no such sea lanes or traffic separation schemes have been prescribed, ships nevertheless enjoy the right of passage.

6. Such laws and regulations of the coastal State may not have the practical effect on denying or impairing the exercise of the right of innocent passage as set forth in Article 24 of the Convention of 1982.

7. If a warship engages in conduct which violates such laws or regulations or renders its passage not innocent and does not take corrective action upon request, the coastal State may require it to leave the territorial sea, as set forth in Article 30 of the Convention of 1982. In such case the warship shall do so immediately.
8. Without prejudice to the exercise of rights of coastal and flag States, all differences which may arise regarding a particular case of passage of ships through the territorial sea shall be settled through diplomatic channels or other agreed means.
Map 4

Libya's Claim to the Gulf of Sidra

1701 1-92 STATE (NR/GE)
Map 5

Names and boundary representation are not necessarily authoritative.

1341 4-91 STATE (NIR/GK)

Soviet Claimed Historic Bay:
Peter The Great Bay

July 21, 1957 Council of Ministers' Decree
and
February 7, 1969 Council of Ministers' Decree

Nautical miles

China
U.S.S.R.
North Korea
Sea of Japan
BURMA: Straight Baselines Claim

ARAKAN COAST
a. Southern Point of Oyster Island 23°18'20"
   92°32'12"
b. Borong Point 19°48'30"
   92°01'42"
c. South Terries 18°22'36"
   92°16'20"
d. Western Point of Henry Rocks 18°51'48"
   92°58'15"
e. Western Point of Nerbudda Island 19°30'00"
   92°56'25"
f. St. John's or Church Rocks 17°23'36"
   94°19'46"
g. North West Group 16°35'20"
   94°41'45"
h. Korone Island 16°31'20"
   94°43'21"
i. South Rock 16°18'35"
   94°43'20"
j. Black Rock 16°17'50"
   94°40'30"
k. Algoeda Reef (Paithin Light) 15°42'13"
   94°12'00"

GULF OF MARTABAN
A. Algoeda Reef (Paithin Light) 15°42'13"
   94°12'00"
B. Western Point of Long Island 14°24'37"
   94°12'00"

ANDAMAN SEA

TENASSERIM COAST
a. Western Point of Long Island 14°24'15"
   97°40'32"
b. North Island 14°28'00"
   97°48'54"
c. West Conister Island 12°41'30"
   97°42'40"
d. Northern Point of Sourim Island 12°30'30"
   97°17'32"
e. Western Point of H. Princep Island 12°30'30"
   97°13'30"
f. Great Western Torres 11°47'50"
   97°29'15"
g. North Western Point of North Twin 10°38'15"
   97°41'30"
h. Western Point of South Twin 10°28'15"
   97°40'30"
i. Western Rocky Island 9°53'30"
   97°32'18"
j. Haycock Island 8°40'45"
   97°34'30"
k. Western Point of Murray Island 8°32'54"
   97°39'15"
Map 8

Federal Republic of Germany's
Territorial Sea Extension
in the North Sea

- Territorial Sea extension
- Straight baselines
- Three nautical mile territorial sea
- Traffic separation scheme
- Roadstead

Area between 12 nautical mile arcs
drawn from FRG baseline and
roadstead

Baseline turning point

North Sea

Helgoland

Bucht

Wangerooge

Scharhörn

LAND HADELN

FRG

OSTFRIESLAND

FRG

NORDFRIESLAND

FRG

Pelworm

Nordstrand

EIDERSTEDT

Julst

Osterlen

Baltrum

Langeoog

Spiekeroog

Names and boundary representation
are not necessarily authoritative.
Map 9

Soviet Bumping of U.S. Vessels in the Black Sea, 1988

- USSR claimed straight baselines
- 12 nautical mile territorial sea limit

Names and boundary representation are not necessarily authoritative.
An Overview

The following chart presents an overview of the organization of the Department of the Navy. The U.S. Navy was founded on 13 October 1775, and the Department of the Navy was established on 30 April 1798. The Department of the Navy has three principal components: the Navy Department, consisting of executive offices mostly in Washington, D.C.; the operating forces, including the Marine Corps, the reserve components, and, in time of war, the U.S. Coast Guard (in peace, a component of the Department of Homeland Security); and the shore establishment. The blocks below are hyperlinked to more information.

The dashed line marked "Support" indicates the cooperative support of the Navy-Marine Corps team. Each of the operating forces supports the other.

Updated: 28 November 2006
CURRENT MARITIME ISSUES
AND THE INTERNATIONAL
MARITIME ORGANIZATION

Edited by
Myron H. Nordquist
and
John Norton Moore

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IMPLEMENTING IMO REGULATIONS AND OCEANS POLICY

G.E. Kurz*

Good afternoon, ladies and gentlemen.

Let me say, first of all, how pleased I am to participate in this afternoon’s panel discussion. I could not think of a more appropriate venue to share with you my thoughts on the implementation of IMO regulations.

As you know, Mobil owns and operates a sizeable fleet of tankers that are employed in worldwide trading. We have spent large sums of money over the years to maintain a high quality marine operation. Mobil is also a major player in the international charter market and we have gone to extraordinary lengths to protect ourselves against substandard ships. Safety is at the heart of every decision we make. My comments, therefore, are made from the perspective of an operator, as well as an “end user” who has a strong and direct interest in the uniform and consistent implementation of global maritime laws and regulations. In other words, we are a strong supporter of the IMO and its regulatory authority over the maritime industry.

It is not always recognized that the IMO’s mandate is limited to the development and adoption of legislation, not its implementation or enforcement. That responsibility rests with the 156 member governments, each of which, as we know, has a mind of its own. This, of course, explains the difficulty which is often encountered in effecting the timely and consistent implementation of IMO adopted legislation. (Compare this to the speed and rigor deployed in pushing through tax increases. IMO should rethink its strategy.)

Procedurally, once a government has accepted an IMO convention, it has, in effect, agreed to make it part of its own national law and to enforce it with the same deliberateness. There may be a few countries that perhaps lack the expertise and

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G.E. Kurz

resources to properly implement and enforce the adopted conventions, but this is not a valid excuse for the majority of member States. In any event, it does not account for the wide disparity in the level of enforcement that we still see reflected in the casualty rates of different flag States.

By forming a special Sub-Committee on Flag State Implementation and encouraging the establishment of regional port State control organizations, the IMO has correctly identified the actions needed to strengthen the weak links in the quality chain of responsibility. Clearly, it is imperative that we work with the IMO in closing the remaining gaps.

Shipping, as everyone knows, is steeped in tradition and governed by extensive international rules and regulations covering everything from safe seamanship to sound vessel operations. When I first entered this business thirty years ago, I quickly realized that it was an industry that demanded excellence and professionalism. This is still true today, despite the tumultuous structural changes that have occurred over the last ten to fifteen years, profoundly changing the face of our industry. Major oil companies, for example, are no longer a dominant factor in the tanker business. They account for less than 15% of industry capacity. Today’s fleet is largely in the hands of independent operators whose ability to maintain high safety and performance standards can be adversely affected by the economic realities of the marketplace.

Nevertheless, we have come a long way in rectifying and reversing the decline in standards experienced during the 1980s, when cost pressures and sheer survival needs did much to undermine the fabric of our industry. Credit for these positive changes goes to all industry participants: shipowners, classification societies, flag State Administrations, industry organizations such as Intertanko and the Oil Companies International Marine Forum (OCIMF), and, most importantly, the IMO, with Bill O’Neil playing a very pivotal role. In galvanizing the IMO to implement uniform international standards that reflect today’s heightened environmental concerns, and in helping to reestablish an effective
flag State and class society enforcement structure, he has demonstrated that determination, a clear focus and unwavering attention to the real issues that get results. I applaud his accomplishments.

I am particularly pleased by the adoption of regulations 13F and 13G as an ARPOL amendment requiring new ships to have double hulls or an equivalent structure, and by the requirement for enhanced structural surveys for bulk carriers and oil tankers. The enhanced survey requirement represents a quantum leap forward and is a good example of industry cooperation with the IMO. There are many other IMO conventions and amendments, too many, in fact, to enumerate, which have all been extremely beneficial, if not crucial, for our industry.

As a tanker operator, I regard the SOLAS requirements for inert gas systems to be the most significant advance in tanker safety. This is not to belittle the value of the many other SOLAS provisions, which together, properly enforced, provide a very effective safety culture.

I also applaud the ongoing efforts to strengthen standards in the area of training, certification and watchkeeping, since crew competence is without doubt a critical safety issue. The improved International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), which will become effective in 2002 correctly focuses on the importance of the human element in safe shipboard operations. Hopefully, it will be implemented without the excessive fanfare and industry posturing that accompanied the entry into force of the International Safety Management (ISM) code six months ago.

While I strongly agree with the ISM preamble, which reads that "the cornerstone of good safety management is communication from the top," I reserve judgment as to the veracity of this commitment across the industry. We have to remember that ISM was brought about not because of the shortcomings of seafarers, but because of failures on the part of shore-based management. Too often safety is viewed as an expense rather than a means of improving the bottom line. I
personally believe that investments in safety pay dividends many times over. How can anyone justify questionable vessel construction or inadequate maintenance and operating standards when the consequence could be a catastrophic accident?

No doubt, if properly applied, the ISM code could have a very broad impact on our industry and bring about a greater uniformity in standards of operation. This would do much to achieve a more level playing field. Regrettably, there are some early indications that the posted ISM certificate does not always reflect the true condition of the ship. Even ships' crews have been found to be unfamiliar with ISM’s purpose.

Here is the real issue: How do we deal with the substandard operator who blatantly disregards clearly established management and operating guidelines to the detriment and disrepute of industry? The answer, to my mind, is certainly not more layers of stifling regulations. As an industry we are already close to suffocating from a regulatory overburden, and sadly it has not enabled us to catch the real culprits except on the rare occasion. They are very deft and find ways to evade rules faster than the IMO and other regulatory bodies are capable of devising them. We need a much more selective and targeted intervention geared to the enforcement of existing regulations.

Our entire strategy needs to be redirected with a more specific focus on the role of flag States, port States and class societies. Make no mistake, the vast majority of shipowners and operators are responsible and dedicated people, well aware of the rules and the penalties. Everything they need for guidance is on the books. This is what the steady implementation of IMO regulations have achieved.

The ships in question are those registered in flag States which do not and, indeed, cannot shoulder their responsibilities in a competent and professional manner. Often they are classed by organizations with standards so low that they have become the refuge for the world’s substandard tonnage. This must be stopped, but in the process let us not damage the good operator.
Implementing IMO Regulations and Oceans Policy

What is frustrating is that we know for the most part the bad vessels and their operators. Unfortunately, they somehow seem to be able to escape the regulatory safety net. Hopefully, this will become more difficult with the tougher enforcement of port State controls and the increased transparency of our industry through the public exposure of delinquent operators.

Tough, well-aimed port State inspections are critical, but so is the role of flag States. They have to show greater vigilance in assuring compliance with the conventions to which they are parties and resist the temptation to overlook deficiencies for the purpose of attracting and retaining vessels under their registry. The scale must be tipped on the side of enforcement and away from commercial considerations.

Not without justification, flag States make the argument that their shortcomings are largely the result of other failures in the system, referring mainly to the lack of consistency on the part of class societies in their enforcement of quality standards. Clearly, there is still a lot of finger pointing that is not helping the cause. Currently, it is critical to prevent rule-breakers from allowing owners to extend certificates or obtain certification for anything that falls short of the required standards.

As Chairman of the Oil Companies International Marine Forum (OCIMF), I have taken special interest in the quality issue. I am particularly proud of the SIRE ship inspection program, which today provides access to a large database of vital ship information that is available to governments, port and terminal operators and, of course, charterers. Frankly, with all the information and performance data available these days, there is really no excuse to ignore doing what is right.

Unfortunately, it is the propensity of industry and governments alike to be reactive rather than pro-active on maritime issues, which makes it so difficult at times to take the appropriate actions.

The IMO very often stands alone and at times even gets criticized for taking the initiative. One would have thought that the International Convention on Civil Liability for Oil Pollution Damage, and Convention on the Establishment of an International
Fund for Compensation for Oil Pollution Damage, including their subsequent amendments (which IMO adopted as far back as 1969 and 1972 respectively), would have been ratified by now. This, regrettably, is not the case and quite a few governments have yet to make a move. Hopefully, we can look to the closure of this matter in the foreseeable future. It is not hard to appreciate that IMO has had an unenviable task when the issue is one involving the sovereignty of individual nations.

Let me briefly comment on two other IMO initiatives which deserve our full support. First, the World Maritime University in Malmo, Sweden opened in 1993 and provides advanced training to students from all over the world, particularly developing countries. Today, it is recognized as a unique institution that provides a maritime education unavailable anywhere else. Mobil is a proud supporter of this University.

The second more recent initiative, spearheaded by Secretary Bill O’Neil, responds to the increasing threat posed by acts of piracy in various parts of the world—particularly South America, Africa and South East Asia. Unfortunately, these attacks occur with increasing frequency and severity and involve a seafarer fatality every week. Bill O’Neil is very appropriately highlighting this issue with a series of seminars, of which the first was held in Brazil last year. Other seminars are scheduled for this year in Singapore and West Africa. There should be no question that the ultimate responsibility for the prevention of piracy lies with the governments of the littoral states, their Coast Guards and other local or regional authorities. Only with their commitment and cooperation can this serious problem of armed attacks on ships be contained.

In conclusion, those of us who make our living in shipping and are committed to doing the right thing, greatly value the IMO as a constructive force for the good of the industry. Both ship owners and charterers make conscious decisions whether to abide by or disregard clearly defined quality and safety standards. As such, accomplishing our industry’s goals is very much a matter of individual commitment and compliance. I, for one, favor the
aggressive enforcement of existing rules rather than adding more. We have all the tools in place—let us use them to underpin a new safety culture for the next millennium.
On December 19, 2004, the U.S. Commission on Ocean Policy expired, as provided under the terms of the Oceans Act of 2000. Maintenance of this Web site ceased on that date. This site is an archive of the Commission's work.


Released by the U.S. Commission on Ocean Policy on September 20, 2004, An Ocean Blueprint for the 21st Century contains the Commission's findings and recommendations for a new, coordinated and comprehensive national ocean policy. The other materials listed below are supporting documents, including the Special Addendum to the Final Report, appendices printed in the main report, and appendices printed as separate documents. The final report can be viewed or downloaded as a full report or by sections, including the executive summary, specific chapters and appendices.

Full Report
Executive Summary
Chapters 1-31
Appendices Printed in the Main Report (Appendices A-G)

Appendices Printed as Separate Documents
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Full Report


Final Report Chapters 1-31

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Chapter 20: Protecting Marine Mammals and Endangered Marine Species (pdf, 336 Kb)
Chapter 21: Preserving Coral Reefs and Other Coral Communities (pdf, 1.1 MB)
Chapter 22: Setting a Course for Sustainable Marine Aquaculture (pdf, 312 Kb)
Chapter 23: Connecting the Oceans and Human Health (pdf, 580 MB)
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Part VII - Science-based Decisions: Advancing Our Understanding of the Oceans
Chapter 25: Creating a National Strategy for Increasing Scientific Knowledge (pdf, 612 Kb)
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Appendix A to the Final Report - Oceans Act of 2000
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Appendix C to the Final Report - Living Near ... and Making a Living From ... the Nation's Coasts and Oceans by Charles S. Colgan
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Appendices Printed as Separate Documents (Special Addendum and Appendices 1-6)

Special Addendum to the Final Report

Governors' Comments on the Preliminary Report

Originally released by the U.S. Commission on Ocean Policy on July 22, 2004, Governors' Comments on the Preliminary Report was re-released on September 20, 2004, as a Special Addendum to the Final Report. As directed by the Oceans Act of 2000, this document contains the complete text of the responses from 37 governors, five tribal leaders, and one regional governors association. A summary (pdf, 112Kb) of Governor and Tribal Leader comments is also available for viewing or

http://www.oceancommission.gov/documents/full color rpt/welcome.html
Appendix 1 to the Final Report

Testimony Before The U. S. Commission On Ocean Policy: Synthesis Indexed By Policy Topic

Originally released by the U.S. Commission on Ocean Policy in June 2003, Testimony Before the U.S. Commission on Ocean Policy: Synthesis Indexed by Policy Topic (pdf, 3.7 MB), was re-released on April 20, 2004, as Appendix 1 of the Commission's Preliminary Report, and on September 20, 2004, as Appendix 1 of the Final Report. The document highlights the presentations made to the Commission at its public meetings from September 2001 through November 2002.

Appendix 2 to the Final Report

Testimony Before The U. S. Commission On Ocean Policy: Summary Indexed By Presenter

Originally released by the U.S. Commission on Ocean Policy in June 2003, Testimony Before the U.S. Commission on Ocean Policy: Summary Indexed by Presenter (pdf, 7.9 MB) was re-released on April 20, 2004, as Appendix 2 of the Commission's Preliminary Report, and on September 20, 2004, as Appendix 2 of the Final Report. The document includes overviews of invited testimony and public comment before the Commission at its public meetings from September 2001 through April 2003.

Appendix 3 to the Final Report

National Marine Educators Association
Membership Profile

Originally released by the U.S. Commission on Ocean Policy as Appendix 3 to the Preliminary Report, National Marine Educators Association Membership Profile (pdf, 14.6 MB) was re-released on September 20, 2004, as Appendix 3 to the Final Report. The purpose of this survey was to collect baseline data regarding formal and informal efforts in marine and aquatic education based on responses from the National Marine Educators Association membership, and to provide an analysis of the responses to the Commission's Research, Education and Marine Operations Working Group.

Appendix 4 to the Final Report

U.S. Ocean-Related Academic Infrastructure

Originally released by the U.S. Commission on Ocean Policy as Appendix 4 to the Preliminary Report, U.S. Ocean-Related Academic Infrastructure (pdf, 1.9 MB) was re-released on September 20, 2004, as Appendix 4 to the Final Report. This document is an evaluation of the U.S. investment in academic ocean sciences research and education, and was prepared to address part of the Oceans Act of 2000 requirement for an overall assessment of existing and planned ocean and coastal facilities.

Appendix 5 to the Final Report

Inventory of U.S. Ocean and Coastal Facilities

Originally released by the U.S. Commission on Ocean Policy as Appendix 5 to the Preliminary Report, Inventory of U.S. Ocean and Coastal Facilities (pdf, 8.2 MB) was re-released on September 20, 2004, as Appendix 5 to the Final Report. As required by Congress, this document provides an assessment of existing and planned facilities associated with ocean and coastal activities, including human resources, vessels, computers, satellites, and other appropriate platforms and technologies.
Appendix 6 to the Final Report


Released in February 2005 as Appendix 6 to the Final Report, Review of U.S. Ocean and Coastal Law: The Evolution of Ocean Governance Over Three Decades (pdf, 3.1 MB), provides a descriptive review of ocean and coastal laws-the key governing statutes and selected issues that have evolved since the release of the Stratton Commission report-in a number of policy areas including ocean jurisdictions, coastal management, living and nonliving marine resources, water pollution, and marine operations.

Revised May 13, 2006 by Ocean Commission Webmaster
Site hosted by National Oceanic and Atmospheric Administration, U.S. Department of Commerce
CHAPTER 22

SETTING A COURSE FOR SUSTAINABLE MARINE AQUACULTURE

As world consumption of seafood continues to increase, the farming of marine species has become a rapidly growing domestic and international industry. There are, however, a number of challenges that this industry presents. Nearshore marine aquaculture activities are affected by increasing population and development pressures and confusing or overlapping laws, regulations, and jurisdictions. Aquaculture operations in offshore waters lack a clear regulatory regime, and questions about exclusive access have created an environment of uncertainty that is detrimental to investment in this industry. Also of concern are potential threats to the environment and to native fish populations, and conflicts between aquaculture and other uses of the nation’s ocean and coastal waters. A lead federal agency with an office dedicated to marine aquaculture is needed to address jurisdictional issues and to ensure the development of an economically and environmentally sound marine aquaculture industry.

Acknowledging the Growing Significance of Marine Aquaculture

As traditional harvest fisheries have approached and exceeded sustainable levels, the farming of fish, shellfish, and aquatic plants in marine and fresh waters has become a burgeoning global industry. These organisms can be raised in everything from nearly natural environments to enclosed structures, such as ponds, cages, and tanks, where they are fed and treated to maximize their growth rate.

In the United States, the demand for seafood continues to grow as expanding numbers of Americans seek healthier diets. During the 1980s and 1990s, the value of U.S. aquaculture production rose by about 400 percent, to almost $1 billion. This figure includes fresh-water and marine finfish and shellfish, baitfish, and ornamental fish for sale to aquariums. Along with fish farmers themselves, the aquaculture industry supports an infrastructure of feed mills, processing plants, and equipment manufacturers. There is great potential for marine aquaculture to become an even more important source of seafood for the U.S. market and a way to help reduce the nation’s seafood trade deficit of $7 billion a year (Figure 22.1).
Addressing Environmental Impacts of Aquaculture

National management of marine aquaculture activities should minimize potential environmental impacts. These impacts include the spread of disease among fish populations, genetic contamination and competition between farmed and native stocks, and effects from aquaculture operations on water quality, wetlands, and other natural habitats. Fish waste, dead fish, uneaten food, and antibiotics may contaminate the water around aquaculture facilities and harm surrounding ecosystems. Marine mammals, attracted by the food source, can become entangled in nets. There are also concerns about the increased demand for fishmeal used to feed farm-raised carnivorous fish. Obtaining fishmeal from traditional wild harvest practices may increase the pressure on fisheries that are already fully exploited. Extensive research is underway by the aquaculture community to determine how to decrease this demand.

Another issue of increasing concern is the possible introduction of non-native species (intentionally or unintentionally) through marine aquaculture operations. In the United States, many cultured marine species are not native to the area where they are being farmed. In these cases, there is the possibility that foreign (or genetically-modified) animals or their reproductive offspring may escape and potentially compete or reproduce with wild populations, resulting in unpredictable changes to ecological, biological, and behavioral characteristics. Where non-native species come in contact with already depleted fish or shellfish stocks, recovery efforts may be hampered.

Potential problems associated with the introduction of non-native species are illustrated in the case of the Atlantic salmon, which is one of the most widely farmed fish species in the United States and around the world. Escaped farm-bred salmon, which differ genetically from species of wild Atlantic salmon, have the potential to both compete with native salmon species (at least one of which has been listed as threatened or endangered under the Endangered Species Act) for limited resources, interbreed with native species causing changes in the gene pool, and spread disease. Infectious salmon anemia and sea lice,
which are widespread in European salmon aquaculture facilities, have recently appeared in North American operations.³

Another example, discussed in more detail in Chapter 17, is the proposed farming of a non-native oyster species from China in Chesapeake Bay tributaries. This Chinese oyster appears to be resistant to the diseases plaguing native species. However, a 2003 National Research Council report raised serious questions about the possible ramifications of such an introduction.⁴ It is now up to state officials to decide what is best for the Bay, in both the short- and long-term, with little science or law to guide them.⁵ Ironically, the steep decline in the Bay’s native oyster population was caused in part by a disease introduced in the 1950s during a previous attempt to establish a non-native oyster species.

All of the potential impacts discussed in this section need to be addressed if the nation is to achieve an environmentally and economically sustainable marine aquaculture industry.

Dealing with Uncertainties in the Existing Management Structure

The potential contribution of marine aquaculture to the nation’s economic growth and to meeting the increasing demand for seafood is impeded by its current management framework, which is characterized by complex, inconsistent, and overlapping policy and regulatory regimes administered by numerous state and federal agencies.

Because nearly all marine aquaculture activities operating today are located in nearshore waters under state jurisdiction, the majority of laws and regulations that authorize, permit, or control these activities are found at the state level and are not designed to address offshore aquaculture activities in federal waters. For example, one of the first U.S. commercial open ocean aquaculture projects in Hawaii began in 2001 with the lease of 28 acres of state marine waters to a private company, following a 1999 state legislative authorization to allow commercial offshore aquaculture leasing. Other nearshore aquaculture activities—most of which are in the pilot project stage—include the operation of a federally-sponsored experiment off the coast of New Hampshire and a salmon facility off of Maine.

Marine Aquaculture in Offshore Areas

As competition for space in nearshore areas intensifies, the marine aquaculture industry is looking increasingly toward opportunities in federal offshore waters. The expansion of aquaculture activities into the outer Continental Shelf provides potential benefits, as well as additional concerns. Locating marine aquaculture activities farther offshore may reduce the visibility of these activities from land, be less intrusive to fisheries and recreational activities, and have fewer environmental impacts than activities located in nearshore areas. However, the logistics associated with operating offshore facilities are also more difficult, requiring long transit times for workers and supplies, and other technical complications. Offshore aquaculture structures must also be designed to withstand the effects of extreme winds, waves, and temperatures, and be positioned in a way that does not create a hazard to navigation.

The Current Regulatory Conundrum

There are numerous federal agencies directly or indirectly involved in implementing laws associated with various aspects of offshore activities, including marine aquaculture. These include the U.S. Departments of Agriculture and the Interior (USDA and DOI), the National Oceanic and Atmospheric Administration (NOAA), the U.S. Food and Drug
Administration, the U.S. Army Corps of Engineers (USACE), the U.S. Coast Guard, and the U.S. Environmental Protection Agency (EPA). The responsibilities of these agencies range from protecting water quality and other environmental resources, to navigation, food safety concerns, and interactions with federal fishery management plans. The jumble of authorities makes it difficult for those involved in aquaculture activities to know what permits are needed and what relevant rules govern their operations. (See Box 6.1 Swimming Through Hoops: Establishing an Offshore Aquaculture Facility.) Simply put, there is no overall ocean governance structure to comprehensively manage this new and emerging use in federal waters.

In 1980, Congress passed the National Aquaculture Act, stating that it is in the national interest to encourage the development of aquaculture in the United States and calling for a national aquaculture development plan. The Act required the Secretaries of Agriculture, Commerce, and the Interior to prepare a report on federal laws and regulations that restrict the development of commercial aquaculture operations and submit the report to Congress with recommendations on how to remove unnecessarily burdensome regulatory barriers. However, no streamlined regulatory regime has been developed.

As a result of this mix of laws and regulations, applicants have no guarantee of exclusive use of space in offshore areas, private capital is difficult to obtain, insurance companies do not provide coverage, and banks are unwilling to accept the unknown risks involved. Enhanced predictability is needed, as is the elimination of unnecessary hurdles and the reduction of potential conflicts with other commercial and recreational users of offshore areas and resources.

Developing a New Marine Aquaculture Management Framework

For the marine aquaculture industry to reach its full potential, the United States, in cooperation with states, tribes, and territories, should develop a coordinated and consistent policy, and a robust regulatory and management framework. Federal and state agencies, with full participation by the industry, will need to implement the new framework, and the academic community will be called upon to provide scientific and engineering support to ensure that marine aquaculture activities are ecologically and economically sustainable. It is important for this framework to be flexible and responsive to changes in the industry. Finally, as noted, development of a national aquaculture management framework must be considered within the context of overall ocean policy development, taking into account other traditional, existing, and proposed uses of the nation's ocean resources. (More information about developing a framework for managing multiple activities in federal waters, including aquaculture, is found in Chapter 6.)

Coordinated Action

The inherent differences between land-based, closed-system aquaculture operations and marine-based operations should be acknowledged in any new legislation and in the new management framework. The respective roles of the federal agencies involved with the marine aquaculture industry must also be clarified, duplicative or outdated laws and regulations eliminated, and marine aquaculture policies, programs, and practices coordinated. In addition, a lead federal agency is needed to act as the main interface with industry and overseer of the government's public trust responsibilities.

The National Aquaculture Act of 1980 established the Joint Subcommittee on Aquaculture (JSA) within the National Science and Technology Council (NSTC) structure. The JSA coordinates federal agency activities, ensures communication among the agra-
cies, and provides recommendations for national aquaculture policy. Members of the JSA include: the Secretaries of USDA (permanent chair), DOI, the Departments of Commerce, Energy, and Health and Human Services; the Administrators of EPA, the Small Business Administration and the U.S. Agency for International Development; the Chair of the Tennessee Valley Authority; and the Director of the National Science Foundation. This kind of coordination is necessary, although the issues to be addressed go far beyond the purview of the NSTC. Close coordination will be needed between the JSA and the National Ocean Council.

Recommendation 22-1

Congress should amend the National Aquaculture Act to designate the National Oceanic and Atmospheric Administration (NOAA) as the lead federal agency for marine aquaculture, create an Office of Sustainable Marine Aquaculture in NOAA, and designate the Secretary of Commerce as a permanent co-chair, along with the Secretary of Agriculture, of the Joint Subcommittee on Aquaculture. NOAA should use this authority to design and implement national policies for environmentally and economically sustainable marine aquaculture.

Implementation

In overseeing marine aquaculture activities, including evaluating and approving offshore aquaculture operations, NOAA will need to practice wise stewardship of ocean resources and weigh the needs of a variety of stakeholders. At the same time, offshore aquaculture operators will need assurance that they can have exclusive access to certain waters for specific periods of time to secure financial investments.

These goals can best be achieved through the development and implementation of a leasing system for the ocean surface, water column, and ocean bottom that protects marine resources and environments, offers adequate exclusivity to aquaculture operations, and institutes a system of revenue collection that acknowledges the public interest in ocean space and resources. The leasing system will also need to specify details, such as applicant eligibility and the acceptable scope, size, duration, and degree of exclusivity for facilities. Competing uses of ocean and coastal areas, and the potential for impacts from aquaculture on other ocean uses, must also be considered.

Enhanced coordination is also needed between federal and state aquaculture policies and regulations to provide consistency to the industry and to adequately manage potential impacts that cross jurisdictional lines, such as the spread of disease. Significant state participation and input is needed in the development and implementation of a new national management framework, which should include guidelines and regulations that are complementary at the federal and state levels. The interstate fishery commissions could be a valuable resource to assist in coordinating federal and state activities.

Recommendation 22-2

The National Oceanic and Atmospheric Administration's new Office of Sustainable Marine Aquaculture should be responsible for developing a comprehensive, environmentally-sound permitting, leasing, and regulatory program for marine aquaculture.

The permitting and leasing system and implementing regulations should:

- reflect a balance between economic and environmental objectives consistent with national and regional goals.
- be coordinated with guidelines and regulations developed at the state level.
- include a system for the assessment and collection of a reasonable portion of the resource rent generated from marine aquaculture projects that rely on ocean resources held in the public trust.
- include the development of a single, multi-agency permit application for proposed marine aquaculture operations.
- include a permit review process that includes public notice and an opportunity for state, local, and public comment.
- require applicants to post a bond or other financial guarantee to ensure that any later performance problems can be remedied and that abandoned facilities can be safely removed at no additional cost to taxpayers.
- require the development, dissemination, and adoption of best management practices, with periodic updates to reflect advances in research and technology.
- be well coordinated with other activities in federal waters.

Increasing the Knowledge Base

Enhanced investments in research, demonstration projects, and technical assistance can further the development of a responsible and sustainable marine aquaculture industry. Science-based information can help the industry address environmental issues, understand socioeconomic impacts to coastal communities, conduct risk assessments, develop technology, select species, and improve best management practices. It is also vital for developing fair and reasonable policies, regulations, and management measures.

In the last two decades, the number of research and monitoring programs related to aquaculture has surged. Much of the work conducted worldwide has focused on the effects of open-water, net-pen culture on the environment. In the United States, early research efforts focused on fish hatchery effluents and catfish ponds. As the domestic industry has diversified, so has the scope of research efforts. Major federal investments are examining the impacts of marine shrimp-pond and salmon net-pen cultures, as well as issues concerning aquaculture feeds, species introductions, the use of chemicals and pharmaceuticals, and effluent controls.

Most of the federal research to support marine aquaculture has been carried out under the auspices of NOAA's National Sea Grant College Program, which funds primarily university-based research. Results are used by educators and outreach specialists to improve resource management and address development and conservation issues. Sea Grant-funded information is also used to increase the knowledge base of industry, government agencies, and the public. As noted in Chapter 25, research on the potential socioeconomic impacts of marine aquaculture is sparse.

**Recommendation 22-3**

The National Oceanic and Atmospheric Administration's new Office of Sustainable Marine Aquaculture should expand marine aquaculture research, development, training, extension, and technology transfer, including a socioeconomic component. The Office should set priorities for research and technology, in close collaboration with the National Sea Grant College Program, states, tribes, academia, industry, and other stakeholders.

**CHAPTER 22: SETTING A COURSE FOR SUSTAINABLE MARINE AQUACULTURE**

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Promoting International Improvements and Cooperation

An estimated one billion people worldwide rely on fish as their primary source of animal protein. This demand will continue to rise as human populations increase and wild stocks around the world are depleted. Aquaculture has been growing almost six times faster in developing countries than in developed countries. The United Nations Food and Agriculture Organization (FAO) estimates that by 2030 more than half of the fish consumed globally will be produced through aquaculture.  

While the majority of international aquaculture occurs in inland and coastal areas, interest in offshore operations is also growing. There are even proposals to establish aquaculture operations on the high seas (see Chapter 29 for a discussion of emerging international ocean-related management challenges). This new interest is accompanied by growing concerns about the potential environmental impacts of offshore operations. The use of non-native species for aquaculture also poses ecological risks, particularly in view of the absence of regulations and enforcement in many countries. Global policies on prevention, containment, monitoring, and risk assessments are needed to prevent the spread of invasive species and ensure that industries operate sustainably.

Efforts are underway at FAO to assess the possible environmental implications of growing aquaculture operations around the world and to develop appropriate protocols for use by government and industry. In the meantime, FAO's non-binding Code of Conduct for Responsible Fisheries includes a number of aquaculture provisions. The Code calls for: appropriate assessments and monitoring to minimize adverse impacts from discharges of effluents, waste, drugs, and chemicals; consultation with neighboring countries prior to the introduction of non-native species; conservation of genetic diversity; and responsible choices of species, siting, and management. The implementation of these guidelines will require strong commitments from the global community.

**Recommendation 22-4**

The United States should work with the United Nations Food and Agriculture Organization to encourage and facilitate worldwide adherence to the aquaculture provisions of the Code of Conduct for Responsible Fisheries.

References

Legal Aspects of Continental Shelf Limits

Tomas H. Heidar

1. INTRODUCTION

In my presentation I will deal with legal aspects of continental shelf limits, bearing in mind, however, that the legal and scientific aspects are very much intertwined and not easily separated. My focus will naturally be on the determination of the outer limits of the continental shelf, which is the subject matter of this Conference, but I will also say a few words about the legal status of the continental shelf.

In keeping with the title of this first Panel, my intention is to introduce and give an overview of some of the most important issues we will be dealing with at this Conference. To some extent I will refer to the subsequent specialized presentations for a more thorough consideration of the issues.

1.1. What is the continental shelf?

Let us start by taking a quick look at some key terms regarding the continental shelf.

Continental shelf in the traditional scientific sense is the platform on which the land lies. This is marked shelf on picture 1. We could say that this is the continental shelf in a narrow sense.

Continental shelf in the broader, legal sense, however, extends throughout the natural prolongation of the land territory to the outer edge of the so-called continental margin, or to a distance of 200 nautical miles (M) from the baselines where the outer edge does not extend up to that distance.

* The author’s PowerPoint presentation, flowchart and pictures may be viewed on the accompanying CD.

* Legal Adviser, Ministry for Foreign Affairs of Iceland, and Director of the Law of the Sea Institute of Iceland. The views expressed in this paper are those of the presenter and do not necessarily reflect the views of the Ministry for Foreign Affairs of Iceland.
The continental margin consists of the seabed and subsoil of the shelf, the slope and the rise. In this area, particularly the rise, there are typically sediments that have washed down from the continents through the ages. Beyond the continental margin is the deep ocean floor.

The Law of the Sea Convention is based on this broader meaning of the term continental shelf, but the Convention provides important limitations to the breadth of the continental shelf. The so-called foot of the slope plays a very important role in that respect, as we shall see later. As a general rule, the foot of the slope shall be determined as the point of maximum change in the gradient at the base of the slope.

2. HISTORICAL BACKGROUND

Awareness of the historical background often helps to understand the current situation. How did we get to where we are today?

Until the 20th Century the seabed was generally regarded as an international area. No distinction was made between the continental shelf and the deep ocean floor, and coastal States had only sovereign rights over the seabed within their 3-M territorial sea.

In the first decades of that Century, however, States started declaring sovereign rights for the exploitation of sedentary species on the continental shelf, or even asserting rights of control over specific areas of the shelf. With technical advances, the interest in having control over the shelf resources beyond the territorial sea increased, and the development was rapid.
2.1. The Truman Proclamation, 1945

It is customary, however, to regard the Proclamation made by President Truman of the United States in 1945 as the first clear assertion of the idea that the resources of the continental shelf belong to the coastal State.

The Truman Proclamation stated that “the Government of the United States regards the natural resources of the subsoil and seabed of the continental shelf beneath the high seas but contiguous to the coasts of the United States as appertaining to the United States, subject to its jurisdiction and control.” A press release attached to the Proclamation stated that the continental shelf was considered as extending to a water depth of 100 fathoms, which equals 600 feet or 200 metres. The Truman Proclamation was followed by similar claims of many other States. Within a decade, a consistent and general State practice had developed in this field that other States did not object to. This is a classic example of the formation of a new rule of customary law.

The South American countries Chile, Ecuador and Peru, which have no real continental shelf in the physical sense, went one step further with the Santiago Declaration in 1952. They claimed full sovereignty over the seabed and subsoil for a distance of 200 M from their coasts, and they also claimed sovereignty over the superjacent waters and the air space above. This practice was met with resistance by other States, but was going to have a huge impact on the development of the law of the sea as far as the breadth of the exclusive economic zone and the continental shelf was concerned.

2.2. The Geneva Convention on the Continental Shelf, 1958

One of the four conventions adopted by the first United Nations Conference on the Law of the Sea in Geneva in 1958 was the Convention on the Continental Shelf. The Convention provided that the coastal State had sovereign rights for the purpose of exploring and exploiting the natural resources of the continental shelf. It also made clear that the rights of the coastal State over the continental shelf did not affect the legal status of the superjacent waters as high seas or that of the air space above.

The inner limit of the continental shelf was defined in the Geneva Convention as the outer limit of the territorial sea. The outer limits of the continental shelf were defined by two different criteria. The sovereign
rights of the coastal State should extend to a depth of 200 metres or, beyond that limit, to where the depth of the superjacent waters admitted of the exploitation of the natural resources of the shelf. This latter criterion was called the exploitability criterion.

2.3. The North Sea Continental Shelf cases, 1969

In the North Sea Continental Shelf cases in 1969, the International Court of Justice confirmed that these provisions of the Geneva Convention represented customary law. However, the Court also laid much stress on the continental shelf being the natural prolongation of the coastal State’s land mass. The Court said the following: “More fundamental than the notion of proximity appears to be the principle … of the natural prolongation or continuation of the land territory …” This conclusion of the Court was to have big influence on the development of this issue at the Third United Nations Conference on the Law of the Sea in 1973 to 1982.

2.4. The Third United Nations Conference on the Law of the Sea

The exploitability criterion used in the 1958 Geneva Convention to define the outer limits of the continental shelf was subject to a lot of criticism. This criterion was considered too imprecise and unclear. It became obvious to States that if it was to be maintained, new technology would push the limit farther and farther from the shore and that, eventually, coastal State continental shelf claims would cover the entire ocean floor.

In 1970 the United Nations General Assembly adopted a resolution where the deep seabed beyond national jurisdiction was declared the common heritage of mankind. This also called for a clearer and more decisive definition of the outer limits of the continental shelf.

While there was general agreement at the Third United Nations Conference on the Law of the Sea to build on the provisions of the Geneva Convention regarding the legal status of the continental shelf and its inner limit, there were divergent views on what the definition of the outer limit should be. Many States favoured a continental shelf limit which coincided, in all circumstances, with the 200-M exclusive economic zone. This position followed from the fact that physically, most States do not have any possibility of extending their continental shelf jurisdiction beyond 200 M. However, a number of coastal States with a potential for extended
continental shelves favoured a definition which would, subject to certain conditions, extend the continental shelf seaward of the 200-M limit.

After lengthy and complicated negotiations, a compromise was reached between the two groups. It was recognized that coastal States could, subject to detailed conditions that I will describe in a moment, extend their continental shelf jurisdiction beyond 200 M. In turn the coastal States in question agreed on a provision pertaining to revenue sharing with respect to exploitation of non-living resources of the continental shelf beyond 200 M.⁹

3. DETERMINATION OF THE OUTER LIMITS OF THE CONTINENTAL SHELF

The provisions on the continental shelf are to be found in Part VI of the 1982 Convention on the Law of the Sea. The first article, article 76, deals with the definition of the continental shelf. The determination of the outer limits of the continental shelf is a complicated process and I think it is practical to go through it in four steps.
3.1. General definition of the continental shelf

Firstly, paragraph 1 of article 76 provides the general legal definition of the continental shelf:

The continental shelf of a coastal State comprises the seabed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend up to that distance.

This paragraph establishes the right of coastal States to determine the outer limits of the continental shelf by means of two criteria based on either natural prolongation or distance. The latter provides a minimum breadth of the continental shelf of 200 M. It applies in cases where the natural prolongation does not reach that limit.

Natural prolongation is the key parameter in the general part of the definition of the continental shelf. By the plain meaning of the word “prolongation” the required continuity must be unbroken from the shoreline to the outer edge of the continental margin.

It follows that a coastal State can not avail itself of the minimum 200 M provision in order then to apply natural prolongation only from that limit farther seaward, and not all the way from the shore.

Paragraph 4 (a) of article 76 suggests the formulation of a test of appurtenance in order to entitle a coastal State to extend the outer limits of the continental shelf beyond the limit set by the 200-M distance criterion. This test consists in the demonstration of the fact that the natural prolongation of its land territory to the outer edge of the continental margin extends beyond the 200-M limit.\(^\text{10}\)

Paragraph 3 describes the continental margin as comprising “the submerged prolongation of the land mass of the coastal State”, and as consisting “of the seabed and subsoil of the shelf, the slope and the rise.” The continental margin “does not include the deep ocean floor with its oceanic ridges or the subsoil thereof.”

Apparently, the definition of the continental margin is first and foremost based on geomorphology, or submarine landscape, and it is neutral with respect to crustal type, in the sense of “continental” and
"oceanic" crust. No reference is made to crustal type in article 76 despite many suggestions to that effect during the negotiations. This implies that the submerged prolongation of the landmass of a coastal State, regardless of its characteristics, comprises its continental margin and creates its entitlement to a continental shelf.

My countryman, Steinar Thor Gudlaugsson, will deal specifically with natural prolongation and the concept of the continental margin in Panel II.

Finally, under the general part of the definition of the continental shelf, it should be borne in mind that according to article 121, paragraph 2, of the Law of the Sea Convention, the continental shelf of an island is determined in accordance with the provisions of the Convention applicable to other land territory. No distinction is thus made between the determination of the outer limits of the continental shelf of a mainland on the one hand and of an island on the other hand.

3.2. Determination of the foot of the slope

The second step in the process is the determination of the foot of the continental slope, which is a primary feature in the delimitation of the continental shelf beyond the 200-M limit. According to paragraph 4 (a), it is the reference baseline from which the breadth of the limits specified by the Irish formula and the Hedberg formula is measured.

Paragraph 4 (b) provides a dual regime for the determination of the foot of the slope. According to the Scientific and Technical Guidelines of the Commission on the Limits of the Continental Shelf, as a general rule the foot of the slope shall be determined as the point of maximum change in the gradient at its base. This implies that morphological and bathymetric evidence shall be applied whenever possible.11

However, when such evidence given by the maximum change in the gradient does not or cannot locate reliably the foot of the slope at its base, coastal States are allowed to use evidence to the contrary to the general rule, which is the best geological and geophysical evidence available to them, to locate the foot of the slope.12

In Panel II Dave Monahan will deal with the determination of the foot of the slope on the basis of the general rule, and Richard T. Haworth will deal with the determination of the foot of the slope by means of evidence to the contrary to the general rule.
3.3. Determination of the outer limits of the continental margin

The third step is establishing the outer edge of the continental margin when it extends beyond the 200-M mark by two alternative formulas set out in paragraph 4 (a).

![Picture 3]

The *Irish formula* entails drawing a line connecting points not more than 60 M apart, at each of which points the thickness of sediments is at least 1 per cent of the shortest distance from such point to the foot of the slope. Thus, if the formula is to apply at a distance of 100 M from the foot of the slope, 1-M thickness of sediment must be present.

The aim of the Irish formula was to ensure that coastal State sovereign rights would extend to a major portion of the continental rise where significant hydrocarbon resources were expected to exist.

According to the Scientific and Technical Guidelines, the Commission invokes a principle of continuity in the application of this formula to state that:

“(a) to establish fixed points a coastal State may choose the outermost location where the 1 per cent or greater sediment thickness occurs within and below the same continuous sedimentary apron; and that
(b) for each of the fixed points chosen the Commission expects documentation of the continuity between the sediments at these points and the sediments at the foot of the continental slope."

The Hedberg formula entails drawing a line connecting points not more than 60 M apart, which points are not more than 60 M from the foot of the slope.

A State may apply the two formulas alternatively; it may apply the Irish formula in certain portions of its continental shelf and the Hedberg formula in other portions, in a manner to maximize its entitlement.

Clearly, the application of the formulas in determining the outer limits of the continental margin results in a considerable limitation of the continental shelf compared to the general definition of the continental shelf.

3.4. Maximum limits of the continental shelf

The fourth and last step in the process of determining the outer limits of the continental shelf consists of further constraints, the maximum limits.

According to paragraph 5 of article 76, the fixed points drawn in accordance with the Irish formula and the Hedberg formula shall either not exceed 350 M from the baseline of the territorial sea or shall not exceed 100 M from the 2,500 metre isobath, which is a
line connecting the depth of 2,500 metres. The first constraint is based purely on a distance criterion, whereas the second is based on a depth-cum-distance criterion.

As the formulas, the constraints may, as a general rule, be used alternatively, and only one of them has to be respected in each portion of the continental shelf. It should be emphasized, however, that the constraints do not provide per se the basis for entitlement to an extended continental shelf. They are solely constraints to the lines produced by the Irish and Hedberg formulas in order to delineate the outer limits of the continental shelf.

By virtue of paragraph 6, the 100 M from the 2,500 meter isobath constraint may not be used on submarine ridges – the maximum limit on such ridges is fixed at 350 M. This exception does not apply to submarine elevations that are natural components of the continental margin, such as its plateaux, rises, caps, banks and spurs.

3.5. Ridges

I have mentioned three types of sea floor highs that are all subject to different treatment:

1. According to paragraph 3 of article 76, the continental margin does not include the deep ocean floor with its oceanic ridges.

2. According to paragraph 6, the maximum limit on submarine ridges is 350 M from the baseline of the territorial sea.

3. According also to paragraph 6, both constraints can be applied to submarine elevations that are natural components of the continental margin.

Submarine ridges have been described as ridges that are part of the natural prolongation of the land territory of a coastal State and are thus distinct from oceanic ridges of the deep ocean floor. Based on the concept of neutrality with respect to crustal type, however, it would seem that submarine ridges are not easily distinguished from submarine elevations.

In Panel III on ridge issues, Philip A. Symonds will give a scientific overview of ridges related to article 76, Arthur Grantz will speak on treatment of ridges and borderland under article 76 and take the example
of the Arctic Ocean, and Harald Brekke will deal with the ridge provisions of article 76.

**3.6. Commission on the Limits of the Continental Shelf**

The Commission on the Limits of the Continental Shelf is one of the three institutions set up by the Law of the Sea Convention. The Commission was an integral part of the compromise reached regarding article 76 and its provisions on the determination of the outer limits of the continental shelf.

**3.6.1. Functions**

According to paragraph 8 of article 76, the coastal State shall submit information on the limits of the continental shelf beyond the 200-M limit to the Commission on the Limits of the Continental Shelf set up under Annex II to the Convention. After reviewing the submitted information, the Commission shall make recommendations to the coastal State on matters related to the establishment of the outer limits of the continental shelf. The limits of the shelf established by the coastal State on the basis of these recommendations shall be final and binding.

Annex II, article 4, provides that where a coastal State intends to establish the outer limits of its continental shelf beyond 200 M, it shall submit particulars of such limits to the Commission along with supporting scientific and technical data as soon as possible, but in any case within 10 years of the entry into force of the Convention for that State.

The Convention entered into force on 16 November 1994, but at the Eleventh Meeting of the States Parties to the Convention in 2001, the States Parties decided that the ten-year time period would commence as of 13 May 1999, the day the Commission adopted the Scientific and Technical Guidelines, for those States that were by that time Parties to the Convention.

Besides making recommendations to coastal States regarding the establishment of their extended continental shelves, the Commission has the function of providing scientific and technical advice if requested by the coastal State concerned during the preparation of the relevant data.

Finally, from the recommendatory role of the Commission follows that it has the function of interpreting the Convention – in particular article 76. The Scientific and Technical Guidelines of the Commission, which are not
legally binding, represent in essence an interpretation thereof. According to the Guidelines, the Commission aims to “clarify its interpretation of scientific, technical and legal terms contained in the Convention. Clarification is required in particular because the Convention makes use of scientific terms in a legal context which at times departs significantly from accepted scientific definitions and terminology.”

In Panel IV Peter F. Croker will talk about the progress of the Commission to date and future challenges.

3.6.2. Composition

The Commission consists of 21 members who shall be experts in the field of geology, geophysics or hydrography. They are elected by the States Parties from among their nationals, having due regard to the need to ensure equitable geographical representation. They serve in a personal capacity.

The Convention does not provide for the participation of legal experts in the Commission. This omission has been criticized by many in light of the fact that, even though it is not a court, one of the cardinal functions of the Commission must necessarily be to interpret or apply the relevant provisions of the Convention, which is essentially a legal task.

In my view, the absence of legal experts in the Commission makes it all the more important that the members of the Commission not only get good legal support from the UN Secretariat but also that they themselves appreciate the legal framework and context provided by the Law of the Sea Convention, in particular article 76. This includes the travaux preparatoires and compromises reached at the Law of the Sea Conference, which do not necessarily make much sense from a strictly scientific point of view.

3.6.3. Interpretation of article 76, paragraph 8

Paragraph 8 of article 76 gives rise to many questions regarding its interpretation. According to the paragraph, coastal States shall make a submission to the Commission within the 10-year period. What happens if they do not? Although States Parties are under a legal obligation to comply with the provisions of the Convention, there is no sanction for failure to make a submission within that period. Article 77, paragraph 3, provides that the rights of the coastal State over the continental shelf do
not depend on occupation, effective or notional, or any express proclamation. However, a coastal State that explores the continental shelf or exploits its natural resources beyond 200 M before its outer limits are final and binding faces a degree of uncertainty, in particular if there is a bilateral issue involved with a neighbouring opposite or adjacent State.23

Are non-Parties under the obligation under customary international law, or are they allowed, on the basis of the Convention or customary law, to make a submission to the Commission? In my view, that does not appear to be the case, even though the term coastal State is used both in paragraph 8 and in Annex II, article 4.24 In any event, this question may prove academic if the relevant non-Parties decide to ratify the Convention. Canada and Denmark, for example, are now in the final stages of their ratification process.

In his presentation in Panel IV, Alexei A. Zinchenko will deal with this question and other emerging issues in the work of the Commission, including the issue of confidentiality, which I will not deal with here.

The last sentence of paragraph 8 reads: “The limits of the continental shelf established by a coastal State on the basis of these recommendations shall be final and binding [emphasis added].”

What if the coastal State disagrees with the recommendations of the Commission? Article 8 of Annex II provides that in such a situation the coastal State shall, within a reasonable time, make a revised or new submission to the Commission. This process, which theoretically could go on indefinitely, has been described as being a narrowing down ping-pong procedure.25 Preferably this process between the coastal State and the Commission should be continued until some accommodation is reached.26

Failing that, however, it has to be borne in mind that the Commission has only recommendatory powers and it has not been granted the power to impose its recommendations on coastal States, thus determining the outer limits of the continental shelves of coastal States.27 The coastal State has the sovereign rights to establish the outer limits.

The Commission has also not been granted the power to submit any dispute concerning the determination of the limit of the outer continental shelf to the dispute settlement procedures provided for in the Convention.28 This would include a dispute on whether or not outer limits established by the coastal State are on the basis of recommendations of the Commission.29 The International Seabed Authority does not either possess the locus standi to mount a legal action with respect to any dispute
concerning the outer limits of the continental shelf. Only those third States directly affected seem to have the possibility to take legal action.  

The use of the words on the basis of seems to provide the coastal State with some flexibility, although unspecified. However, it seems to imply a closer fit between a coastal State’s established outer limit and Commission recommendations than the alternative wording of taking into account that was considered during the negotiations at the Law of the Sea Conference.

My predecessor at the Foreign Ministry, Gudmundur Eiríksson, will discuss the case of disagreement between the coastal State and the Commission in Panel IV.

According to paragraph 8, the limits established by the coastal State on the basis of the recommendations of the Commission shall be final. This means that, unlike under the evolutionary exploitability rule of the Geneva Convention, the limits are established once and for all.

On whom are the limits binding? The submitting State alone or other States as well?

The US Government has noted that “final and binding” means that a claim may not be contested. One author states that the limit thus established will become obligation erga omnes, which means final and binding on all States. This suggests that “final and binding” applies to both the submitting State and all other States. If this is the case then the recommendations of the Commission obviously carry much more weight than if the limits established on the basis thereof would only be binding on the submitting State.

However, some authors are of the opinion that only the submitting State is bound and that other States are not deprived of their legal right to disagree with and challenge another State’s established outer limit, even if that outer limit delineation can be said to be on the basis of Commission recommendations.

My view on this question is that if the coastal State establishes the outer limits of its continental shelf on the basis of the recommendations of the Commission, then the limits are binding on the coastal State and all States Parties to the Convention, but not on non-Parties.

3.6.4. Submissions in cases of unresolved land or maritime disputes

According to article 9 of Annex II to the Convention, the actions of the Commission shall not prejudice matters relating to delimitation of
boundaries between States with opposite or adjacent coasts. This problem
is dealt with by Rule 44 of and Annex I to the Rules of Procedure adopted
by the Commission on 4 September 1998.\textsuperscript{37}

In its Rules the Commission first expressly recognizes that the
competence with respect to matters regarding disputes that may arise in
connection with the establishment of the outer limits of the continental
shelf rests with States.\textsuperscript{38}

The Rules provide for the possibility of partial submissions. A
submission may be made by a coastal State for a portion of its continental
shelf in order not to prejudice questions relating to the delimitation of
boundaries between States in any other portion or portions of the
continental shelf for which a submission may be made later, notwithstanding the provisions regarding the ten-year period.\textsuperscript{39}

According to the Rules, in cases where a land or maritime dispute
exists, the Commission shall not examine and qualify a submission made
by any of the States concerned in the dispute. However, the Commission
may examine one or more submissions in the areas under dispute with
prior consent given by all States that are parties to such a dispute.\textsuperscript{40} Two
or more States are entitled to make joint or separate submissions by
agreement.\textsuperscript{41}

This is very important as it is clear that the outer limits of the
continental shelf will not be finally established without recommendations
by the Commission.\textsuperscript{42}

In order to settle issues finally in a disputed area of an extended
continental shelf, two things are required: First, the coastal States in
question must reach an agreement on how to divide the disputed area
between them, or, alternatively, agree on a joint exploitation area. Second,
the coastal States concerned must establish the outer limits of the
continental shelf, vis-à-vis the international seabed area, after having
made joint or separate submissions to the Commission and having
received recommendations from the Commission.

In Panel IV Alex G. Oude Elferink will address submissions of coastal
States to the Commission in cases of unresolved land or maritime
disputes, and David A. Colson will deal with delimitation of the outer
continental shelf between States with opposite or adjacent coasts.
3.7. Submission of charts and other information to the UN and publication thereof

Paragraph 9 of article 76 describes the last stage in the process of the coastal State in the determination of the outer limits of its continental shelf. It shall submit to the Secretary-General of the United Nations charts and relevant information, including geodetic data, permanently describing the outer limits of its continental shelf. The Secretary-General shall give due publicity thereto.

These provisions ensure that other States and institutions are informed of the extent of a coastal State’s continental shelf.

Before turning my remarks to the legal status of the continental shelf, I would like to mention that Panel V will deal with case studies on the implementation of article 76 and the International Seabed Authority.

4. THE LEGAL STATUS OF THE CONTINENTAL SHELF

4.1. Rights of coastal States over the continental shelf

According to article 77 of the Law of the Sea Convention, the coastal State exercises sovereign rights for the purpose of exploring the continental shelf and exploiting its natural resources. The coastal State does not enjoy full sovereignty over the continental shelf, but functional rights and jurisdiction, as is the case in the exclusive economic zone. This includes the right to construct artificial islands, installations and structures and to authorize and regulate drilling on the continental shelf. The coastal State also has jurisdiction over marine scientific research on its continental shelf and can, in principle, withhold its consent to the conduct of resource oriented research on the shelf by another State.

The sovereign rights of the coastal State are exclusive in the sense that if it does not explore the continental shelf or exploit its natural resources, no one may undertake these activities without the express consent of the coastal State.

Paragraph 3 of article 77 codifies the rule established in the North Sea Continental Shelf cases in 1969 that the rights of the coastal State over the continental shelf do not depend on occupation, effective or notional, or on any express proclamation. The rights of the coastal State over the shelf
exist *ipso facto* and *ab initio* by virtue of its sovereignty over the land territory. In short, there is an inherent right.\(^5^0\)

### 4.2. Resources of the continental shelf

The resources of the continental shelf are the mineral resources and other non-living resources of the seabed and subsoil, together with so-called sedentary species,\(^5^1\) for instance some types of shellfish.

The most important resources are, of course, the huge oil and gas reserves, but various other types of resources, such as living organisms, are getting increased attention. With new technology we are able to both gain more information on the resources and have more possibilities of utilizing them.

Obviously, the existence of these resources makes the legal status of the continental shelf a very important matter. It is appropriate that we should include in this Conference a special panel, Panel VI, on the various resources of the shelf.

### 4.3. Legal status of the superjacent waters and rights of other States

The continental shelf only includes the seabed and the subsoil. The superjacent waters and the airspace above do not fall thereunder, and it is expressly stated in article 78 that the rights of the coastal State over the continental shelf do not affect the legal status of those areas.\(^5^2\)

On the high seas other States enjoy freedom of navigation, overflight, fishing and scientific research under article 87 of the Law of the Sea Convention. Within the exclusive economic zone other States only enjoy freedom of navigation and overflight.\(^5^3\) According to article 79, all States are entitled to lay submarine cables and pipelines on the continental shelf, subject to the provisions of that article.

### 4.4. Payments and contributions with respect to the exploitation of the continental shelf beyond 200 M

The aforementioned provisions of the Law of the Sea Convention regarding the legal status of the continental shelf are almost repeated *ad verbatim* from the 1958 Geneva Convention. However, article 82, which provides for revenue sharing with respect to exploitation of non-living resources of the continental shelf beyond 200 M, is new to international
law. This provision, it will be recalled, formed an imperative part of the compromise at the Law of the Sea Conference on the definition of the outer limits of the continental shelf.  

According to article 82, the coastal State shall make payments or contributions in kind in respect of the exploitation of the non-living resources of the continental shelf beyond the 200-M limit. The payments and contributions shall be made annually with respect to all production at a site after the first five years of production at that site. For the sixth year, the rate of payment or contribution shall be 1 per cent of the value or volume of the production. The rate shall increase by 1 per cent for each subsequent year until the twelfth year and shall remain at 7 per cent thereafter.

The payments or contributions shall be made through the International Seabed Authority, which shall distribute them to States Parties to the Convention, on the basis of equitable sharing criteria, taking into account the interests and needs of developing States, particularly the least developed and the land-locked among them.
Notes


4 Article 2(1) and (2) of the 1958 Convention on the Continental Shelf.

5 Article 1 of the 1958 Convention on the Continental Shelf.

6 [1969] International Court of Justice Reports 3.

7 Ibid., at p. 31.

8 General Assembly Resolution 2749 (XXV) of 17 December 1970.


11 Ibid., pp. 37–42.

12 Ibid., pp. 43–49.


18 Article 3(1)(b) of Annex II to the Law of the Sea Convention.


20 Article 2(1) of Annex II to the Law of the Sea Convention.

27 Ibid., p. 1240.
28 Ibid., p. 1250.
29 See Ted L. McDorman, supra note 24, p. 315.
31 Robert W. Smith and George Taft, supra note 23, p. 20: “The “based upon” requirement in paragraph 8 ... provides certainty and consistency for the international community, while preserving sufficient, although unspecified, flexibility for the coastal State.”
33 Article 1 of the 1958 Convention on the Continental Shelf.
34 Commentary – The 1982 United Nations Convention on the Law of the Sea and the Agreement on Implementation of Part XI, attached to the Letter of Submittal from the US Secretary of State to the US President, part of the Message of Transmittal of the Law of the Sea Convention from the US President to the US Congress, US Senate, Treaty Doc. 103–39, 103rd Congress, 2nd Session, 1994, p. 57: “If the coastal State agrees, the limits of the continental shelf established by the coastal State on the basis of these recommendations are final and binding (article 76(8)), thus providing stability to these claims which may not be contested.”
36 Ted L. McDorman, supra note 24, p. 315.
38 Ibid., Annex I, paragraph 1.
39 Ibid., Annex I, paragraph 3.
40 Ibid., Annex I, paragraph 5(a).
41 Ibid., Annex I, paragraph 4.
42 See article 76(8) in fine of the Law of the Sea Convention.
43 Article 77(1) of the Law of the Sea Convention.
44 See article 56(1) of the Law of the Sea Convention.
45 Article 80 of the Law of the Sea Convention.
46 Article 81 of the Law of the Sea Convention.
47 Article 246 of the Law of the Sea Convention.
48 Ibid., paragraph 5.
49 Article 77(2) of the Law of the Sea Convention.
50 [1969] International Court of Justice Reports, 3, at p. 23.
51 Article 77(4) of the Law of the Sea Convention.
52 Article 78(1) of the Law of the Sea Convention.
53 Article 58(1) of the Law of the Sea Convention.
55 Article 82(1) of the Law of the Sea Convention.
56 Article 82(2) of the Law of the Sea Convention.
57 Article 82(3) of the Law of the Sea Convention.
Chapter 6 recommended development of a coordinated offshore management regime that would be comprehensive, transparent, and predictable, bring a fair return to the public, and promote a balance between economic and environmental considerations. The management of nonliving resources in federal waters raises many of the same fundamental policy questions. From the well developed, but politically contentious, outer Continental Shelf oil and gas program to new and emerging offshore uses that lack comprehensive management regimes, much can be learned. But much work also remains in developing a consistent system for unlocking the treasures of the sea while protecting the marine environment and providing affected parties a voice in decisions.

Exercising Jurisdiction over Nonliving Resources in Federal Waters

In addition to its responsibilities for living marine resources, the federal government also exercises jurisdiction over nonliving resources, energy and other minerals located in the waters and seabed of the more than 1.7 billion acres of the outer Continental Shelf (OCS). Offshore oil and gas development has the most mature and broadest management structure of all such resources. It also has the longest and richest history, characterized by major changes to the underlying law that established the more comprehensive administrative regime, as well as intense political conflict resulting from divisions among stakeholders and tensions inherent in American federalism. The development of other ocean energy resources—some of which are newly emerging technologies—have differing levels of management, but none are currently making any noteworthy contributions to domestic production numbers. Historically, there also have been varying expressions of commercial interest in non-energy minerals in the U.S. exclusive economic zone (EEZ), but only sand and gravel have been used in recent years by coastal states and communities, because of a change which eased access to those resources.

Managing Offshore Oil and Gas Resources

As noted in Chapter 2, from its beginning, the federal offshore oil and gas program faced controversy over ownership issues, as states unsuccessfully sued the federal government
over control of offshore waters. Once that issue was settled legislatively, there was a short but relatively stress-free period. Conflict, however, soon emerged over issues of management, environmental risks, and the costs and benefits of energy exploration and production on the OCS that continues to this day. Proponents point to the program's contributions to the nation's energy supplies and economy, significant improvements in its safety and environmental record, and noteworthy technological achievements. Opponents argue that offshore oil activities harm coastal communities economically and the marine environment unacceptably. The ongoing debate is carried out in the halls of Congress, federal agencies, state and local governments, trade associations, and nongovernmental organizations. OCS oil and gas development is a classic example of the politics of multiple-use resource management, including federal-state tensions, competing user issues, arguments over the interpretation of data, and disagreements concerning tolerable levels of risk.

Despite its political problems, which are best understood through an awareness of the historical context associated with it, today the OCS oil and gas program has a well institutionalized and reasonably comprehensive management regime. While not without its critics, the program seeks to balance the many competing interests involved in offshore energy activity, requires state and local government input in federal decisions, and specifies detailed procedures to be followed by those seeking offshore leases. It also manages the various processes associated with access to non-energy minerals on the OCS.

Energy development in federal waters is big business and has become an important part of the fabric of the U.S. ocean policy mix. Most observers agree that the federal OCS oil and gas program benefits America by helping to meet energy needs, creating thousands of jobs, and contributing billions of dollars to the U.S. Treasury. Despite the limited offshore geographic area from which production flows and in which leasing is authorized, the amount of oil and gas production from the OCS is significant. In 2002 and 2003, federal offshore waters produced more than 600 million barrels of oil annually and about 4.5 trillion cubic feet of natural gas.

From a Quiet Beginning to Prohibitions on Leasing

In 1953, Congress enacted the Submerged Lands Act, which codified coastal states' jurisdiction off their shores out to three nautical miles (or, for historic reasons, nine nautical miles for Texas and the Gulf coast of Florida). That same year, regulation of OCS oil and gas activity seaward of state submerged lands was vested in the Secretary of the Interior with the passage of the Outer Continental Shelf Lands Act (OCSLA), which established federal jurisdiction over the OCS for the purpose of mineral leasing. For a period of some fifteen years, the offshore energy program was relatively quiet, being confined largely to leasing off of Louisiana and Texas. In the late sixties, however, the relative peace on the OCS would be dramatically changed.

As discussed in Chapter 2, the 1969 Santa Barbara blowout took place during an era of rapidly expanding environmental awareness and helped spur the enactment of numerous major environmental laws, including the National Environmental Policy Act (NEPA), the Coastal Zone Management Act (CZMA), the Marine Mammal Protection Act (MMPA), and the Marine Protection, Research, and Sanctuaries Act (MPRSA).

Just as the nation's environmental consciousness rose, so too did recognition of the need for secure supplies of oil and gas. Also, as noted in Chapter 2, the 1973 Arab oil embargo prompted President Nixon to announce plans to lease 10 million OCS acres in 1975, an area equal to the entire amount leased prior to that time. Sales were scheduled not only in areas of earlier OCS activity, but also along the Atlantic and Pacific coasts. The result was a nationwide debate that raged through the remainder of the decade, pitting the oil and gas industry and its allies against various representatives of coastal states, commercial and sport fishing interests, and environmental organizations.
Congress responded to this debate by virtually rewriting the OCSLA in 1978, requiring the Secretary of the Interior to balance the nation's needs for energy with the protection of human, marine, and coastal environments, make certain that the concerns of coastal states and competing users were taken into account, and ensure that some of the newly enacted environmental laws were integrated into the OCS process. However, before regulations and procedures could be fully developed to support the amended law, in the early 1980s the Reagan administration proposed to terminate funding for the CZMA and its Coastal Energy Impact Program (CEIP). The CEIP was specifically designed during the debate over the OCSLA amendments to provide grants and loans to coastal states to deal with the environmental effects occasioned by OCS activities. At the same time these budget cuts were put forward, the Secretary of the Interior was pursuing an aggressive offshore program that would make one billion acres available for oil and gas leasing over the ensuing five years. Thus began the modern day version of the battle over offshore oil, one that has endured for over two decades and has included major legislative and executive branch negotiations, actions to restrict leasing in so-called "frontier" areas, Supreme Court cases, federal-state battles over administrative procedures and the sharing of revenues, and the buyback of some OCS leases by the federal government.

In its initial reaction to the proposed budget cuts, Congress was able to save the CZMA, but not the CEIP. It then turned its attention to restricting and ultimately prohibiting a substantial part of the OCS leasing schedule of the U.S. Department of the Interior (DOI). Using its appropriations process in 1982, Congress put four basins offshore northern California off limits to leasing. For the next few years, every annual DOI funding bill included leasing prohibitions on additional regions until practically all offshore planning areas outside of the Gulf of Mexico and Alaska were excluded.

Additionally, Presidents have expanded on congressional action, providing longer term restrictions than those covered in annual appropriations bills. In 1990, President Bush withdrew areas offshore California, southern Florida, the North Atlantic states, Washington, and Oregon from leasing consideration until after 2000. A few years later, the Clinton Administration added additional areas to the restricted list, extended all of the withdrawals until 2012, and included a permanent prohibition on leasing in national marine sanctuaries. These presidential and congressional actions have removed some 610 million acres from leasing consideration and effectively limited access to the OCS program to the central and western Gulf of Mexico (95 percent of offshore production), a small portion of the eastern Gulf, and virtually all areas off Alaska (Figure 24.1).

The OCS Leasing, Exploration, and Development Process

As already noted, the OCSLA is a relatively comprehensive resource management statute. Besides authorizing the Secretary of the Interior to hold competitive lease sales for offshore tracts, regulate and oversee lease activities, and encourage efficient, safe, and diligent production, the law specifies the steps potential lessees must take to bid on offshore tracts and the process that occurs after receiving a lease. For example, the OCSLA requires consultation with coastal states and localities at a number of points in the federal offshore decision-making process, including during the development of a five-year leasing program, individual lease sale delineations, exploration and development-production plans, and environmental studies and oil and gas information programs. Further, the law carries provisions on offshore safety regulations, citizen suits and judicial review, enforcement authority, the applicability of NEPA, geological and geophysical exploration, export limitations, documentation requirements for offshore vessels and rigs, and numerous opportunities to address other environmental issues.

DOI's Minerals Management Service (MMS) characterizes its administration of the OCSLA as being "process rich" (Figure 24.2). Through the initial years of promulgating regulations to implement the 1978 amendments, and through litigation about the mean-
Figure 24.1: Offshore Oil and Gas Leasing has Been Limited to a Few Planning Areas

- Proposed for leasing in the MMS 2002–2007 leasing program
- Area withdrawn from leasing through 6/30/2012
- Area neither withdrawn nor proposed for leasing

Shown above are the outer Continental Shelf planning areas in the Minerals Management Service’s 2002–2007 leasing program. The entire West Coast and almost all of the East Coast have been restricted from leasing through 2012, leaving only areas of the central and western Gulf of Mexico (and a small area of the eastern Gulf) and virtually all areas off the Alaskan coast available for development.

Source: Minerals Management Service, Washington, DC.

ing of certain provisions, the current OCS leasing and development program is one that is, on balance, coherent and reasonably predictable. Although the comprehensiveness of the program has not precluded the political battles noted above nor avoided restrictions on leasing in frontier areas, in those regions of the nation where offshore development is accepted, the internal administrative process is well known and understood by those who invest in offshore leases and those who choose to observe and comment on such activity. The OCSLA is replete with references to the applicability of other statutes and the authority of other departments in the oil and gas process, and presents a clearer roadmap than most other offshore resource management laws or programs.
Figure 24.2 A “Process Rich” but Clear Path to Offshore Leasing, Exploration, and Development Activities

<table>
<thead>
<tr>
<th>Develop 5-Year Program</th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Lease</td>
<td>45-day Comment Period</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planning for Specific Sale</td>
<td>45-day Comment Period</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Pre-Lease</td>
<td>45-day Comment Period</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exploration Plan Approval</td>
<td>45-day Comment Period</td>
<td>90-day CZM Review Approved</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-Lease</td>
<td>90-day Comment Period</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Development and Production Plan Approval</td>
<td>90-day Comment Period</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Abbreviations:
APD: Application for Permit to Drill
CZM: Coastal Zone Management
CD: Consistency Determination
EIS: Environmental Impact Statement

The process for companies and other stakeholders to comment on proposed sales, and to lease, explore, and develop the outer Continental Shelf, is clearly defined in the Outer Continental Shelf Lands Act. Although the process involves many steps, its comprehensiveness and transparency not only set out clear comment periods for coastal states and other interested stakeholders, but also provide companies greater predictability about the procedures they must follow to receive approval for their exploration and production work.

* Includes 60-day comment period and 15-day automatic extension. Unless state concurs, no decision can be made until 90 days after beginning of state review.

Source: Minerals Management Service, Washington, DC.

After an initial bumpy start in the implementation of major amendments to its basic law, the problems encountered by the offshore oil and gas program today are generally external to its day-to-day administration and regulatory requirements. Although a number of different variables have to be taken into consideration in crafting a regime for other ocean uses, the scope and comprehensiveness of the OCS oil and gas program can be a model for the management of a wide variety of offshore activities.
Trends in Domestic Offshore Oil and Gas Production

Currently, energy development in federal waters accounts for more than 30 percent of domestic oil production and 25 percent of natural gas. Further, of the oil and natural gas still to be discovered in the United States, energy experts estimate that some 60 percent will come from offshore areas.3

More than 95 percent of U.S. offshore oil and gas production takes place in the western and central Gulf of Mexico, where there is an established infrastructure and general public acceptability. There is still some offshore production in Southern California and limited leasing and exploration in federal waters off Alaska. The first oil production from a joint federal-state unit in the Beaufort Sea (Alaska) commenced in 2001.

The importance of offshore oil and natural gas to the nation's total energy portfolio is expected to increase. The U.S. Energy Information Administration projects the United States will need about 35–40 percent more natural gas and about 45 percent more oil by 2025 to meet demand, even as new energy conservation measures are mandated and efforts to develop alternative power sources continue.4 Government and industry experts are concerned that rising demand for and limited supplies of natural gas will continue to boost heating and electricity costs, affecting homeowners and a range of major industries. Nearly all U.S. electric-generating plants built since 1998 are fueled by natural gas (Box 24.1).

Rise in Deep-water Oil Production

Although production in the Gulf of Mexico's heavily leased shallow waters has been steadily declining, production in its deeper waters (more than 1,000 feet), which tend to produce more oil than natural gas, increased by over 500 percent between 1995 and 2002.5 In part, this growth was attributable to technological breakthroughs, the relative stabilization of crude oil prices, and the enactment of legislation in 1995 granting various levels of royalty relief to lessees willing to make the risky investment in the Gulf's deeper waters. Deep-water oil production now accounts for more than half of the Gulf's total production.6 Additionally, the technology for ultra-deep-water development continues to advance with the drilling of a number of exploratory and production wells in water depths greater than 7,000 feet. Recently, a world record exploratory well was drilled in 10,000 feet of water.

A Promising Future for Natural Gas from Shallow Water

MMS estimates there is up to 55 trillion cubic feet (tcf) of natural gas available for production in the deeper stratigraphic horizons on the continental shelf of the Gulf (15,000 feet below the seabed but in shallow-water depths of less than 696 feet). This estimate is 175 percent greater than the previous projection of 20 tcf just a few years ago. This is a hopeful sign of additional sources of natural gas to meet a portion of the nation's future needs. Natural gas production from the deeper horizons on the continental shelf of the Gulf increased from a relatively low 284 billion cubic feet (bcf) in 2000 to 421 bcf in 2002. This 2-year, 50 percent increase follows immediately after a 3-year, 21 percent decrease between 1997 and 2000.7 To bolster industry interest in this high-cost deep drilling area, in 2001, MMS instituted a program of deep shelf royalty relief for natural gas production. This economic incentive, combined with more sophisticated cost-effective technology, improved seismic data, better understanding of the potential from the deep shelf, and increased public demand, is likely to provide the impetus for even further accelerated natural gas production from the OCS.

Federal Revenues from Offshore Oil and Gas Leasing and Production

The federal government receives a substantial amount of revenue from energy companies for offshore oil and gas leasing and production. OCS lessees make three categories of pay-
Box 24.1 Offshore Liquefied Natural Gas Ports May Be on the Horizon

The U.S. Department of Energy's Energy Information Administration and private industry trade associations predict that the nation's demand for natural gas will continue to rise. Notwithstanding estimates of increased natural gas production from the Gulf of Mexico (discussed earlier in this chapter), the United States is no longer self-sufficient in that energy resource. A primary way to meet rising demand is through substantially increased imports of liquefied natural gas (LNG). In 2003, LNG supplied only about 2 percent of U.S. natural gas needs; by 2010, it is expected to provide some 10 percent of such needs.

LNG is transported in large, specialized tanker ships that keep the gas cooled to approximately 260°F below zero to reduce the volume for shipping purposes. LNG tankers deliver the gas to special port facilities, where the commodity is re-gasified, either on the ship or at the port facility, and then transported through pipelines to customers.

The United States currently has four LNG import terminals in coastal port areas in Massachusetts, Maryland, Georgia, and Louisiana. Over three dozen new terminals intended to serve the U.S. market (including eight projects proposed for Eastern Canada, the Bahamas, and Baja California, Mexico) are in varying stages of planning. For many complex reasons, it is possible that only a few of the projected projects will be built. However, of the proposed new LNG projects, a number are likely to be located offshore, on the outer Continental Shelf.

Congress has responded to the need for a broad and cohesive ocean governance structure for offshore LNG ports. The federal Deepwater Port Act (DPA) was amended in 2002 to authorize the siting, construction, and operation of LNG terminals on the OCS, seaward of state boundaries. The U.S. Coast Guard and the Maritime Administration are the primary agencies responsible for the licensing process under the DPA. When it was moved to the U.S. Department of Homeland Security, the Coast Guard's authority under the DPA was transferred with it under the terms of an interagency memorandum of understanding (MOU). The MOU also included a number of other agencies that have regulatory authority over some aspect of DPA licensing, or other aspects of LNG transportation and use on the OCS or onshore. These agencies include the U.S. Departments of the Interior, Transportation, and Commerce, the Federal Energy Regulatory Commission, and the U.S. Environmental Protection Agency.

One of the interesting provisions of the DPA, which is applicable to the siting and operation of offshore LNG ports, stipulates that that the Secretary of Transportation may not issue a license without the approval of the Governor of each coastal state adjacent to the proposed facility. This gubernatorial approval process is in addition to the federal consistency authority exercised by states with approved coastal zone management programs.

Although the recent amendments to the DPA establish an ocean governance structure for LNG facilities, with designated agency mandates and responsibilities, the siting of new LNG facilities and management of LNG tanker traffic should be fully integrated with the coordinated offshore management regime discussed in Chapter 6.

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Table 24.1 Federal Revenues from Offshore Mineral Development

Significant funds are paid into the U.S. Treasury each year from outer Continental Shelf (OCS) bonuses, royalties, and rents. This money is used in part to help support federal conservation programs. A small amount generated from nearshore development is shared with OCS producing states.

<table>
<thead>
<tr>
<th>Year</th>
<th>Bonuses</th>
<th>Royalties</th>
<th>Other Receiving</th>
<th>Total</th>
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<tr>
<td>1997</td>
<td>$3,444,561,989</td>
<td>$1,814,666,046</td>
<td>$5,259,228,035</td>
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<td>1998</td>
<td>$2,703,722,873</td>
<td>$1,618,914,459</td>
<td>$4,322,637,332</td>
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<tr>
<td>1999</td>
<td>$2,611,742,229</td>
<td>$576,646,226</td>
<td>$3,188,388,455</td>
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<tr>
<td>2000</td>
<td>$4,094,576,078</td>
<td>$1,115,086,564</td>
<td>$5,209,662,642</td>
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<tr>
<td>2001</td>
<td>$5,448,825,260</td>
<td>$1,056,762,550</td>
<td>$6,505,580,810</td>
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<tr>
<td>Total</td>
<td>$18,303,428,429</td>
<td>$6,182,075,845</td>
<td>$24,485,504,274</td>
<td></td>
</tr>
</tbody>
</table>


ments: bonus bids when a lease is issued; rental payments before a lease produces; and royalties on any production from the lease. In the half century of the oil and gas program's existence, between 1953 and 2002, it has contributed approximately $145 billion in federal revenues. In recent years, the revenues generated from offshore energy activity have averaged $4--$5 billion annually (Table 24.1). Although most of the revenues have been deposited directly into the U.S. Treasury, a significant portion has gone to the Land and Water Conservation Fund and the National Historic Preservation Fund.

A Question of Equity: Sharing OCS Receipts with Coastal States

Mineral resources on federal land, whether onshore or offshore, benefit the nation as a whole. The primary law governing onshore mineral development is the Mineral Leasing Act (MLA), and the comparable law for offshore minerals is the OCSLA. These two statutes are analogous in many ways except for one—the sharing of revenues with states. Under the MLA, each of the lower 48 states directly receives 50 percent of all mineral leasing revenues from public lands within its boundaries, and an additional 40 percent through the Reclamation Fund; the state of Alaska receives 90 percent directly. There is a broad array of additional federal land receipts sharing programs, including the National Forest Receipts Program and the Taylor Grazing Act. Eligible uses of the shared receipts vary widely. Some programs require that the funds be used by the recipient jurisdiction for specific purposes such as schools, roads, or land and resource improvements, while others allow the states more discretion.

Furthermore, once leased under the MLA or some other land management statute, onshore federal lands are generally subject to most state and local taxes. Most noteworthy is the ability of states to levy severance taxes on minerals developed on federal lands within their borders. Additionally, if local governments lose property tax revenue because of the existence of federal lands, there are a variety of programs that provide localities with federal payments in lieu of taxes.

In contrast, the OCSLA specifically prohibits state taxes on OCS activities. Moreover, there is no offshore revenue sharing program comparable to the MLA for coastal states. Proponents of such an initiative argue that although the energy development occurs in federal waters, many of the impacts resulting from such activities occur locally, in and near the states' coastal zones. They contend that affected states and communities should receive assistance in coping with the costs of facilitating offshore development, including actions to minimize the risk of environmental damage. The executive branch has traditionally opposed revenue sharing, largely because of the potential loss to the federal treasury.

CHAPTER 24: MANAGING OFFSHORE ENERGY AND OTHER MINERAL RESOURCES
For decades, Congress has debated proposals on OCS revenue sharing—including the Coastal Energy Impact Program in the mid-1970s—to help states address the effects of offshore production and remedy the apparent inconsistency with onshore mineral development. Disputes over the fair division of revenues from resources discovered in fields that straddle state and federal submerged lands were resolved in 1986. In that year, Congress amended the OCSLA to require that 27 percent of revenues from federal leasing and production activity within three nautical miles seaward of the federal-state offshore boundary be given to the affected state. Through the release of money that was being held in escrow, the awarding of past payments owed to the states, and subsequent entitlement to 27 percent of current and future revenues from the three-mile area, the seven OCS "producing" states have received slightly more than $3 billion since 1986. Currently, these states receive approximately $50–60 million annually through this mechanism. In fiscal year 2001, Congress authorized and appropriated $142 million for a Coastal Impact Assistance Program to be allocated among the producing states by the National Oceanic and Atmospheric Administration (NOAA). However, this was a one-year authorization, and no further funding has been provided.

**The Federal-State Partnership for Oceans and Coasts**

In various parts of this report, recommendations are made not only to strengthen the coordination of ocean policy at the federal level, but also to increase the involvement of nonfederal governmental and nongovernmental stakeholders. The time has come to significantly enhance the ocean and coastal partnership between the federal government and state, territorial, tribal, and local governments. This partnership recognizes that much of the responsibility for managing the nation's ocean and coastal resources rests with nonfederal authorities. These concepts are at the heart of the CZMA and permeate many other natural resource management programs.

As the federal-state ocean and coastal partnership began to evolve, the nation determined that activities associated with development of nonrenewable resources should not be pursued at the expense of the long-term health of renewable resources. That is why the OCSLA, the CZMA, and other applicable federal statutes call for balanced management of offshore oil and gas, protection of the ocean and coastal environment, and involvement by state and local governments. Eventually, new oil and gas will no longer be found or developed in the nation's submerged lands but, if the proper policies are pursued, the renewable resources of our estuaries, coasts, oceans, and the Great Lakes—and the economic activities that depend upon them—will remain healthy and strong.

To make certain that the federal-state partnership remains strong and that critical marine ecosystems are protected, more of the resource rents generated from OCS energy leasing and production should be invested in the sustainability of ocean and coastal resources.

**Recommendation 24-1**

Congress should use a portion of the revenues the federal government receives from the leasing and extraction of outer Continental Shelf (OCS) oil and gas to provide grants to all coastal states that can be invested in the conservation and sustainable development of renewable ocean and coastal resources. States off whose coasts OCS oil and gas is produced should receive a larger share of such revenue to compensate them for the costs of addressing the environmental and socioeconomic impacts of energy activity in adjacent federal waters. None of the programs that currently receive revenues from OCS oil and gas activities should be adversely affected by this new allocation.

Chapter 30, *Funding Needs and Possible Sources*, includes a more extensive discussion about offshore revenue sharing and its connection to improved ocean and coastal management.
State Involvement in OCS Oil and Gas Decision Making

The partnership between the federal and state governments with respect to activities in federal waters should involve more than the sharing of some revenues. The central role of states in the new ocean policy framework is addressed in practically every chapter of this report. For example, Chapter 6 specifically calls for a more robust federal-regional-state dialogue in the building of coordinated offshore management regime. Chapter 9 addresses the link between coastal and offshore management, including the role of the federal consistency provision of the CZMA, despite some disagreements between levels of government, in enhancing cooperative federalism.

With respect to offshore oil and gas, the 1978 amendments to the OCSLA were intended, among many purposes, to bring state and local governments into much clearer and statutorily specified consultative roles at various points in DOI’s decision-making process. Further, the amendments made clear that the federal consistency provision of the CZMA applied to exploration, development, and production plans submitted to the Secretary of the Interior under the OCSLA. (Box 24.2 provides additional information on the federal consistency provision.)

Environmental Issues Related to Offshore Oil and Gas Production

As with most industrial development activities, along with the economic- and energy-related benefits of OCS oil and gas production, are actual and perceived risks to the environment, coastal communities, and competing users. Since the 1969 Santa Barbara blowout, the U.S. oil industry’s environmental and safety record has improved significantly, as has the regulatory regime of DOI. Today, safety stipulations are more stringent, technologies are vastly improved, inspections are regular and frequent, and oil spill response capabilities are in place. Nevertheless, there remain numerous environmental issues associated with the development and production of oil and gas from the OCS.

Foremost among these are:

- Physical damage to coastal wetlands and other fragile areas by OCS-related onshore infrastructure and pipelines.
- Physical disruption of and damage to bottom-dwelling marine communities.
- Discharge of contaminants and toxic pollutants present in drilling muds and cuttings and in produced waters.
- Emissions of pollutants from fixed facilities, vessels, and helicopters.
- Seismic exploration and production noise impacts on marine mammals, fish, and other wildlife.
- Immediate and long-term ecological effects of large oil spills.
- Chronic, low-level impacts on natural and human environments.
- Cumulative impacts on the marine, coastal, and human environments.

The most obvious of these risks, and the one most commonly cited, is the potential for oil spills including drill rig blowouts, pipeline spills, and chronic releases from production platforms. The impacts of large oil spills can last from years to decades, particularly in critical habitats, such as wetlands and coral reefs.

According to MMS, 97 percent of OCS spills are one barrel or less in volume and U.S. OCS offshore facilities and pipelines accounted for only 2 percent of the volume of oil released into U.S. waters for the period 1985–2001 (Figure 24.3).9 The total volume and number of such spills over that period declined significantly due to industry safety practices and improved spill prevention technology. By comparison, the National Research Council (NRC) estimated that 690,000 barrels of oil enter North American ocean waters each year from land-based human activities, and another 1,118,000 barrels result from natural seeps emanating from the seafloor.10

John Wesley Powell, the Civil War veteran and explorer who led the first expedition down the Colorado river, had the fundamental insight that natural resources do not respect political boundaries. [His] insight fully applies to the resources of the Outer Continental Shelf—whether they be commercial fisheries, oil and gas, or endangered species. Everything that happens on the federal OCS affects state waters and the land and people of the adjoining states.

Box 24.2 The Federal Consistency Provision and Offshore Oil and Gas Development

The application of the federal consistency provision of the Coastal Zone Management Act (CZMA) to offshore energy development has been one of the most contentious issues among the federal government, coastal state governments, and outer Continental Shelf (OCS) lessees. In the mid-1970s, Congress amended the original version of the federal consistency provision to add a section that explicitly covered certain OCS activities. Of the thousands of exploration and development plans submitted by oil and gas companies over the years and approved by the U.S. Department of the Interior (DOI), states have concurred with the consistency of such plans with their state coastal management program in virtually all of the cases. But there have been some instances in which states have objected and these are generally cases of high visibility. There have been fourteen OCS oil and gas appeal decisions issued by the Secretary of Commerce, half of which overrode the state's objection and half of which did not.

In a case that reached the highest court in the land in 1984, the U.S. Supreme Court held that OCS lease sales were not subject to the consistency provision of the CZMA. In 1990, Congress enacted a law, which reversed the effect of the decision, clarified that such sales are subject to a state consistency review, and made a number of other changes to the interpretation of the federal consistency provision that resulted in a lengthy rule-making process by the National Oceanic and Atmospheric Administration (NOAA). The final rule was published in 2000.

In 2001, the Vice President submitted the National Energy Policy report of the National Energy Policy Development Group to the President. The report contained a section on the Outer Continental Shelf Lands Act (OCSLA), as administered by DOI's Minerals Management Service, and the CZMA, as carried out by NOAA. It noted that the effectiveness of these programs is "sometimes lost through a lack of clearly defined requirements and information needs from federal and state entities, as well as uncertain deadlines during the process." The report recommended that the Secretaries of Commerce and the Interior reexamine the legal and policy regimes to see if changes were needed regarding energy activities in the coastal zone and the OCS.

In 2003, after a series of negotiations between the two departments, the Department of Commerce published a proposed rule addressing the information needs of states, coordination of timing requirements between the OCSLA and the CZMA, definitive time limits on the Secretary of Commerce's appeals process, and additional procedural matters. (For a more detailed discussion of the OCS-specific federal consistency provisions of the CZMA and the issues related to their implementation, including a history of related litigation, see Appendix 6.)

Since 1981, the volume of oil spilled from OCS pipelines is four to five times greater than that from OCS platforms (Figure 24.4). Third party impacts due to events such as anchor dragging and ship groundings, and damages resulting from natural disasters such as hurricanes and underwater landslides, are leading causes of pipeline spills. As noted by the NRC, spills due to structural failures in aging pipelines are also a growing concern. Long-term exposure to weather and marine conditions makes pipelines older than twenty-five years considerably more susceptible to stress fractures and material fatigue that can lead to spills and leaks. In addition, older pipelines do not incorporate the advanced oil spill detection and prevention technologies that have been developed in recent years.

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The MMS Environmental Studies Program (ESP) is a major source of information about the impacts of OCS oil and gas activities on the human, marine, and coastal environments. Since 1986, annual funding for the program has decreased, in real dollars, from a high of $56 million to approximately $18 million in 2003. Even accounting for the contraction in the areas available for leasing, the erosion in ESP funding has occurred at a time when more and better information, not less, is needed. There continues to be a need to better understand the cumulative and long-term impacts of OCS oil and gas development, especially in the area of low levels of persistent organic and inorganic chemicals, and their cumulative or synergistic effects.

Also, as noted, OCS oil and gas exploratory activities in the Gulf of Mexico are now occurring in water depths approaching 10,000 feet with projections that the industry will achieve 15,000 feet drilling capabilities within the next decade. The technological ability to conduct oil and gas activities in ever deeper waters on the OCS places a significant and important responsibility on MMS to collect the essential environmental deep-water data necessary for it and other agencies to make informed management and policy decisions on exploration and production activities at those depths. Thus, as the knowledge base increases and the industry expands its activities further offshore and into deeper waters, new environmental issues are emerging that cannot all be adequately addressed under the current ESP budget.
Recommendation 24–2

The U.S. Department of the Interior should expand the Minerals Management Service's Environmental Studies Program.

Priorities for the enhanced Environmental Studies Program should include:
- conducting long-term environmental research and monitoring at appropriate outer Continental Shelf (OCS) sites to better understand cumulative, low-level, and chronic impacts of OCS oil and gas activities on the natural and human environments.
- working with state environmental agencies and industry to evaluate the risks to the marine environment posed by aging offshore and onshore pipelines, particularly in the Gulf of Mexico.

Opportunities for Sharing Ocean Observation Information and Resources

Floating drilling rigs and production platforms are able to maintain position over the tops of wells thousands of feet below the surface without the need for mooring or permanent structures. Dynamic positioning systems compensate for wind, waves, and currents to keep the vessel stationary relative to the seabed, and new hull designs maintain stability. Three- and four-dimensional subsurface images allow operators to obtain a better idea of how a reservoir behaves and increase the likelihood of drilling success. And, the use of horizontal and directional drilling creates more flexibility in deciding where to site offshore platforms.

The movement of oil and natural gas exploration, development, and production activities further offshore into deeper waters and harsher marine environments, such as the Arctic, affords an excellent opportunity for incorporating the industry's offshore infrastructure into the national Integrated Ocean Observing System (IOOS). In addition to its offshore infrastructure, the industry has the technological capacity to collect, assimilate, and analyze environmental data of use in both IOOS forecasts and more general ocean and environmental models and data products (which are discussed in more detail in Chapter 28). The U.S. offshore industry has a history of partnering with ocean scientists, allowing them to use production platforms for mounting environmental sensors, and in some cases, collecting and providing them with environmental data and information. The industry would also benefit from participation in the IOOS as a user of the system's data and information products and by being involved in its design, implementation, and future enhancement.

Recommendation 24–3

Ocean.US, working with the National Oceanic and Atmospheric Administration (NOAA) and Minerals Management Service (MMS), should include the offshore oil and gas industry as an integral partner in the design, implementation, and operation of the Integrated Ocean Observing System (IOOS), especially in areas where offshore oil and gas activities occur. Specifically, Ocean.US, NOAA, and MMS should work with the oil and gas industry to:
- employ industry resources, such as pipelines, platforms, and vessels as part of the IOOS.
- incorporate nonproprietary data into IOOS informational products and larger environmental databases, while protecting the security of proprietary data and meeting other safety, environmental, and economic concerns.

Assessing the Potential of Offshore Methane Hydrates

Conventional oil and gas are not the only fossil-based fuel sources located beneath ocean floors. Methane hydrates are solid, ice-like structures composed of water and natural gas. They occur naturally in areas of the world where methane and water can combine at appropriate conditions of temperature and pressure, such as in thick sediment of deep-ocean basins, at water depths greater than 1,650 feet.
The estimated amount of natural gas in the gas hydrate accumulations of the world greatly exceeds the volume of all known conventional gas resources. A 1995 U.S. Geological Survey (USGS) estimate of both marine and Arctic hydrate resources revealed the immense energy potential of hydrates in the United States. These deposits have been identified in Alaska, the east and west coasts of the United States, and in the Gulf of Mexico. USGS estimated that the methane hydrates in U.S. waters hold a mean value of 320,000 trillion cubic feet of natural gas, although subsequent refinements of the data have suggested that the estimate is a slightly more conservative 200,000 trillion cubic feet. Even this lower estimate is enough to supply all of the nation's energy needs for more than 2,000 years at current rates of use.

However, there is still no known practical and safe way to develop the gas and it is clear that much more information is needed to determine whether significant technical obstacles can be overcome to enable methane hydrates to become a commercially viable and environmentally acceptable source of energy.

In the United States, federal research concerning methane hydrates has been underway since 1982, was intensified in 1997–98, and received further emphasis with the passage of the Methane Hydrate Research and Development Act in 2000. That Act established an interagency coordination mechanism that includes the U.S. Departments of Energy, Commerce, Defense, and the Interior, and the National Science Foundation, and directed the National Research Council to conduct a study on the status of research and development work on methane hydrates. This study is scheduled for release in September 2004.

**Recommendation 24-4**

The National Ocean Council (NOC), working with the U.S. Department of Energy and other appropriate entities, should review the status of gas hydrates research and development to determine whether methane hydrates can contribute significantly to meeting the nation’s long-term energy needs. If such contribution looks promising, the NOC should recommend an appropriate level of investment in methane hydrates research and development, and determine whether a comprehensive management regime for industry access to hydrate resource deposits is needed.

**Developing Offshore Renewable Energy Resources**

Environmental, economic, and security concerns have heightened interest among many policy makers and the public in renewable sources of energy. Although offshore areas currently contribute little to the nation’s supply of renewable energy, the potential is significant and could include wind turbines, mechanical devices driven by waves, tides, or currents, and ocean thermal energy conversion, which uses the temperature difference between warm surface and cold, deep-ocean waters to generate electricity.

**Offshore Wind Energy Development**

While the offshore wind power industry is still in its infancy in the United States, it is being stimulated by improved technology and federal tax credits that have made it more attractive commercially. Additionally, developers are looking increasingly to the lead of European countries such as Denmark, the United Kingdom, and Germany, where growing numbers of offshore projects are being licensed.

In fact, the United States already has a wind energy management program applicable on some federal lands onshore. This comprehensive program is carried out by DOI's Bureau of Land Management under broad authority provided by the Federal Land Policy and Management Act.
Conversely, there is no comprehensive and coordinated federal regime in place to regulate offshore wind energy development or to convey property rights to use the public space of the OCS for this purpose. In the absence of a specific regime, the U.S. Army Corps of Engineers (USACE) is the lead federal agency responsible for reviewing and granting a permit for this activity. Its authority, however, is based on Section 10 of the Rivers and Harbors Act, which, although it has a public interest requirement, primarily regulates obstructions to navigation, including approval of any device attached to the seafloor.

In reviewing a proposed project under Section 10, the USACE is required by the National Environmental Policy Act to consult other federal agencies. Depending on the circumstances, these agencies and authorities may include:

- The U.S. Coast Guard, which regulates navigation under several federal statutes.
- The Federal Aviation Administration, which regulates objects that may affect navigable airspace pursuant to the Federal Aviation Act.
- The U.S. Environmental Protection Agency, which may conduct a review for potential environmental impacts of a project pursuant to the Clean Water Act and Clean Air Act.
- The National Marine Fisheries Service (NMFS), which may review projects for potential impacts on fishery resources pursuant to the Magnuson-Stevens Fishery Conservation and Management Act. In addition, NMFS’ review includes assessing potential impacts to endangered or threatened species under the Endangered Species Act or the Marine Mammal Protection Act.
- The U.S. Fish and Wildlife Service, which may review projects for potential impacts to endangered species or marine mammals under its jurisdiction pursuant to the Endangered Species Act or the Marine Mammal Protection Act.
- In addition, depending on its location, a wind energy project, or at least its Section 10 permit, may be subject to review by one or more state coastal management programs in accordance with the CZMA federal consistency provisions.

The Section 10 review process stands in stark contrast both to the well established DOI regulatory program for onshore wind energy and, in the marine setting, to the robust regulatory program for offshore oil and gas that has developed under the OCSLA. Using the Section 10 process as the primary regulatory vehicle for offshore wind energy development is inadequate for a number of reasons. First and foremost, it cannot grant leases or exclusive rights to use and occupy space on the OCS. It is not based on a comprehensive and coordinated planning process for determining when, where, and how this activity should take place. It also lacks the ability to assess a reasonable resource rent for the public space occupied or a fee or royalty for the energy generated. In other words, it lacks the management comprehensiveness that is needed to take into account a broad range of issues, including other ocean uses in the proposed area and the consideration of a coherent policy and process to guide offshore energy development.

**Wave Energy Conversion—Current and Tidal**

Various technologies have been proposed to use wave or tidal energy, usually to produce electricity. The wave energy technologies for offshore use include floating or pitching devices placed on the surface of the water that convert the horizontal or vertical movement of the wave into mechanical energy that is used to drive a turbine. Currently, the offshore wave, tidal, and current energy industry is in its infancy. Only a small proportion of the technologies have been tested and evaluated. Nonetheless, some projects are moving forward in the United States, including one to install electricity-producing wave-energy buoys more than 3 nautical miles offshore Washington State, in the Olympic Coast National Marine Sanctuary. Internationally, there is considerable interest in wave, tidal, and current energy, but the projects are almost all in the research and development stage.
**Box 24.3 A Mighty Wind Blows in Cape Cod**

Although offshore wind energy facilities are well-established in other areas of the world, the first proposal for such a facility in the United States is testing the ability of the federal system to manage emerging offshore industries. The proposal calls for use of approximately 23 square miles in the Nantucket Sound, some 5.5 nautical miles off the coast of Cape Cod, Massachusetts. It would consist of 130 wind turbines, each of which would be sunk into the ocean floor and reach up to 420 feet above the ocean surface. The project would generate an annual average of approximately 160 megawatts of electrical power.

This project has divided local citizens, elected officials, environmentalists, business interests, and other stakeholders. Supporters cite the project’s potential to reduce pollution, greenhouse gases, and reliance on foreign oil, while opponents warn of bird deaths, harm to tourism, interference with commercial and sports fishing, and obstructed views.

Despite the controversy, the project is proceeding through the review process contained in Section 10 of the Rivers and Harbors Act. In the meantime, proposals for offshore wind development projects up and down the East Coast are proliferating.

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The Federal Energy Regulatory Commission (FERC) asserts jurisdiction, under the Federal Power Act (FPA), over private, municipal, and state (not federal) hydropower projects seaward to 12 nautical miles. FERC has formally asserted jurisdiction over the Washington State project, and is likely to assert jurisdiction over all forms of wave, tidal, or current energy projects whose output is electricity, from the shoreline out to 12 nautical miles offshore, on the basis that they are “hydropower” projects under the FPA.

Although in issuing a license for a wave, current, or tidal project, FERC is directed by the FPA to equally consider environmental and energy concerns, it is not an agency with a broad ocean management mission. As with wind energy, several other federal laws may apply to ocean wave projects. For example, NEPA, the federal consistency provision of the CZMA, the National Historic Preservation Act, and the Fish and Wildlife Coordination Act may apply, as may the consultation provisions of the Endangered Species Act and the Marine Mammal Protection Act. But there is no comprehensive law that makes clear which of these individual laws may be applicable, nor is there any indication that overall coordination is a goal, thus leaving implementation to mixed federal authorities.

**Ocean Thermal Energy Conversion**

The surface waters of the world’s tropical oceans store immense quantities of solar energy. Ocean thermal energy conversion (OTEC) technology could provide an economically efficient way to tap this resource to produce electric power and other products. The U.S. government spent over $200 million dollars in OTEC research and development from the
1970s to the early 1990s that produced useful technical information but did not result in a commercially viable technology.\textsuperscript{18}

Early optimism about the potential of OTEC led to the enactment of the Ocean Thermal Energy Conversion Act in 1980, and the creation of a coordinated framework and licensing regime for managing that activity if and when economic considerations permitted. NOAA issued regulations to implement the Act, but because of investor risk for this capital-intensive technology and relatively low fossil fuel prices, no license applications were ever received and NOAA subsequently rescinded the regulations in 1996. Thus, the United States currently has no administrative regulatory structure to license commercial OTEC operations.

**Comprehensive Management for Offshore Renewable Energy**

Offshore renewable technologies will continue to be studied as a means of reducing U.S. reliance on potentially unstable supplies of foreign oil, diversifying the nation's energy mix, and providing more environmentally benign sources of energy. Similar to offshore aquaculture described in Chapter 22, the offshore renewable processes described in this section present obvious examples of the shortcomings in federal authority when it comes to regulating specific new and emerging offshore activities. As long as federal agencies are forced to bootstrap their authorities to address these activities, the nation runs the risk of unresolved conflicts, unnecessary delays, and uncertain procedures. What is urgently needed is for the National Ocean Council to develop a comprehensive offshore management regime (as recommended in Chapter 6) that considers all offshore uses within a larger planning context. A coherent and predictable federal management process for offshore renewable resources that weighs the benefits to the nation's energy future against the potential adverse effects on other ocean users, marine life, and the ocean's natural processes, should be fully integrated into the broader management regime.

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**Recommendation 24-5**

Congress, with input from the National Ocean Council, should enact legislation providing for the comprehensive management of offshore renewable energy development as part of a coordinated offshore management regime. Specifically, this legislation should:

- be based on the premise that the oceans are a public resource.
- streamline the process for licensing, leasing, and permitting renewable energy facilities in U.S. waters.
- subsume existing statutes, such as the Ocean Thermal Energy Conversion Act.
- ensure that the public receives a fair return from the use of the resource and that development rights are allocated through an open, transparent process that considers state, local, and public concerns.

**Managing Other Marine Minerals**

The ocean floor within the U.S. EEZ contains vast quantities of valuable minerals other than oil and gas, but the economics of recovering them, especially in areas far offshore, are not welcoming. These resources include more than 2 trillion cubic meters of sand and gravel reserves on the Atlantic shelf of the OCS alone, enormous phosphate deposits off the East Coast from North Carolina to northern Florida, titanium-rich heavy mineral sands from New Jersey to Florida, manganese nodules from South Carolina to Georgia, high-grade calcium carbonate sands off Florida, gold and platinum deposits off Alaska, polymetallic sulfides off Oregon, barite resources off southern California, and quantities of cobalt and platinum off Hawaii. It is likely that substantial amounts of other valuable minerals will be identified in the future as exploration proceeds. Access to these minerals for
commercial recovery, including offshore sand and gravel for use as construction aggregate, is through the competitive leasing process of the OCSLA.

In 1994, Congress authorized coastal communities to use sand and gravel from the OCS for public works projects without going through the statute’s bidding process. Since then, MMS has used this authority to allow federal, state, and local agencies to mine OCS sand to protect shorelines, nourish beaches, and restore wetlands. Between 1995 and 2004, MMS provided over 20 million cubic yards of OCS sand for 14 coastal projects. Louisiana alone is expected to seek millions of cubic yards of OCS sand for various barrier island restoration projects and levee systems.

The depletion of OCS sand in state waters after decades of excavation, and growing environmental opposition to the activity in areas close to shore, are exacerbated by the acceleration of erosion, ever-expanding coastal populations, and on the increasing vulnerability of fragile beaches, exposed beachfront property, and coastal-dependent industries to coastal storms. With the need for sand increasing and its availability in state waters decreasing, the OCS provides the obvious remedy. It is not, however, a remedy without associated problems.

MMS has numerous environmental studies underway or planned to evaluate the effects of OCS dredging on the marine and coastal environment and to identify ways to eliminate or mitigate harmful impacts. There remains, nevertheless, significant uncertainty about the long-term, cumulative impacts of sand and gravel mining on ocean systems and marine life. Changes in bathymetry can affect waves and currents in a manner that could increase shoreline erosion. Alterations to the ocean bottom can affect repopulation of the benthic community, cause increased turbidity, damage submerged resources such as historic shipwrecks, and kill marine organisms, including fish. For economic reasons, the demand for sand and gravel leases will most likely concentrate on OCS areas that are relatively close to shore. Some environmentalists and fishing representatives have opposed mining in state waters and may well oppose similar projects in adjacent federal waters.

A vital component of a national strategy to manage mineral resources located on the OCS is the need for an overall assessment of: the nation’s OCS mineral endowment (sand and gravel, as well as other strategic minerals vital to the long-term security of the nation); the need for those resources (highest and best uses); the long-term environmental impacts associated with use of those resources; and the multiple-use implications of other uses of the OCS (including wind farms, cables, and pipelines). While resource managers have identified large volumes of sand off the nation’s shores, the ultimate volumes that may be recovered remain unknown. Sand and gravel resources from the OCS are key to protecting the nation’s shores and wetlands and to supplementing ever-diminishing onshore supplies of aggregate to support construction activities.

Recommendation 24–6

The Minerals Management Service should systematically identify the nation’s offshore non-energy mineral resources and conduct the necessary cost-benefit, long-term security, and environmental studies to create a national program that ensures the best uses of those resources.

References


6 Ibid.


CHAPTER 7

STRENGTHENING THE FEDERAL AGENCY STRUCTURE

Although improved coordination is a vital aspect of the new National Ocean Policy Framework, changes to the structure of some federal agencies will also be needed to enable effective implementation of national ocean policy.

Strengthening the federal agency structure through a phased approach—in combination with improving coordination through the National Ocean Council—will improve agency performance, reduce unnecessary overlap, and significantly enhance the long-term goal of addressing the nation's management of oceans, coasts, and other natural resources through an ecosystem-based management approach.

Immediate strengthening of the National Oceanic and Atmospheric Administration's ability to carry out its many ocean- and coastal-related responsibilities is critical. That is to be followed by strengthening of other agencies with ocean-related responsibilities, and consolidation, where appropriate, of ocean and coastal programs in all agencies. Over the long term, more fundamental changes to the federal agency structure should be made to recognize the inextricable connections among the sea, the land, the atmosphere, and all living creatures on Earth, including humans.

Reorganizing to Support an Ecosystem-based Management Approach

New knowledge about the functioning of ecosystems—and specifically about our ocean and coastal regions—supports the need for fundamental changes in the nation's approach to managing its resources. The benefits of improved coordination at national and regional levels were discussed in Chapters 4 through 6, and a number of recommendations made. But even excellent coordination does not preclude the need to consider reorganization. The new National Ocean Policy Framework contemplates both. The proliferation of federal agencies with some responsibility for ocean and coastal activities (illustrated in Figure 4.1) strongly suggests that consolidation might improve government performance, reduce unnecessary overlaps, facilitate local, state, and regional interactions with the federal government, and begin to move the nation toward a more ecosystem-based management approach.
Reviewing Previous Reorganization Proposals

In 1969, the Stratton Commission called for the establishment of a major new independent agency to administer the nation's civil marine and atmospheric programs. Around the same time, the President's Advisory Council on Executive Reorganization (known as the Ash Council) made recommendations for more effective management of all federal programs and agencies.

Based on the advice from these two groups, the Nixon administration planned to create an ocean and atmospheric agency and place it in a new Department of Natural Resources, in which the U.S. Department of the Interior (DOI) and several other agencies were identified as key elements. However, in 1970 the administration decided, largely for political reasons, to establish the National Oceanic and Atmospheric Administration (NOAA) as an agency within the U.S. Department of Commerce.

Since that time, members of Congress have introduced many reorganization proposals to improve federal management generally or specifically as it affects oceans and coasts. Two presidential proposals addressed broad reorganization around natural resources, while a national advisory committee on oceans and coasts proposed specific recommendations to improve the federal agency structure in that area. Proposals in the 1970s called for putting NOAA within a broader Department of Natural Resources, while a mix of proposals during the 1980s and 1990s would have either established an independent NOAA or moved parts of the agency to a different department. In the end, largely because of the political complexity associated with any reorganization of executive branch agencies, none of the proposals to reorganize or relocate NOAA was adopted. (Brief summaries of past proposals are included in Table 7.1 at the end of this chapter and summarized in Figure 7.1.)

Despite past failures to reorganize ocean and coastal programs, the concept of combining federal programs with similar functions remains under active consideration. In its 2003 report, the National Commission on the Public Service (known as the Volcker Commission) concluded that the historical phenomenon of governmental expansion on an issue-by-issue basis has resulted in a "virtually unmanageable tangle of government activities" that negatively affects program performance. That commission emphasized the need to reorganize the federal government "into a limited number of mission-related executive departments."

![Figure 7.1 Proposals to Reorganize Federal Ocean Management](image)

Since 1970, there have been many congressional, presidential, and federal advisory committee proposals to consolidate the management of natural resources, including oceans, within the federal government (Table 7.3). Most recently, proposals have focused on establishing NOAA as an independent agency, or moving it out of the Department of Commerce to a more compatible home.
The complexity of the current policy-making process, with its many political and jurisdictional components, compels a cautious, methodical, phased approach for moving toward a more ecosystem-based federal structure. The phases include:

1. **Phase I—Immediate Action:** Solidify NOAA's role as the nation's lead civilian ocean agency through the enactment of a NOAA organic act that codifies the agency's establishment within the Department of Commerce, clarifies its mission, and strengthens execution of its functions.

2. **Phase II—Medium-term Action:** Strengthen other agencies with ocean-related responsibilities and consolidate selected ocean and coastal functions and programs where such consolidation would eliminate unnecessary duplication, achieve more effective policy implementation, and not undermine the central mission of any agency.

3. **Phase III—Long-term Action:** Include oceans and coasts within a unified federal agency structure to manage all natural resources according to an ecosystem-based management approach.

**Strengthening NOAA: Phase I**

NOAA's mission is to understand and predict changes in the Earth's environment and to conserve and manage ocean and coastal resources to meet the nation's economic, social, and environmental needs. The agency's responsibilities have been spread across five line offices: the National Ocean Service; the National Marine Fisheries Service; the National Weather Service; the National Environmental Satellite, Data, and Information Service; and the Office of Oceanic and Atmospheric Research.

Since its creation, NOAA has made significant strides in weather prediction, navigational charting, marine operations and services on the ocean and along the coast, management and protection of living marine resources, satellite operations, processing and distribution of data, and development of innovative technologies and observing systems. These successes have occurred despite significant programmatic and functional overlaps, and frequent disagreements and disconnects among the current line offices. Recently, a sixth line office, the Office of Program Planning and Integration, was established to improve horizontal integration among NOAA line offices. Although this change will require time to take hold and show results, such initiatives constitute one of many steps required to strengthen NOAA's performance.

NOAA needs both to manage its current activities more effectively and, if some or all of the recommendations discussed in this report are implemented, to handle a number of new responsibilities (Box 7.1). For example, Chapter 26 discusses significant improvements that will be needed at NOAA to enable its effective implementation of the Integrated Ocean Observing System (IOOS), including streamlined distribution of funds to other involved agencies, closer partnerships with industry and academia, and the ability to assume operational responsibilities for satellite Earth observing programs. A stronger, more effective, science-based and service-oriented ocean agency—one that contributes to better management of oceans and coasts through an ecosystem-based approach—is needed.

NOAA's three primary functions can be categorized as follows: 1) assessment, prediction, and operations for ocean, coastal, and atmospheric environments; 2) marine resource and area management; and 3) scientific research and education. One of the critical objectives for a strengthened NOAA is improved interaction within and among these categories such that NOAA's functions complement and support each other. For example, resource management decisions should be based on the best available science, research efforts should be planned to support the agency's management missions, and all research—sea, land, and air—should be connected and coordinated. Changes of this nature will likely require adjustments to the internal operation of the agency, including possible additional changes to the current line office structure.
Box 7.1 Improving Ocean and Coastal Management by Enhancing NOAA’s Capacity

NOAA is currently responsible for a variety of ocean and coastal activities and this report contains many recommendations intended to increase the agency’s responsibilities and strengthen its performance in the following areas:

- Ocean exploration.
- Scientific planning and budgeting.
- Research support in a broad range of areas, including socioeconomics, oceans and human health, and monitoring.
- Infrastructure and technology development, including the transition from research to operations.
- Mapping and charting.
- Data and information management and communication.
- Formal and informal education for all ages.
- Domestic and international fishery management.
- Marine mammal and other marine species protection.
- Coral reef conservation.
- Sustainable aquaculture.
- Coastal and watershed management.
- Natural hazards planning and response.
- Habitat conservation and restoration.
- Coastal sediment management.
- Water pollution and water quality monitoring.
- Invasive species control.

Recommendation 7-1

Congress should establish an organic act for the National Oceanic and Atmospheric Administration (NOAA) that codifies its existence and mission. The act should ensure that NOAA’s structure is consistent with the principles of ecosystem-based management and with its three primary functions of: assessment, prediction, and operations; management; and research and education.

Specifically, NOAA’s structure should support its role in:

- assessment, prediction, and operations for ocean, coastal, and atmospheric environments, including mapping and charting, satellite-based and in situ data collection, implementation of the Integrated Ocean Observing System, broadly based data information systems, and weather services and products.
- management of ocean and coastal areas and living and nonliving marine resources, including fisheries, ocean and coastal areas, vulnerable species and habitats, and protection from pollution and invasive species.
- research and education on all aspects of marine resources, including a focus on the importance of research and development, the use of scientifically valid technical data throughout the agency and with external partners, and promotion of educational activities across the agency and with the public.

NOAA’s entire structure, leadership, and staff should be oriented to support the effective exercise of these functions. Beginning with a strengthened science program and a more service-oriented approach, NOAA should be organized not only to improve its efficiency, but also to promote inclusiveness and a commitment to meaningful partnerships with other agencies, states, the private sector, and the academic community. Where partnerships are strong, each institution benefits from the strengths of the others and the
tendency to duplicate similar expertise and functions is minimized. International responsibilities will also need visibility at the highest levels of the agency.

As the clear lead civilian ocean agency in the federal government, NOAA will require budget support commensurate with its important and varied responsibilities. NOAA's placement within DOC may be partly responsible for insufficient visibility, but it has definite budgetary implications. At this time, NOAA's budget is reviewed within the Office of Management and Budget's (OMB's) General Government Programs, along with other elements of the U.S. Department of Commerce, such as the Bureaus of Industry and Security, Economics and Statistics, and Economic Analysis, the Census Bureau, the International Trade Administration, and the Patent and Trademark Office. These programs all have fundamental characteristics and missions programmatically separate from NOAA's, requiring budget examiners with very different expertise and perspectives. NOAA's placement within OMB also precludes its ocean and atmospheric programs from being considered in an ecosystem-based context along with the other resource and science programs in the federal government.

**Recommendation 7-2**
The Office of Management and Budget (OMB), at the instruction of the President, should review the National Oceanic and Atmospheric Administration budget within OMB's Natural Resources Programs, along with the budgets of the U.S. Departments of Agriculture, Energy, and the Interior, the U.S. Environmental Protection Agency, the National Science Foundation, the National Aeronautics and Space Administration, and the U.S. Army Corps of Engineers' Directorate of Civil Works.

**Consolidating Ocean and Coastal Programs: Phase II**

In addition to NOAA, many other agencies across the federal government administer ocean- and coastal-related programs (Box 7.2). In fact, although NOAA encompasses the single largest aggregation of civilian ocean programs, other agencies, taken together, represent the majority of federal spending on ocean, coastal, and atmospheric issues. Thus, changes within NOAA address only one part of the federal agency structure for oceans and coasts. Other agencies with ocean-related activities must be strengthened in a similar manner.

Recommendations throughout this report are intended to strengthen the execution of programs in other federal agencies with ocean- and coastal-related responsibilities, including the U.S. Departments of Agriculture, Commerce, Defense, Energy, Health and Human Services, Homeland Security, the Interior, Labor, State, and Transportation, and the U.S. Environmental Protection Agency (EPA), the National Aeronautics and Space Administration (NASA), and the National Science Foundation (NSF). The goal of moving toward an ecosystem-based management approach requires that all agencies consider how the central functions of: assessment, prediction, and operations; resource management; and scientific research and education fit within their missions. The structure and coordination of these primary functions within each agency should assure they are complementary and support each other.

Departments and agencies often support very similar or overlapping activities. In some cases, this programmatic overlap can provide useful checks and balances when agencies bring different perspectives and experiences to the table. Furthermore, some entities, such as the U.S. Navy, the U.S. Department of Justice, or the NSF, have such distinct missions that their ocean- and coastal-related components could not be simply removed and transferred without harm to the overall enterprise. Programs that are not suitable for consolidation will need to be coordinated through the National Ocean Council and the regional ocean councils.
Box 7.2 Federal Ocean and Coastal Activities in Agencies other than NOAA

The U.S. Department of the Interior’s (DOI’s) mission is to protect the nation’s treasures for future generations, provide access to the nation’s natural and cultural heritage, provide wise stewardship of energy and mineral resources, foster sound use of land and water resources, and conserve and protect fish and wildlife. Several agencies within DOI have ocean and coastal functions, including the U.S. Geological Survey (USGS), the National Park Service (NPS), the U.S. Fish and Wildlife Service (USFWS), and the Minerals Management Service (MMS). USGS provides scientific information to describe and understand the Earth, minimize loss of life and property from natural disasters, and manage water, biological, energy, and mineral resources. The goal of NPS is to conserve the scenery, the natural and historic objects, and the wildlife therein, and to provide for the enjoyment of these resources in a manner that will leave them unimpaired for future generations. Many units within the National Park System are located in coastal areas. The USFWS mission is to conserve, protect, and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people. MMS assesses the nature, extent, recoverability, and value of leasable minerals on the outer Continental Shelf. It oversees the development and efficient recovery of mineral resources and promotes the use of safe offshore operational technologies.

The mission of the U.S. Environmental Protection Agency (EPA) is to protect human health and to safeguard the natural environment—air, water, and land—upon which life depends. Within EPA, the Office of Water includes the Office of Wetlands, Oceans, and Watersheds, which addresses wetlands protection, protection of ocean and coastal environments, including watersheds and estuaries, management of dredged material, and water quality monitoring.

The National Aeronautics and Space Administration’s Earth Science Enterprise studies the Earth from space through environmental research programs and observing systems to meet the needs of the nation’s scientific communities.

The U.S. Army Corps of Engineers’ Directorate of Civil Works, located in the U.S. Department of Defense, administers flood control and shore protection programs, environmental restoration programs, and the regulation of U.S. waters and wetlands.

The U.S. Coast Guard, a multi-mission agency recently transferred from the U.S. Department of Transportation to the new U.S. Department of Homeland Security, is the principal federal marine enforcement agency for environmental and natural resource regulations in U.S. ocean and coastal waters, and regulates vessel and port safety, security, and environmental protection.

The U.S. Navy contributes significant resources to ocean science activities. Through the Office of Naval Research and the Naval Meteorological and Oceanography Command, the Navy has been instrumental in a number of areas since long before the creation of NOAA. Some of these areas include global ocean and seafloor data collection, archival, modeling, data fusion, and product generation, as well as a wide array of ocean research and technology, diving and salvage technology, deep submergence, ocean engineering and construction, and medical research.

The National Science Foundation supports basic research to further the understanding of all aspects of the global oceans and their interactions with the land and the atmosphere.

Other agencies in the Departments of Defense and Homeland Security also carry out activities with significant ocean components, although typically in a military or security context quite different from the resource management focus of the primary ocean agencies. Programs with ocean-related functions also exist within the Departments of Agriculture, Energy, Health and Human Services, Justice, Labor, State, and Transportation and in the U.S. Agency for International Development.
Nevertheless, during the 1970 reorganization that established NOAA, many programs that arguably should have become part of that new agency were left in other departments. Since that time, ocean- and coastal-related programs have continued to proliferate. In some cases, the number of separate agencies addressing a similar issue is not helpful. Such fragmentation diffuses responsibility, introduces unnecessary overlap, raises administrative costs, inhibits communication, and interferes with the development of a comprehensive management regime that addresses issues within an ecosystem-based context.

Programs that may be appropriate for consolidation can be found in several departments and agencies, including DOI, EPA, USACE's Directorate of Civil Works, and NASA. These agencies carry out important functions related to managing and protecting marine areas and resources, conducting science, education, and outreach, and carrying out assessment and prediction in the ocean, coastal, and atmospheric environments. In Phase II of strengthening the federal agency structure, judicious consolidation of ocean- and coastal-related functions and programs will improve policy integration and program effectiveness.

**Recommendation 7–3**

The Assistant to the President, with advice from the National Ocean Council and the President's Council of Advisors on Ocean Policy, should review federal ocean, coastal, and atmospheric programs, and recommend opportunities for consolidation of similar functions.

Discussion of possible candidates for program consolidation can be found throughout this report, including in Chapter 9 (area-based ocean and coastal resource management), Chapter 14 (nonpoint source pollution), Chapter 16 (vessel pollution), Chapter 17 (invasive species), Chapter 20 (marine mammals), Chapter 22 (aquaculture), and Chapter 26 (satellite Earth observing operations).

Because the legislative process to create or reorganize agencies is often contentious, lengthy, and uncertain, involving multiple committees in both houses of Congress, limited reorganization authority has been granted to the President at various times (Box 7.3). In its 2003 report, the Volcker Commission supported the reinstatement of presidential reorganization authority, with suitable congressional oversight, to streamline improvements in the executive branch.³ Allowing the President authority to propose expedited agency reorganization, with a congressional review and approval process that is timely, constitutionally valid, administratively workable, transparent, and accountable, would provide an excellent mechanism to achieve reorganization of federal ocean- and coastal-related agencies and programs more expeditiously.

**Recommendation 7–4**

Congress should authorize the President to propose structural reorganization of federal departments and agencies, subject to Congressional approval.

In particular, such legislation should:

- preclude Congress from amending the President's proposal.
- require Congress to vote on the President's proposal within a specified time period after submission of the plan by the President.
Box 7.3 Historical Precedent for Presidential Reorganization of the Executive Branch

By historical practice and case law interpretation, the President and Congress have operated on the premise that the power to establish, structure, and reorganize federal agencies is a legislative power, conferred on Congress by the U.S. Constitution. In the absence of a specific statute stating otherwise, the President lacks authority to reorganize executive branch departments and agencies.

However, over the last one hundred years, Congress has intermittently granted the President such authority, with a variety of restrictions and with provisions for expedited congressional approval or disapproval of the President’s proposals. A total of eighteen reorganization acts were passed between 1932 and 1984.

In 1970, President Nixon used the Reorganization Act of 1949, which authorized the President to propose agency reorganization subject to congressional disapproval, to establish the National Oceanic and Atmospheric Administration and the U.S. Environmental Protection Agency. The most recent presidential reorganization authority expired at the end of 1984.

Managing All Natural Resources in an Ecosystem-based Management Approach: Phase III

Based on a growing understanding of ecosystems, including recognition of the inextricable links among the sea, land, air, and all living things, a more fundamental reorganization of federal resource agencies will eventually be needed.

As noted, the major ocean- and coastal-related functions of: assessment, prediction, and operations; resource management; and research and education reside in a variety of agencies. Strengthening the performance of ocean, coastal, and atmospheric programs through coordination and consolidation are important steps in moving toward an ecosystem-based management approach. By immediately establishing the National Ocean Council and strengthening NOAA, followed by the consolidation of suitable ocean and coastal programs and functions, the nation will be poised to take a further step in strengthening the federal government structure.

Consolidation of all natural resource functions, including those applicable to oceans and coasts, would enable the federal government to move toward true ecosystem-based management. This could be implemented through the establishment of a Department of Natural Resources or some other structural unification that brings together all of the nation’s natural resource programs.

Recommendation 7-5

Following establishment of the National Ocean Council and the President’s Council of Advisors on Ocean Policy, strengthening of the National Oceanic and Atmospheric Administration, and consolidation of similar federal ocean and coastal programs, the President should propose to Congress a reorganization of the federal government that recognizes the links among all the resources of the sea, land, and air, and establishes a structure for more unified, ecosystem-based management of natural resources.
Table 7.1 Thirty Years of Proposals to Reorganize Federal Management of Ocean and Coastal Resources

Between 1971 and 2001, there were many congressional, presidential, and federal advisory committee proposals to improve the management of oceans and other natural resources within the federal government. Details of these proposals are shown below. The icons on the left of each proposal correspond to Figure 7.1.

- **Ash Council Proposal (1971)** for a Department of Natural Resources: The proposal of the President’s Advisory Council on Executive Reorganization called for eight cabinet-level agencies, including a Department of Natural Resources, which would include an Oceanic, Atmospheric, and Earth Science Administration made up of the National Oceanic and Atmospheric Administration (NOAA) and the U.S. Geological Survey. The proposal was modified in 1972 to also address the nation’s energy resources in the form of a Department of Energy and Natural Resources. Neither proposal was acted upon by Congress.

- **Moss Proposal (1973)** for a Department of Natural Resources and Environment: The proposal (S. 27) called for the creation of a new Department of Natural Resources and Environment and transferred all of the functions of the Department of the Interior, the Water Resources Council, the Energy Research and Development Administration, the Nuclear Regulatory Commission, and the Federal Energy Administration to the new department. Various functions of the Department of Commerce (including NOAA), the Department of Defense (civil works and civil regulatory functions), the Department of Agriculture, the Department of Transportation, and the Environmental Protection Agency were also to be transferred to the new department. The proposal was introduced again in 1975 (also S. 27), but no action was taken on either proposal.

- **Dingell Proposal (1973)** for a Department of Natural Resources: The proposal (H.R. 3249) called for redesignating the Department of the Interior as the Department of Natural Resources and moving NOAA to this department. No action was taken.

- **Hollifield Proposal (1973)** for a Department of Energy and Natural Resources: The proposal (H.R. 9060) called for establishing an executive department to be known as the Department of Energy and Natural Resources, with five administrations to include an Oceanic, Atmospheric, and Earth Sciences Administration. NOAA and several other agencies would be transferred to the new department, with a division of functions among the five administrations. No action was taken.

- **McDade Proposal (1974)** for a Department of Natural Resources: The proposal (H.R. 12733) called for redesignating the Department of the Interior as the Department of Natural Resources, within which a National Oceanic and Atmospheric Agency would be established. No action was taken.

- **Junnery Proposal (1975)** for a Department of Natural Resources: The proposal (S. 2726) called for establishing a new Department of Natural Resources in the executive branch, transferring all of the functions of the Department of the Interior, the Federal Energy Administration, the Federal Energy Research and Development Administration, and the Water Resources Council to the new department. Various functions of the Departments of Commerce, Defense, Agriculture, and Transportation would also be transferred to the new department. The proposal also called for the establishment of an Executive Office of Resource and Materials Policy and a Joint Congressional Committee on Energy, Materials, and the Environment. No action was taken on this proposal.

- **Ribicoff Proposal (1975)** for a Department of Energy and Natural Resources: The proposal (S. 3339) called for establishing a Department of Energy and Natural Resources to assume the nonregulatory functions of specified agencies dealing with the management and conservation of natural resources and energy research. It also proposed to establish, within the Executive Office of the President, the Natural Resources Council to facilitate communication among federal agencies responsible for natural resource management and policy and to recommend improvements in such management and policy. No action was taken.

- **Hollings Proposal (1976)** for a Department of the Environment and Oceans: The proposal (S. 3889) called for creating a Department of the Environment and Oceans, transferring into this new department existing agencies such as the Environmental Protection Agency, NOAA, and the U.S. Coast Guard, as well as a number of services and programs from both the U.S. Army, Corps of Engineers and the Department of the Interior, to deal with the nation’s “common property resources.” No action was taken.

- **Percy Proposal (1977)** for a Department of Energy Supply and Natural Resources: The proposal (S. 591) called for reorganizing federal energy-related activities in the executive branch, temporarily establishing an Energy Policy Council and a cabinet-level Committee on Conservation to establish energy policy objectives. The proposal also called for establishing an Executive Department of Energy Supply and Natural Resources, transferring energy and natural resources functions from the Department of the Interior, the Federal Energy Administration, the Energy Research and Development Administration, and the U.S. Forest Service to the new agency, and transferring additional functions to existing departments and agencies. No action was taken.
Table 7.1 (continued) Thirty Years of Proposals to Reorganize Federal Management of Ocean and Coastal Resources

- Brooke Proposal (1977) for a Department of Environment and Natural Resources: The proposal (S. 1481) called for creating a Department of Environment and Natural Resources, transferring all functions of the Environmental Protection Agency and the Department of the Interior to the new department. Additional authority with respect to oceans, vessel and facility pollution control, coastal zone management, and atmospheric services was also to be transferred to the new department. No action was taken.

- President Carter's Reorganization Proposal (1978) for a Department of Natural Resources: The proposal called for a larger governmental reorganization, which included a new Department of Natural Resources, to address the problems being faced on a national scale in the area of natural resource development, with the mission of “managing the nation's natural resources for the public purposes, including protection, preservation, and wise use.” The composition of this new department would be a large part of the Department of the Interior, NOAA, the U.S. Forest Service, and a number of programs from the Department of Agriculture and the U.S. Army Corps of Engineers' Directorate of Civil Works. Within the department would be five administrations, one of which would be the Oceanic and Atmospheric Administration to include the functions of NOAA; the Bureau of Land Management's Outer Continental Shelf (OCS) program; the U.S. Geological Survey Conservation Division's OCS program; U.S. Fish and Wildlife Service's anadromous fisheries and marine mammal programs; and the Bureau of Reclamation's Water Distribution program. This proposal was not adopted.

- National Advisory Committee on Oceans and Atmosphere (advisory to NOAA) (1971-87): This body, created in 1971 as a result of the Stratton Commission, made a number of recommendations for reorganization. In its 1978 and 1979 reports, the National Advisory Committee on Oceans and Atmosphere recommended that “the President and the Congress should refashion the non-military federal structure dealing with the atmosphere, coastal zone, polar regions, and the oceans...so as to centralize programs and federal management elements to improve coordination of activities relating to economic development, environmental protection, and scientific and technological capabilities in the oceans and affecting the atmosphere.” These recommendations were never implemented.

- Scheuer Proposal (1983) for an independent NOAA: The proposal (H.R. 3355) called for establishing NOAA as an independent agency, granting the agency coordination responsibility for oceanic and atmospheric matters, and setting forth the enforcement authority of the administration. No action was taken.

- Forsythe Proposal (1983) for an independent NOAA: The proposal (H.R. 3381) called for establishing NOAA as an independent agency, granting it coordination responsibility for oceanic and atmospheric matters, and setting forth the enforcement authority of the administration. The bill reported to the House from the Committee on Merchant Marine and Fisheries, but the proposal was never adopted.

- Weikert Proposal (1987) for an independent NOAA: The proposal (S. 821) called for establishing NOAA as an independent federal agency. No action was taken.

- Lowry Proposal (1988) for an independent NOAA: The proposal (H.R. 5070) called for establishing NOAA as an independent agency to administer features of U.S. policy with respect to civil oceanic, coastal, and atmospheric activities and programs. No action was taken.

- Unsold Proposal (1993) for transfer of NOAA functions: The proposal (H.R. 2761) called for transferring to the Department of the Interior the following NOAA offices and assets: the National Ocean Service, the National Marine Fisheries Service, the Office of Oceanic and Atmospheric Research, the fleet of research and survey vessels, and the NOAA Corps. It also called for the transfer of components of the National Ocean Service that carry out coastal management and assessment programs to the Environmental Protection Agency. No action was taken.

- Chrysler Proposal (1995) for transfer of NOAA functions: After the House and Senate passed the Concurrent Resolution on the Budget for Fiscal 1996 (H. Con. Res. 67), which called for eliminating the Department of Commerce as part of a congressional effort to streamline government, increase efficiency, and save taxpayer dollars, Congressman Chrysler introduced H.R. 1756, proposing to eliminate various parts of NOAA and transfer other parts of the agency to other existing agencies as part of an overall proposal to dismantle and wind up the affairs of the Department of Commerce over a period of three years. As with other proposals of this magnitude, the bill was referred to eleven committees, involving an additional ten subcommittees. Several committee members strongly dissented in the House Committee on Ways and Means report (Rept. 104-260), but no specific mention was made about NOAA. Although several subcommittees discharged or reported on the bill, no further action was taken.

- Abraham Proposal (1995, 1997) for an independent NOAA: The proposal (S. 929) called for re-establishing NOAA as an independent executive entity, following the abolishment of the Department of Commerce and transferring the functions from the former NOAA to a new NOAA. It also set forth other administrative changes, as well as the coordination of environmental policy. The proposal was reported out of committee to the Senate floor, but action was never taken. Variations of this proposal were introduced again in 1997 (S. 1226 and S. 1316), but no action was taken.
### Table 7.1 (continued) Thirty Years of Proposals to Reorganize Federal Management of Ocean and Coastal Resources

- **Royce Proposal (1997) for transfer of NOAA functions:** This proposal (H.R. 1319) was similar to earlier House proposals to dismantle the Department of Commerce, calling for the termination of various parts of NOAA and the transfer of other parts of the agency to other existing agencies. No action was taken.

- **Royce Proposal (1997) for an independent NOAA:** This proposal (H.R. 2667) was similar to other House proposals to terminate the Department of Commerce, except that it called for creating an independent NOAA to which any of the former NOAA's functions that were not already terminated or transferred to other agencies by the bill would be transferred. No action was taken.

- **Young Proposal (1998) for transfer of certain NOAA functions:** The proposal (H.R. 4335) called for transferring to the Secretary of the Interior the functions of the Secretary of Commerce and the National Marine Fisheries Service under the Endangered Species Act of 1973. No action was taken.

- **Royce Proposal (1999) for an independent NOAA:** The proposal (H.R. 2452) called for re-establishing NOAA as an independent agency in the executive branch, under the supervision and direction of an Administrator of Oceans and Atmosphere. Certain functions would be transferred to a new NOAA. National Marine Fisheries Service functions, all functions performed by the National Ocean Service, National Environmental Satellite, Data, and Information Service functions, Office of Oceanic and Atmospheric Research functions, and National Weather Service functions. Other programs would be transferred to other existing agencies. Coastal nonpoint pollution functions would be transferred to the Environmental Protection Agency. Aeronautical mapping and charting functions would be transferred to the Transportation Administration Services Center at the Department of Transportation. Other functions relating to mapping, charting, and geodesy would be moved to the U.S. Army Corps of Engineers. This proposal was part of a larger proposal to terminate the Department of Commerce. It was introduced again in 2001 (H.R. 375). No action was taken on the proposal.

### References


3. Ibid.
CHAPTER 31

SUMMARY OF RECOMMENDATIONS

The Oceans Act of 2000 charged the U.S. Commission on Ocean Policy with carrying out the first comprehensive review of ocean-related issues and laws in more than thirty years. The Commission took up that charge, presenting over 200 recommendations throughout this report that will move the nation toward a more coordinated and comprehensive ocean policy. This chapter assembles all the recommendations in one place. To assist federal agencies and others in quickly identifying actions most relevant to them, it also provides an index of the recommendations organized by the agency, group, or individual charged with carrying out the proposed action.

Context for the Recommendations

Guiding Principles

As explained in Chapter 3, the Commission’s work was guided by the following set of fundamental principles:

- **Sustainability**: Ocean policy should be designed to meet the needs of the present generation without compromising the ability of future generations to meet their needs.
- **Stewardship**: The principle of stewardship applies both to the government and to every citizen. The U.S. government holds ocean and coastal resources in the public trust—a special responsibility that necessitates balancing different uses of those resources for the continued benefit of all Americans. Just as important, every member of the public should recognize the value of the oceans and coasts, supporting appropriate policies and acting responsibly while minimizing negative environmental impacts.
- **Ocean–Land–Atmosphere Connections**: Ocean policies should be based on the recognition that the oceans, land, and atmosphere are inextricably intertwined and that actions that affect one Earth system component are likely to affect another.
- **Ecosystem-based Management**: U.S. ocean and coastal resources should be managed to reflect the relationships among all ecosystem components, including humans and nonhuman species and the environments in which they live. Applying this principle will require defining relevant geographic management areas based on ecosystem, rather than political, boundaries.
• **Multiple Use Management:** The many potentially beneficial uses of ocean and coastal resources should be acknowledged and managed in a way that balances competing uses while preserving and protecting the overall integrity of the ocean and coastal environments.

• **Preservation of Marine Biodiversity:** Downward trends in marine biodiversity should be reversed where they exist, with a desired end of maintaining or recovering natural levels of biological diversity and ecosystem services.

• **Best Available Science and Information:** Ocean policy decisions should be based on the best available understanding of the natural, social, and economic processes that affect ocean and coastal environments. Decision makers should be able to obtain and understand quality science and information in a way that facilitates successful management of ocean and coastal resources.

• **Adaptive Management:** Ocean management programs should be designed to meet clear goals and provide new information to continually improve the scientific basis for future management. Periodic reevaluation of the goals and effectiveness of management measures, and incorporation of new information in implementing future management, are essential.

• **Understandable Laws and Clear Decisions:** Laws governing uses of ocean and coastal resources should be clear, coordinated, and accessible to the nation's citizens to facilitate compliance. Policy decisions and the reasoning behind them should also be clear and available to all interested parties.

• **Participatory Governance:** Governance of ocean uses should ensure widespread participation by all citizens on issues that affect them.

• **Timeliness:** Ocean governance systems should operate with as much efficiency and predictability as possible.

• **Accountability:** Decision makers and members of the public should be accountable for the actions they take that affect ocean and coastal resources.

• **International Responsibility:** The United States should act cooperatively with other nations in developing and implementing international ocean policy, reflecting the deep connections between U.S. interests and the global ocean.

These principles underlie all the Commission's recommendations, and their full implementation will lead the nation toward a future where the benefits of the oceans and coasts are fully realized and the problems plaguing these areas are minimized.

**Creating a Strong Role for States**

Based on the charge of the Oceans Act of 2000, the Commission has recommended actions to achieve a coordinated and comprehensive national ocean policy at all levels of government—including federal, state, and local—and has called for enhanced partnerships among federal agencies and state and local stakeholders. The Commission sees a central role for states in ocean and coastal management and identifies many opportunities for them to contribute to an integrated national ocean policy. The President's Council of Advisors on Ocean Policy, a high-level advisory body to be appointed by the President, should serve as one important formal structure for input from nonfederal individuals and organizations, including governors of coastal states, additional state, territorial, tribal, and local government representatives, and others.

Some of the important areas for state involvement, as discussed throughout the report, include:

• formal and informal ocean education at all levels, including outreach to underrepresented and underserved communities.
- creation of regional ocean councils to help coordinate federal, state, tribal, and local planning and action, and designation of regional ocean information programs to supply the information needed to support an ecosystem-based approach.
- improved management of coastal areas, including incorporation of coastal watersheds, to achieve better pollution control, growth management, hazards mitigation, transportation planning, sediment management, and habitat conservation and restoration.
- development of a prioritized, comprehensive plan for upgrading the nation's aging and inadequate wastewater and drinking water infrastructure, including improved stormwater management.
- coordination of a national monitoring network and creation of useful products based on monitoring data.
- planning for early detection, prompt notification, and rapid response to marine invasive species.
- prevention of marine debris, in part through public outreach and education.
- management of commercial and recreational fish stocks and sustainable aquaculture operations.
- participation in a broad dialogue on the development of a coordinated offshore management regime, including the design and implementation of marine protected areas.

Another area where state input will be essential is the development of ocean observations and science to support policy decisions. States will need to communicate their information needs and priorities as part of the creation of a national strategy for basic and applied ocean science and technology, including the social science and economic research needed to understand the human dimensions and economic value of the oceans and coasts. States should also participate as full partners in the design and implementation of regional observing systems and their integration into the national Integrated Ocean Observing System.

Many of the Commission's recommendations explicitly call for the executive branch to consult with the nonfederal President's Council of Advisors on Ocean Policy and for federal entities to work closely with state and local governments. But even where it is left unstated, the importance of state input and action is assumed throughout.

The Need for Congressional Leadership

Substantial legislative action will be required to achieve a comprehensive, coordinated ocean policy. Some of the statutory changes needed include codifying a major portion of the new ocean policy framework, providing for organizational and jurisdictional restructuring within and between federal ocean agencies, and strengthening existing ocean programs and initiatives and enacting new ones. However, Congressional implementation of the cross-cutting initiatives called for by the Commission will be tested and challenged by the current organization of the committee systems in the Senate and House of Representatives. (For additional information on congressional committee jurisdictions over the range of ocean and coastal issues, see Appendix E)

In addition to the recommendations that call for specific legislative changes, Congress will also need to supply additional funding to achieve meaningful improvement. Although a number of administrative and organizational changes can be made at little or no cost, most of the recommendations in this report—whether they call for major new initiatives or for expansion of successful existing programs—can only be implemented with financial support from Congress. Chapter 30 provides an extensive discussion of funding needs, and Appendix G provides a detailed table listing the estimated cost of every recommendation in the report. This should be helpful as a guide in the congressional appropriations process. Chapter 30 also suggests a mechanism, the Ocean Policy Trust Fund, for creating a dedicated, long-term source of support for ocean and coastal science and management.
Index to the Recommendations

The following section provides an index to all the Commission's recommendations, categorized according to the various organizations and individuals directed to take action. Each entry lists the numbers of all recommendations applicable to that entity. (As a reminder, recommendations are labeled by chapter number. For example, Recommendation 12–5 refers to the 5th recommendation in Chapter 12.) The complete text of all the recommendations, organized by chapter, follows this index.

Although each recommendation is listed below under the primary actor or actors charged with implementing it, other organizations or individuals are often tasked with providing input or helping to accomplish the objective. To see further details about implementation, and to fully understand the background and reasoning behind each recommendation, the reader should carefully examine the corresponding chapter of the report.

Recommendations to Congress

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As noted in the introduction to this chapter, the Commission sees a strong role for state, territorial, tribal, and local governments in implementing ocean policy. The list shown below includes only those recommendations that call for specific actions to be led by state-level actors. Many other recommendations and discussions throughout the report also emphasize the importance of state and local involvement.


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Chapter 1: Recognizing Ocean Assets and Challenges

No recommendations.

Chapter 2: Understanding the Past to Shape a New National Ocean Policy

No recommendations.

Chapter 3: Setting the Nation's Sights

No recommendations.

Chapter 4: Enhancing Ocean Leadership and Coordination

**Recommendation 4-1**

Congress should establish a National Ocean Council (NOC) within the Executive Office of the President, and a nonfederal President's Council of Advisors on Ocean Policy to provide enhanced federal leadership and coordination for the ocean and coasts. While Congress works to establish these components in law, the President should begin immediately to implement an integrated national ocean policy by establishing the NOC and President's Council of Advisors on Ocean Policy through an executive order, and by designating an Assistant to the President to chair the NOC.

**Recommendation 4-2**

The National Ocean Council (NOC) should provide high-level attention to ocean and coastal issues, develop appropriate national policies, and coordinate their implementation by the many federal departments and agencies with ocean and coastal responsibilities.

The NOC should be:
- chaired by an Assistant to the President.
- composed of cabinet secretaries of departments and directors of independent agencies with appropriate ocean- and coastal-related responsibilities. Heads of other relevant executive departments, agencies, commissions, quasi-official agencies and senior White House officials should be invited to attend meetings of the NOC when appropriate.

The NOC should carry out the following functions:
- develop broad principles (based on those outlined in Chapter 3) and national goals for governance of the nation's oceans and coasts, and periodically review and revise these goals.
- make recommendations to the President on developing and carrying out national ocean policy, including domestic implementation of international ocean agreements.
- coordinate and integrate activities of ocean-related federal agencies and provide incentives for meeting national goals.
- identify statutory and regulatory redundancies or omissions and develop strategies to resolve conflicts, fill gaps, and address new and emerging ocean issues for national and regional benefits.
- guide the effective use of science in ocean policy and ensure the availability of data and information for decision making at national and regional levels.
- develop and support partnerships among government agencies and nongovernmental organizations, the private sector, academia, and the public.
• expand education and outreach efforts by federal ocean and coastal agencies.
• work with a broad range of nonfederal stakeholders, governmental and nongovernmental, to develop a broad, flexible, and voluntary process for the establishment of regional ocean councils to help advance regional approaches.
• periodically assess the state of the nation’s oceans and coasts to measure the achievement of national ocean goals.

Recommendation 4–3
The National Ocean Council (NOC) should adopt the principle of ecosystem-based management and assist federal agencies in moving toward an ecosystem-based management approach. As part of this effort, the NOC should:
• coordinate the development of procedures for the practical application of the precautionary approach and adaptive management.
• encourage agencies to incorporate preservation of marine biodiversity in their management programs and support further study of biodiversity.

Recommendation 4–4
The President should designate an Assistant to the President to provide leadership and support for national ocean and coastal policy. The Assistant to the President should have the following responsibilities:
• chair the NOC.
• co-chair the President’s Council of Advisors on Ocean Policy.
• lead NOC efforts to coordinate federal agency actions related to oceans and coasts.
• make recommendations for federal agency reorganization as needed to improve ocean and coastal management.
• resolve interagency policy disputes on ocean and coastal issues.
• reach out to state, territorial, tribal, and local stakeholders and promote regional approaches to ocean and coastal management.
• consult with the Office of Management and Budget (OMB) director and NOC members to identify programs that contribute significantly to the national policy for oceans and coasts, advise OMB and the agencies on appropriate funding levels for ocean- and coastal-related activities, and prepare the biennial reports mandated by section 5 of the Oceans Act of 2000.

Recommendation 4–5
The President’s Council of Advisors on Ocean Policy, a formal structure for input from nonfederal individuals and organizations, should advise the President on ocean and coastal policy matters. The President’s Council of Advisors on Ocean Policy should be:
• composed of a representative selection of individuals appointed by the President, including governors of coastal states and other appropriate state, territorial, tribal and local government representatives, plus individuals from the private sector, research and education communities, nongovernmental organizations, watershed organizations, and other nonfederal bodies with ocean interests.
• comprised of members knowledgeable about and experienced in ocean and coastal issues.
• co-chaired by the chair of the National Ocean Council and a nonfederal member.
Recommendation 4–6
Congress should establish an Office of Ocean Policy to support the Assistant to the President, the National Ocean Council (NOC), and the President's Council of Advisors on Ocean Policy. To provide staff support immediately, the President should establish an Office of Ocean Policy through the executive order creating the NOC and the President's Council of Advisors on Ocean Policy.
The Office of Ocean Policy should be:
- composed of a small staff that reports to the Assistant to the President.
- managed by an executive director responsible for daily staff activities.

Recommendation 4–7
Congress, working with the National Ocean Council (NOC), should amend the National Oceanographic Partnership Act to integrate ocean observing, operations, and education into its marine research mission. A strengthened and enhanced National Ocean Research Leadership Council (NORLC) should be redesignated as the Committee on Ocean Science, Education, Technology, and Operations (COSETO), under the oversight of the NOC.
In particular, amendments to the National Oceanographic Partnership Act should specify that the newly-named COSETO:
- reports to the NOC.
- is chaired by the director of the Office of Science and Technology Policy to ensure appropriate links to government-wide science and technology policy and equity among participating federal agencies.
- includes in its mandate coordination and planning of federal marine facilities and operations, federal oversight of the Integrated Ocean Observing System, and coordination of ocean-related education efforts, in addition to its existing research responsibilities.
- includes existing NORLC members plus the director of the National Institute of Environmental Health Sciences at the National Institutes of Health, the assistant secretary for Natural Resources and Environment at the Department of Agriculture, and the undersecretary for science at the Smithsonian Institution.
- subsumes the current tasks of the National Science and Technology Council's Joint Subcommittee on Oceans.
- is supported by the Office of Ocean Policy.

Recommendation 4–8
The National Ocean Council (NOC) should establish a Committee on Ocean Resource Management to better integrate the resource management activities of ocean-related agencies. This committee should oversee and coordinate the work of existing ocean and coastal interagency groups and less formal efforts, recommend the creation of new topical task forces as needed, and coordinate with government-wide environmental and natural resource efforts that have important ocean components.
The Committee on Ocean Resource Management should:
- be chaired by the chair of the Council on Environmental Quality to ensure appropriate links to government-wide environmental policy and equity among participating federal agencies.
- include undersecretaries and assistant secretaries of departments and agencies that are members of the NOC.
- report to the NOC.
- be supported by the Office of Ocean Policy.

Recommendation 4–9
The National Ocean Council (NOC) should review all existing ocean-related councils and commissions and make recommendations about their ongoing utility, reporting structure, and connections to the NOC.
Chapter 5: Advancing a Regional Approach

Recommendation 5–1
The National Ocean Council should work with Congress, the President's Council of Advisors on Ocean Policy, and state, territorial, tribal, and local leaders, including representatives from the private sector, nongovernmental organizations, and academia, to develop a flexible and voluntary process for the creation of regional ocean councils. States, working with relevant stakeholders, should use this process to establish regional ocean councils, with support from the National Ocean Council.

Recommendation 5–2
The President, through an executive order, should direct all federal agencies with ocean- and coastal-related functions to immediately improve their regional coordination and increase their outreach efforts to regional stakeholders.
To initiate this process, NOAA, EPA, USACE, DOI, and USDA should:

- collaborate with regional, state, territorial, tribal, and local governments, and non-governmental parties to identify regional priorities and information needs.
- identify inconsistencies in agency mandates, policies, regulations, practices, or funding that prevent regional issues from being effectively addressed and communicate these to the National Ocean Council.
- improve coordination and communication among agencies, including the possible development of interagency protocols to guide regional decision making.
- coordinate funding and grants in a manner consistent with regional priorities.

Recommendation 5–3
The President should form a task force of federal resource management agencies to develop a proposal for adoption and implementation of common federal regional boundaries. The task force should solicit input from state, territorial, tribal, and local representatives.

Recommendation 5–4
Pending the creation of a regional ocean council, the governors in each region should select a suitable entity to operate a regional ocean information program that carries out research, data collection, information product development, and outreach based on the needs and priorities of ocean and coastal decision makers.
The entity assigned to carry out the regional ocean information program should:

- include representation from federal agencies, state, territorial, tribal, and local decision makers, scientists, as well as experts in information exchange and outreach.
- communicate regional research and information priorities to federal agencies and others with ocean and coastal responsibilities to help guide their programs.
- maintain strong links with the regional ocean observing systems to help them fulfill regional data collection requirements while adhering to national Integrated Ocean Observing System requirements.

Recommendation 5–5
The National Oceanic and Atmospheric Administration (NOAA) and the U.S. Environmental Protection Agency (EPA), working with other appropriate federal and regional entities, should coordinate the development of regional ecosystem assessments, to be updated periodically.
As part of this process, NOAA and EPA should:

- incorporate data and information developed at the state and local levels, including resource assessments developed by state coastal management programs.
- coordinate with the organization responsible for improving regional ocean information collection and dissemination activities to make optimum use of regional information.
- collaborate closely with regional ocean councils.
Recommendation 5–6
The Council on Environmental Quality should revise its National Environmental Policy Act guidelines to state that environmental impact statements for proposed ocean- and coastal-related activities should incorporate the regional ecosystem assessments called for in Recommendation 5–5.

Chapter 6: Coordinating Management in Federal Waters

Recommendation 6–1
The National Ocean Council should ensure that each current and emerging activity in federal waters is administered by a lead federal agency and make recommendations for Congressional action where needed. The lead agency should coordinate with other applicable authorities and should ensure full consideration of the public interest.

Recommendation 6–2
Congress, working with the National Ocean Council (NOC) and regional ocean councils, should establish a balanced, ecosystem-based offshore management regime that sets forth guiding principles for the coordination of offshore activities, including a policy that requires a reasonable portion of the resource rent derived from such activities to be returned to the public. In developing an offshore management regime, Congress, the NOC, and regional ocean councils should:

- adopt as guiding principles those set forth by the Commission.
- recognize the need, where appropriate, for comprehensive, single-purpose ocean governance structures, which would be based on the guiding principles of the new regime and integrated with other uses.
- include a process for addressing new and emerging activities.

Recommendation 6–3
The National Ocean Council should develop national goals and guidelines leading to a uniform process for the effective design, implementation, and evaluation of marine protected areas. The process should include the following:

- marine protected area designations that are based on the best available science to ensure that an area is appropriate for its intended purpose.
- periodic assessment, monitoring, and adjustment to ensure continuing ecological and socioeconomic effectiveness of marine protected areas.
- design and implementation that consider issues of national importance, such as freedom of navigation, and are conducted in the context of an ecosystem-based comprehensive offshore management regime.

Recommendation 6–4
To create effective and enforceable marine protected areas, regional ocean councils and appropriate federal, regional, state, and local entities should work together on marine protected area design, implementation, and evaluation. Planners should follow the process developed by the National Ocean Council, actively soliciting stakeholder input and participation.
Chapter 7: Strengthening the Federal Agency Structure

Recommendation 7-1
Congress should establish an organic act for the National Oceanic and Atmospheric Administration (NOAA) that codifies its existence and mission. The act should ensure that NOAA's structure is consistent with the principles of ecosystem-based management and with its three primary functions of: assessment, prediction, and operations; management; and research and education.
Specifically, NOAA's structure should support its role in:
- assessment, prediction, and operations for ocean, coastal, and atmospheric environments, including mapping and charting, satellite-based and in situ data collection, implementation of the Integrated Ocean Observing System, broadly based data information systems, and weather services and products.
- management of ocean and coastal areas and living and nonliving marine resources, including fisheries, ocean and coastal areas, vulnerable species and habitats, and protection from pollution and invasive species.
- research and education on all aspects of marine resources, including a focus on the importance of research and development, the use of scientifically valid technical data throughout the agency and with external partners, and promotion of educational activities across the agency and with the public.

Recommendation 7-2
The Office of Management and Budget (OMB), at the instruction of the President, should review the National Oceanic and Atmospheric Administration budget within OMB's Natural Resources Programs, along with the budgets of the U.S. Departments of Agriculture, Energy, and the Interior, the U.S. Environmental Protection Agency, the National Science Foundation, the National Aeronautics and Space Administration, and the U.S. Army Corps of Engineers' Directorate of Civil Works.

Recommendation 7-3
The Assistant to the President, with advice from the National Ocean Council and the President's Council of Advisors on Ocean Policy, should review federal ocean, coastal, and atmospheric programs, and recommend opportunities for consolidation of similar functions.

Recommendation 7-4
Congress should authorize the President to propose structural reorganization of federal departments and agencies, subject to Congressional approval.
In particular, such legislation should:
- preclude Congress from amending the President's proposal.
- require Congress to vote on the President's proposal within a specified time period after submission of the plan by the President.

Recommendation 7-5
Following establishment of the National Ocean Council and the President's Council of Advisors on Ocean Policy, strengthening of the National Oceanic and Atmospheric Administration, and consolidation of similar federal ocean and coastal programs, the President should propose to Congress a reorganization of the federal government that recognizes the links among all the resources of the sea, land, and air, and establishes a structure for more unified, ecosystem-based management of natural resources.
Chapter 8: Promoting Lifelong Ocean Education

Recommendation 8–1
Congress should amend the National Oceanographic Partnership Act to add a national ocean education office (Ocean.ED) with responsibility for strengthening ocean-related education and coordinating federal education efforts.
In particular, Ocean.ED should:
- develop a national strategy for enhancing educational achievement in natural and social sciences and increasing ocean awareness, including promotion of programs that transcend the traditional mission boundaries of individual agencies.
- develop a medium-term (five-year) national plan for ocean-related K–12 and informal education, working with federal, state, and nongovernmental education entities.
- coordinate and integrate all federal ocean-related education activities and investments.
- establish links among federal efforts, state and local education authorities, informal education facilities and programs, institutions of higher learning, and private-sector education initiatives, and strengthen existing partnerships.
- report to the National Ocean Council’s Committee on Ocean Science, Education, Technology, and Operations.

Recommendation 8–2
Congress should provide funding for Ocean.ED operations and program implementation as a line item in the National Oceanic and Atmospheric Administration (NOAA) budget, to be spent at the direction of the National Ocean Council (NOC). NOAA should develop a streamlined process for distributing Ocean.ED funds to other federal and nonfederal entities based on the NOC-approved plan.

Recommendation 8–3
The National Oceanic and Atmospheric Administration, National Science Foundation, Office of Naval Research, and National Aeronautics and Space Administration should strengthen their support of both formal and informal ocean-related education, including appropriate evaluations of these efforts.
In particular, these agencies should:
- develop, with assistance from Ocean.ED, a cooperative system of dedicated, sustained, multi-agency funding for formal and informal ocean education. This funding should be explicitly linked to the national ocean education plan.
- provide support for development and implementation of ocean-related education materials and activities with a requirement that evaluation mechanisms be included as a component of every program.

Recommendation 8–4
Ocean.ED should develop a framework for evaluating the effectiveness of ocean-related education programs, ocean-based K–12 professional development programs, best practices for incorporating ocean-based examples into K–12 education, and public education programs.

Recommendation 8–5
The National Ocean Council (NOC), working with the National Science Foundation, should place the Centers for Ocean Sciences Education Excellence (COSEE) within the NOC structure as a program to be organized and overseen through Ocean.ED. The NOC should also work to expand the COSEE program.
Expansion of COSEE should include:
- tripling the number of regional centers to twenty-one, with each center receiving at least $1.5 million a year for an initial five year period.
expanding the reach of each center beyond its immediate participants.

- identifying models for successful partnerships between scientists and K–12 teachers.
- devising strategies to incorporate the expertise of university science education specialists.
- implementing professional development programs for K–12 teachers and university research professors.

**Recommendation 8–6**

The National Sea Grant College Program should increase the proportion of its resources dedicated to ocean and coastal education.

**Recommendation 8–7**

Ocean.ED, working with state and local education authorities and the research community, should coordinate the development and adoption of ocean-related materials and examples that meet existing education standards.

Specifically, Ocean.ED should:

- assess existing ocean-based curricula offerings, highlighting exemplary materials that are aligned with national standards.
- promote the creation of companion materials to the National Science Education Standards that are based on ocean data and research findings (including social and economic fields).
- disseminate ocean-based examples and assessment questions that link to the concept standards in physical and life sciences, geography, history, and other topics and that demonstrate the value of oceans in teaching fundamental concepts.
- promote the development of case studies that stress the interconnected nature of the ocean, land, and atmosphere.

**Recommendation 8–8**

Ocean.ED, working with academic institutions and local school districts, should help establish more effective relationships between the research and education communities to expand professional development opportunities for teachers and teacher educators.

Specifically, Ocean.ED should:

- provide supplemental grants and other rewards to scientists who partner with teachers and teacher educators to include educational components in their research projects.
- establish a grants program for development and implementation of an enhanced core curriculum in science content that incorporates ocean concepts for pre-service teachers. Applicants should be required to demonstrate collaborations and partnerships among education, science, mathematics, and engineering faculty.

**Recommendation 8–9**

Ocean.ED should promote partnerships among government agencies, school districts, institutions of higher learning, aquariums, science centers, museums, and private marine laboratories to develop more opportunities for students to explore the marine environment, both through virtual means and hands-on field, laboratory, and at-sea experiences.

Ocean.ED should ensure that programs for students:

- include a broad range of options, from in-school modules, to accessible after-school activities, daylong field trips, and summer programs.
- acknowledge cultural differences and other aspects of human diversity to expose students and teachers from all cultures and backgrounds to ocean issues.
**Recommendation 8–10**
The National Oceanic and Atmospheric Administration, National Science Foundation, and Office of Naval Research should support colleges and universities in promoting introductory ocean and coastal science and engineering courses to expose a wider cross-section of students, including non-science majors, to these subjects. These agencies should support this effort by:

- providing small grants to assist in course development, equipment purchases, faculty support, and field experiences.
- fostering collaborations between institutions with graduate ocean programs and others with a primarily undergraduate population.

**Recommendation 8–11**
Ocean.ED should guide and promote the development of the nation’s ocean-related workforce. In particular, Ocean.ED should:

- promote student support, diversified educational opportunities, and investment in innovative approaches to graduate education that prepare students for a broad range of careers.
- encourage, with targeted federal support, graduate departments of ocean sciences and engineering to experiment with new or redesigned programs that emphasize cross-disciplinary courses of study.
- set targets for federal stipends for ocean-related education to be competitive with other disciplines.

**Recommendation 8–12**
The National Oceanic and Atmospheric Administration and the U.S. Department of Labor should establish a national ocean workforce database and compile an annual report for the National Ocean Council on trends in ocean-related human resource development and needs. This effort should include an information clearinghouse to facilitate career decisions, provide access to career guidance, and enable employers, guidance counselors, and others to develop effective strategies to attract students to ocean-related careers. Ocean.ED should organize an ocean workforce summit every five years to address the alignment of ocean education with workforce needs.

**Recommendation 8–13**
The National Oceanic and Atmospheric Administration (NOAA) should establish a national ocean education and training program, patterned after the National Institutes of Health model, within its Office of Education and Sustainable Development to provide diverse and innovative ocean-related education opportunities at the undergraduate, graduate, and postdoctoral levels. Specifically, NOAA should:

- offer students at the undergraduate level experiential learning opportunities in a range of marine fields through summer internships or similar mechanisms.
- support fellowships and traineeships at the graduate and postdoctoral levels that emphasize interdisciplinary approaches and real-world experiences outside the university setting, especially in areas critical to the agency’s mission.
- support professorships in fields of particular interest to NOAA.

**Recommendation 8–14**
The National Science Foundation’s Directorates for Geosciences, Biological Sciences, and Education and Human Resources should develop cooperative programs to provide diverse, multidisciplinary educational opportunities at the undergraduate, graduate, and postdoctoral levels in a range of ocean-related fields.
Recommendation 8–15
The Office of Naval Research (ONR) should reinvigorate its support of graduate education in ocean sciences and engineering. This could be accomplished, in part, by increasing the number of ocean-related awards made under ONR's National Defense Science and Engineering Graduate Fellowship Program.

Recommendation 8–16
The National Oceanic and Atmospheric Administration, National Science Foundation, Office of Naval Research, and National Aeronautics and Space Administration should encourage increased participation of traditionally underrepresented and underserved groups in the ocean-related workforce. Ocean.ED should coordinate among these agencies and institutions of higher learning. Specifically, Ocean.ED should:
- ensure that the appropriate mix of programs and opportunities exists to provide underrepresented and underserved groups ample access to and support for pursuing ocean-related graduate education, including opportunities at Minority Serving Institutions and other universities and oceanographic institutions.
- ensure that programs are established through a competitive process and evaluated for performance on an annual basis.

Recommendation 8–17
Ocean.ED, working with other appropriate entities, should promote existing mechanisms and establish new approaches for developing and delivering relevant, accessible information and outreach programs that enhance community education.
In particular, Ocean.ED should:
- work with ocean-related informal education initiatives to better engage underrepresented and underserved populations and communities by using mechanisms, materials, and language familiar to and accepted by them.
- work with informal education facilities to develop the capacity to quickly prepare and deliver new science-based materials and programs to the public and the media to capture immediate interest in noteworthy advances in ocean science.
- engage industry, the commercial sector, and the media in community education and stewardship programs.

Chapter 9: Managing Coasts and their Watersheds

Recommendation 9–1
Congress should reauthorize the Coastal Zone Management Act (CZMA) to strengthen the planning and coordination capabilities of coastal states and enable them to incorporate a coastal watershed focus and more effectively manage growth. Amendments should include requirements for resource assessments, the development of measurable goals and performance measures, improved program evaluations, incentives for good performance and disincentives for inaction, and expanded boundaries that include coastal watersheds.
Specifically, CZMA amendments should address the following issues:
- resource assessments—State coastal management programs should provide for comprehensive periodic assessments of the state's natural, cultural, and economic coastal resources. These assessments will be critical in the development of broader regional ecosystem assessments, as recommended in Chapter 5.
- goals—State coastal management programs should develop measurable goals based on coastal resource assessments that are consistent with national and regional goals. State coastal programs should work with local governments, watershed groups, nongovernmental organizations, and other regional entities, including regional ocean councils, to develop these goals.
• **performance measures**—State coastal management programs should develop performance measures to monitor their progress toward achieving national, regional, and state goals.

• **evaluations**—State coastal management programs should continue to undergo periodic performance evaluations by the National Oceanic and Atmospheric Administration. In addition to the existing evaluation criteria, the performance measures developed by state programs should also be reviewed. The public, representatives of watershed groups, and applicable federal program representatives should participate in these program evaluations.

• **incentives**—Existing incentives for state participation—federal funding and federal consistency authority—should remain, but a substantial portion of the federal funding received by each state should be based on performance. Incentives should be offered to reward exceptional accomplishments, and disincentives should be applied to state coastal management programs that are not making satisfactory progress in achieving program goals.

• **boundaries**—Coastal states should extend the landward side of their coastal zone boundaries to encompass coastal watersheds. Mechanisms should also be established for coordinating with watershed management groups outside of a state’s designated coastal zone boundary.

**Recommendation 9–2**

Congress should consolidate area-based coastal management programs in a strengthened National Oceanic and Atmospheric Administration (NOAA), capitalizing on the strengths of each program. At a minimum, this should include bringing together the Coastal Zone Management and National Marine Sanctuary programs and the National Estuarine Research Reserve System, currently administered by NOAA, and additional coastal programs administered by other agencies, including the National Estuary Program, the John H. Chafee Coastal Barrier Resources System, and the U.S. Fish and Wildlife Service Coastal Program.

**Recommendation 9–3**

The National Ocean Council should recommend changes to federal funding and infrastructure programs to discourage inappropriate growth in fragile or hazard-prone coastal areas and ensure consistency with national, regional, and state goals aimed at achieving economically and environmentally sustainable development.

**Recommendation 9–4**

Congress should amend the Coastal Zone Management Act, Clean Water Act, and other federal laws, where appropriate, to provide better financial, technical, and institutional support for watershed management initiatives. The National Ocean Council and regional ocean councils should enhance support for coastal watershed initiatives by coordinating agency programs, technical assistance, and funding and by overseeing development of an accessible clearinghouse of information on watershed best management practices.

Chapter 10: Guarding People and Property against Natural Hazards

**Recommendation 10–1**

The U.S. Army Corps of Engineers’ Civil Works Program, with guidance from the National Ocean Council, should ensure valid, peer-reviewed cost-benefit analyses of coastal projects, provide greater transparency to the public, enforce requirements for mitigating the impacts of coastal projects, and coordinate such projects with broader coastal planning efforts.
**Recommendation 10–2**

The National Ocean Council should establish a task force of appropriate federal agencies and state and local governments, with the Federal Emergency Management Agency in the lead, to improve the collection and use of hazards-related data. Under the oversight of the NOC’s Committee on Ocean Resource Management, the hazards-related data task force should develop a coordinated effort that includes the following functions:

- systematic collection, storage, analysis, and dissemination of data on post-disaster losses and the cost of mitigation efforts.
- development and transmittal to communities of the information and tools they need to understand the risks of hazards to their residents and their social, physical, economic, and environmental infrastructures.
- cooperation with the Federal Geographic Data Committee and state and local governments to achieve comprehensive, digitized, georeferenced mapping and identification of all natural hazards.
- development of adequate funding proposals for the National Flood Insurance Program map modernization initiative, including a high-priority effort to update maps for high-risk coastal communities.

**Recommendation 10–3**

The National Ocean Council should recommend changes in the National Flood Insurance Program (NFIP) to reduce incentives for development in high-hazard areas. Specifically, NFIP changes should:

- establish clear disincentives to building or rebuilding in coastal high-hazard zones by requiring property owners at risk of erosion to pay actuarially sound rates for insurance.
- enforce measures that reduce vulnerability to natural hazards, including assistance in retrofitting older structures and buyout programs for susceptible structures with repetitive-loss histories.
- create enforceable mechanisms to direct development away from undeveloped floodplains and erosion zones.

**Recommendation 10–4**

The Federal Emergency Management Agency (FEMA) should enhance technical assistance to state and local governments for developing or improving their hazard mitigation plans. The National Ocean Council should identify opportunities for conditioning federal hazards-related financial and infrastructure support on completion of FEMA-approved state and local hazards mitigation plans.

**Chapter 11: Conserving and Restoring Coastal Habitat**

**Recommendation 11–1**

Congress should amend the Coastal Zone Management Act to create a dedicated funding program for coastal and estuarine land conservation. In addition, a larger share of U.S. Department of Agriculture and other federal agency conservation programs should be directed to coastal and estuarine lands. To guide these programs, each state should identify priority coastal habitats and develop a plan for establishing partnerships among willing landowners for conservation purposes, with participation from federal agency, local government, nongovernmental, and private-sector partners.
Recommendation 11-2
The regional ocean councils, working with state coastal management programs and other governmental and nongovernmental entities, should assess regional needs and set goals and priorities for ocean and coastal habitat conservation and restoration efforts that are consistent with state and local goals. The National Ocean Council should develop national goals that are consistent with regional, state, and local goals, and should ensure coordination among all related federal activities.

Recommendation 11-3
The U.S. Department of the Interior, National Oceanic and Atmospheric Administration, U.S. Department of Agriculture, and U.S. Army Corps of Engineers should enhance their restoration science, monitoring, and assessment activities. Congress should amend relevant legislation to allow greater discretion in using a portion of federal habitat conservation and restoration funds for related research, monitoring, and assessments.

Recommendation 11-4
The U.S. Fish and Wildlife Service should complete, digitize, and periodically update the National Wetlands Inventory.

Recommendation 11-5
The National Ocean Council should coordinate development of a comprehensive wetlands protection framework that is linked to coastal habitat and watershed management efforts, and should make specific recommendations for the integration of the Clean Water Act Section 404 wetlands permitting process into that broader management approach.

Chapter 12: Managing Sediment and Shorelines

Recommendation 12-1
The National Ocean Council should develop a national strategy for managing sediment on a regional basis. The strategy should incorporate ecosystem-based principles, balancing ecological and economic considerations.

In addition, the strategy should:
- acknowledge adverse impacts on marine environments due to urban development, agriculture, dams, dredging, pollutant discharges, and other activities that affect sediment flows or quality.
- ensure involvement of port managers, coastal planners, land use planners, and other stakeholders in watershed planning.
- emphasize watershed management as a tool to address upstream land uses that affect sediment input to rivers and coastal waters.

Recommendation 12-2
Congress should direct the U.S. Army Corps of Engineers (USACE) to adopt regional and ecosystem-based management approaches in carrying out all of its sediment-related civil works missions and should modify USACE authorities and processes as necessary to achieve this goal.

Recommendation 12-3
The U.S. Army Corps of Engineers should ensure that its selection of the least-cost disposal option for dredging projects reflects a more accurate accounting of the full range of economic, environmental, and other relevant costs and benefits for options that reuse dredged material, as well as for other disposal methods.
Recommendation 12-4
The National Dredging Team should ensure vigorous and sustained implementation of the recommendations contained in its *Dredged Material Management: Action Agenda for the Next Decade*, moving toward more ecosystem-based approaches. Regional dredging teams, working with regional ocean councils, should establish sediment management programs that expand beyond single watersheds to larger regional ecosystems.

Recommendation 12-5
The U.S. Army Corps of Engineers, working with U.S. Department of the Interior agencies, the National Oceanic and Atmospheric Administration, and the U.S. Environmental Protection Agency, in consultation with state and local governments, should develop and implement a strategy for improved assessments, monitoring, research, and technology development to enhance sediment management.

Recommendation 12-6
Congress should modify its current authorization and funding processes to require the U.S. Army Corps of Engineers (USACE), or an appropriate third party, to monitor outcomes from past USACE projects and assess the cumulative, regional impacts of USACE activities within coastal watersheds and ecosystems. Such assessments should be peer-reviewed consistent with recommendations from the National Research Council.

Recommendation 12-7
The U.S. Environmental Protection Agency, working with other appropriate entities, including state and local governments, should build upon EPA’s 2002 draft contaminated sediments science plan to develop and conduct coordinated strategies for assessment, monitoring, and research to better understand how contaminated sediment is created and transported. The strategies should also develop technologies for better prevention, safer dredging or onsite treatment, and more effective post-recovery treatment of contaminated dredged material.

Chapter 13: Supporting Marine Commerce and Transportation

Recommendation 13-1
Congress should designate the U.S. Department of Transportation (DOT) as the lead federal agency for planning and oversight of the marine transportation system and DOT should submit regular reports to Congress on the condition and future needs of the system. The National Ocean Council should identify overlapping functions in other federal agencies and make recommendations concerning the advisability of transferring those functions to DOT.

Recommendation 13-2
Congress should codify the Interagency Committee for the Marine Transportation System and place it under the oversight of the National Ocean Council (NOC).
Under the oversight of the NOC’s Committee on Ocean Resource Management, the Interagency Committee for the Marine Transportation System should:
- be chaired by the U.S. Department of Transportation.
- improve coordination among all participants in the U.S. marine transportation system.
- promote the integration of marine transportation with other modes of transportation and with other ocean and coastal uses and activities.
- recommend strategies and plans for: better informing the public of the importance of marine commerce and transportation; devising alternate funding scenarios to meet short- and long-term demands on the marine transportation system; matching federal revenues derived from marine transportation with funding needs to maintain and improve the system; and delineating short- and long-term priorities.
**Recommendation 13-3**
The U.S. Department of Transportation should draft a new national freight transportation strategy to support continued growth of the nation’s economy and international and domestic trade. This strategy should improve the links between the marine transportation system and other components of the transportation infrastructure, including highways, railways, and airports. Based on the new strategy, investments of national transportation funds should be directed toward planning and implementation of intermodal projects of national significance.

**Recommendation 13-4**
The U.S. Department of Transportation should conduct a thorough analysis and assessment of the potential societal and economic benefits of increased short sea shipping.

**Recommendation 13-5**
The U.S. Department of Transportation (DOT), working with other appropriate entities, should establish a national data collection, research, and analysis program to provide a comprehensive picture of freight flows in the United States and to enhance the performance of the nation’s intermodal transportation system. DOT should periodically assess and prioritize the nation’s future needs for ports and intermodal transportation capacity to fulfill the needs of the nation’s expected future growth in marine commerce.

The freight information collection program should include:
- economic models that project trade and traffic growth and determine the impacts of growth on U.S. ports and waterways and the inland infrastructures connected to them.
- models and guides to identify bottlenecks and capacity shortfalls.
- consistent, nationally accepted definitions and protocols for measuring capacity.
- innovative trade and transportation data collection technology and research to fill critical data gaps.
- assessment of the social and economic ramifications of marine transportation investments as compared to other transportation investments.

**Recommendation 13-6**
The U.S. Department of Transportation (DOT) should incorporate emergency preparedness requirements in developing a national freight transportation strategy. Because this will require input from many agencies and stakeholders, DOT should work closely with the U.S. Department of Homeland Security, Federal Emergency Management Agency, National Oceanic and Atmospheric Administration, U.S. Environmental Protection Agency, ports, and marine industries.

Emergency preparedness planning should focus on:
- prevention of threats to national security and port operations.
- response and recovery practices, including assessments of available resources such as salvage and harbor clearance capacity and alternative port capacity.
- technological requirements for security screening, cargo movement and tracking, and traffic management.
- research and development needs related to innovative technologies that can minimize interruptions and security risks to port operations.
- identification of resources needed to implement prevention, response and recovery strategies for the nation's ports.
Chapter 14: Addressing Coastal Water Pollution

Recommendation 14–1
The U.S. Environmental Protection Agency (EPA), working with states, should require advanced nutrient removal for wastewater treatment plant discharges that contribute to degradation of nutrient-impaired waters as needed to attain water quality standards. EPA should also determine the extent of the impact of chemicals in wastewater from residential and industrial sources, including pharmaceuticals. In particular, EPA should:
- support research and demonstration projects for biological nutrient removal and other innovative advanced treatment processes to eliminate nitrogen and phosphorus from wastewater discharges.
- ensure that information about innovative advanced treatment processes and technologies is widely disseminated.
- support development of technologies to reduce concentrations of pharmaceuticals, personal care product ingredients, and other biologically active contaminants in wastewater treatment plant discharges.

Recommendation 14–2
The U.S. Environmental Protection Agency (EPA), working with states, should increase technical and financial assistance to help communities improve the permitting, design, installation, operation, and maintenance of septic systems and other on-site treatment facilities. State and local governments, with assistance from EPA, should adopt and enforce more effective building codes and zoning ordinances for septic systems and should improve public education about the benefits of regular maintenance.

Recommendation 14–3
The U.S. Environmental Protection Agency (EPA) and the U.S. Department of Agriculture (USDA) should support research on the removal of nutrients from animal wastes that may pollute water bodies and on the impact of pharmaceuticals and other contaminants on water quality. EPA and USDA should also develop improved best management practices that retain nutrients and pathogens from animal waste on agricultural lands. Where necessary to meet water quality standards, states should issue regulatory controls on concentrated animal feeding operations in addition to those required by EPA.

Recommendation 14–4
The U.S. Environmental Protection Agency (EPA), working with state and local governments and other stakeholders, should develop and periodically review a comprehensive long-term plan to maintain and upgrade the nation’s aging and inadequate wastewater and drinking water infrastructure, anticipating demands for increased capacity to serve growing populations, correction of sewer overflows, and more stringent treatment in the coming decades. To implement this plan, Congress should significantly increase the Clean Water and Drinking Water State Revolving Funds.

Recommendation 14–5
The U.S. Environmental Protection Agency, working with states, should experiment with tradable credits for nutrients and sediment as a water pollution management tool and evaluate the ongoing effectiveness of such programs in reducing water pollution.

Recommendation 14–6
The U.S. Environmental Protection Agency, working with states, should modernize the National Pollutant Discharge Elimination System's monitoring and information management system and strengthen the program's enforcement to achieve greater compliance with permits.
**Recommendation 14–7**
The U.S. Department of Agriculture (USDA) should align its conservation programs and funding with other programs aimed at reducing nonpoint source pollution, such as those of the U.S. Environmental Protection Agency and the National Oceanic and Atmospheric Administration. In particular, USDA's Natural Resources Conservation Service should:
- require that its state conservationists coordinate with representatives of federal and state water quality agencies and state coastal management agencies, and participate in watershed and coastal management planning processes, to ensure that funding for agricultural conservation programs complements and advances other federal and state management programs.
- provide enhanced technical assistance in the field to better support growing agricultural conservation programs.

**Recommendation 14–8**
The National Ocean Council (NOC), working with states, should establish reduction of nonpoint source pollution in coastal watersheds as a national goal, with a particular focus on impaired watersheds. The NOC should then set specific, measurable objectives to meet human health- and ecosystem-based water quality standards. The NOC should ensure that all federal nonpoint source pollution programs are coordinated to attain those objectives.

**Recommendation 14–9**
The National Ocean Council should strengthen efforts to address nonpoint source pollution by evaluating the nonpoint source pollution control programs established under Section 6217 of the Coastal Zone Act Reauthorization Amendments and under Section 319 of the Clean Water Act and making recommendations to Congress for improvements to these programs, including their possible consolidation. Improvements to the programs should:
- require enforceable best management practices and other management measures throughout the United States, with increased federal support for states to develop and implement those practices and measures.
- eliminate counterproductive financial disincentives.
- enhance cooperation and coordination between federal and state water quality and coastal management agencies.

**Recommendation 14–10**
To ensure protection of coastal resources nationwide, Congress should provide authority under the Clean Water Act and other applicable laws for federal agencies to establish enforceable management measures for nonpoint sources of pollution and impose financial disincentives related to programs that result in water quality degradation if a state persistently fails to make meaningful progress toward meeting water quality standards on its own.

**Recommendation 14–11**
The U.S. Environmental Protection Agency, the National Oceanic and Atmospheric Administration, and other appropriate entities should increase assistance and outreach to provide decision makers with the knowledge and tools needed to make sound land use decisions that protect coastal water quality. State and local governments should adopt or revise existing codes and ordinances to require land use planning and decision making to carefully consider the individual and cumulative impacts of development on water quality, including effects on stormwater runoff.
Recommendation 14–12
The U.S. Environmental Protection Agency (EPA), working with state and local governments, should strengthen implementation of the National Pollutant Discharge Elimination System Phase I and II stormwater programs.

Improvements should include:
- local codes or ordinances that are designed to achieve the management goals for a particular watershed and require use of EPA-approved best management practices.
- monitoring to determine whether goals and state water quality standards are being met and to identify ongoing problems.
- an adaptive management approach to ensure that efforts are effective and that best management practices are modified as needed.
- improved public education.
- increased enforcement of legal requirements and personnel sufficient to implement stormwater management programs.

Recommendation 14–13
The U.S. Environmental Protection Agency, working with states, should develop and implement national and regional strategies to reduce the sources and impacts of atmospheric deposition to water bodies, building upon plans such as the EPA Air-Water Interface Work Plan.

Recommendation 14–14
The United States should work with other nations to develop and implement international solutions to better address the sources and impacts of transboundary atmospheric deposition, and to initiate needed research programs.

Chapter 15: Creating a National Monitoring Network

Recommendation 15–1
The National Oceanic and Atmospheric Administration, U.S. Geological Survey, and U.S. Environmental Protection Agency, working with states and other appropriate entities, should develop a national monitoring network that coordinates and expands existing efforts, including monitoring of atmospheric deposition. The network should be built on a federally funded backbone of critical stations and measurements to assess long-term trends and conditions, with additional stations or measurements as needed to address regional characteristics or problems.

Recommendation 15–2
The National Oceanic and Atmospheric Administration should ensure that the national monitoring network includes adequate coverage in both coastal areas and the upland areas that affect them, and that the network is linked to the Integrated Ocean Observing System, to be incorporated eventually into a comprehensive Earth observing system.

Recommendation 15–3
The National Oceanic and Atmospheric Administration, U.S. Geological Survey, and U.S. Environmental Protection Agency, working with states and other appropriate entities, should ensure that the national monitoring network has clear goals, specifies core variables and an appropriate sampling framework, and is periodically reviewed and updated. These agencies should also work with the regional ocean information programs to determine regional and local information needs.

Specifically, the national monitoring network should include the following elements:
- clearly defined goals that fulfill user needs and provide measures of management success.
- a core set of variables to be measured at all sites, with regional flexibility to measure additional variables where needed.
• an overall system design that determines where, how, and when to monitor and includes a mix of time and space scales, probabilistic and fixed stations, and stressor- and effects-oriented measurements.
• technical coordination that establishes standard procedures and techniques.
• periodic review of the monitoring network, with modifications as necessary to ensure that useful goals are being met in a cost-effective way.

Chapter 16: Limiting Vessel Pollution and Improving Vessel Safety

Recommendation 16–1
The U.S. Coast Guard should encourage industry partners engaged in vessel management to develop stronger voluntary measures, particularly those that reward crew member contributions, as part of a continuing, long-term effort to build a culture of safety, security, and environmental compliance in routine vessel operations.

Recommendation 16–2
The U.S. Coast Guard should carry out sustained and strengthened performance-based inspections as a key component of vigorous enforcement of marine safety and environmental protection laws. Coast Guard activities in these areas should be coordinated with new demands for vessel security inspections and other security requirements.

Recommendation 16–3
The United States should work with other nations to accelerate efforts at the International Maritime Organization to enhance flag state oversight and enforcement. These efforts should include implementation of:
• a code outlining flag state responsibilities and obligations.
• a voluntary audit regime, to be followed by adoption of a mandatory external audit regime for evaluating flag state performance.
• measures to ensure that responsible organizations, acting on behalf of flag states, meet established performance standards.
• increased technical assistance, where appropriate, for flag states that participate in self-assessments and audits.

Recommendation 16–4
The U.S. Coast Guard, working with other nations, should establish a permanent mechanism to strengthen and harmonize port state control programs under the auspices of the International Maritime Organization. To assist port states, the Coast Guard should also support efforts to enhance an international vessel information database.

Recommendation 16–5
Congress should establish a new statutory regime for managing wastewater discharges from large passenger vessels that applies throughout the United States. This regime should include:
• uniform discharge standards and waste management procedures.
• thorough recordkeeping requirements to track the waste management process.
• required sampling, testing, and monitoring by vessel operators using uniform protocols.
• flexibility and incentives to encourage industry investment in innovative treatment technologies.
**Recommendation 16–6**
The U.S. Environmental Protection Agency should revise the Clean Water Act marine sanitation device (MSD) regulations to require that new MSDs meet significantly more stringent pathogen standards. Manufacturers should be required to warranty that new MSDs will meet these standards for a specific time period.

**Recommendation 16–7**
The U.S. Environmental Protection Agency (EPA) should conduct a thorough assessment, including field inspections, to verify the availability and accessibility of functioning pumpout facilities in existing no-discharge zones and prior to the approval of any new no-discharge zones. The U.S. Fish and Wildlife Service and EPA, working with states, should coordinate their efforts to increase the availability of adequate, accessible, and operational pumpout facilities, particularly in no discharge zones.

**Recommendation 16–8**
The United States should ratify MARPOL Annex VI and work for International Maritime Organization (IMO) adoption of even stricter air emission standards that reflect advances in marine engine technology, availability of cleaner fuels, and improved operational practices. The U.S. Environmental Protection Agency, working with other appropriate entities, should use Annex VI criteria and guidelines to evaluate U.S. ocean and coastal areas with impaired air quality, and seek IMO designation of appropriate areas as Sulfur Oxide Emission Control Areas.

**Recommendation 16–9**
The U.S. Environmental Protection Agency, working with other appropriate entities, should investigate and implement incentive-based measures that could lead to measurable voluntary reductions in vessel air emissions.

**Recommendation 16–10**
The U.S. Department of Transportation, U.S. Coast Guard, U.S. Environmental Protection Agency, and Minerals Management Service, in consultation with states, should conduct a risk-based analysis of all oil transportation systems that identifies and prioritizes sources of greatest risk. Based on that analysis, the agencies should develop a comprehensive, long-term plan for action to reduce overall spill risks and the threat of significant spills.

**Recommendation 16–11**
The U.S. Coast Guard, working with the spill response and marine salvage communities, should develop comprehensive policy guidance and contingency plans for places of refuge in the United States. The plans should clearly delineate decision-making authorities and responsibilities and provide for coordinated and timely assessments and responses to vessels seeking a place of refuge.

**Recommendation 16–12**
The National Ocean Council should coordinate federal agency efforts to reduce the release of air and oil pollutants from small vessel operations through a combination of outreach and education, development of incentives to encourage early replacement of older two-stroke engines, and support for innovative pilot programs at the federal, state, and local levels.

**Recommendation 16–13**
The U.S. Environmental Protection Agency, National Oceanic and Atmospheric Administration, U.S. Coast Guard, and other appropriate entities should support a vigorous, coordinated research program on the fates and impacts of vessel pollution. Research results should be used to guide management priorities, develop new control technologies, determine best management practices, and create more effective regulatory regimes as needed.
Recommendation 16-14
In developing and implementing maritime domain awareness initiatives, the U.S. Coast Guard should work with the National Ocean Council to ensure that, in addition to their other intended purposes, these initiatives provide effective support for ocean and coastal management needs.

Chapter 17: Preventing the Spread of Invasive Species

Recommendation 17-1
The U.S. Coast Guard's national ballast water management program should include a number of important elements: uniform, mandatory national standards which incorporate sound science in the development of biologically meaningful and enforceable ballast water treatment; a process for revising the standard to incorporate new technologies; full consultation with the U.S. Environmental Protection Agency, both during and after the program's development; and an interagency review, through the National Ocean Council, of the policy for ships that declare they have no ballast on board.

Recommendation 17-2
The National Ocean Council should commission a credible, independent, scientific review of existing U.S. ballast water management research and demonstration programs and make recommendations for improvements.
The review should consider the following issues:
- how federally funded research and demonstration programs can best promote technology development, support on-board ship testing, and move technologies from research to commercial use.
- what the best role is for industry and how industry can be engaged in onboard testing of experimental ballast water management technologies.
- what kind of peer review process is needed for scientific oversight of technology development, selection of demonstration projects, and testing of experimental treatment systems.
- what is an adequate funding level for a successful ballast water research and demonstration program.

Recommendation 17-3
The U.S. Departments of Agriculture, Commerce, the Interior, and Homeland Security should more actively employ existing legal authorities to prohibit imports of known or potentially invasive species. The National Ocean Council should recommend any changes to such legal authorities that might result in more effective prevention efforts.

Recommendation 17-4
The National Ocean Council, working with the Aquatic Nuisance Species Task Force and the National Invasive Species Council, should coordinate public education and outreach efforts on aquatic invasive species, with the aim of increasing public awareness about the importance of prevention.
The education and outreach effort should be pursued on several fronts:
- connect local, regional, and national outreach and education efforts, including recommendations from the U.S. Invasive Species Management Plan and programs initiated by industries that deal with non-native species.
- provide the public, importers and sellers, pet store and restaurant owners, divers, and others with information about the harm caused by invasive species and safer methods of shipping, owning, and disposing of non-native species.
- require the aquaculture, horticulture, pet, and aquarium industries to clearly inform customers of the potential hazards of releasing non-native species.
**Recommendation 17-5**
The National Invasive Species Council and the Aquatic Nuisance Species Task Force, working with other appropriate entities, should establish and implement a national plan for early detection of invasive species and a well-publicized system for prompt notification and rapid response.
The plan should:
- provide risk assessments for potentially invasive species, including possible pathways of introduction.
- conduct a comprehensive national biological survey and monitoring program for early detection, building upon recent progress in this area by academia, the U.S. Geological Survey, the National Oceanic and Atmospheric Administration, and the U.S. Environmental Protection Agency.
- determine the threshold needed to trigger a rapid response and develop environmentally sound rapid-response, eradication, and control actions.
- designate resources for implementing surveys and eradication programs.
- develop partnerships among government and industry to fund and implement response actions.

**Recommendation 17-6**
The National Ocean Council (NOC) should review and streamline the current proliferation of programs for managing aquatic invasive species in marine environments, and should coordinate federal, regional, and state efforts. Consolidated plans should be implemented to develop risk assessment and management approaches for intentional and unintentional species introductions that minimize the potential of invasions at the lowest cost.
Specifically, the NOC should:
- review the effectiveness of existing programs and legal authorities and clarify the lines of responsibility and enforcement authority, including responsibility for intentional introductions of non-native species.
- develop long-term goals and measures for evaluating effective performance.
- estimate funding needs to prevent the introduction of invasive species, including support for regional and state programs.
- determine whether, in the long term, a single agency should be charged with preventing the entry of, monitoring, and containing invasive species in coastal and marine waters.

**Recommendation 17-7**
The United States should take a leading role in the global effort to control the spread of aquatic invasive species by working internationally to develop treaties, agreements, and policies to minimize the introduction and establishment of such species.

**Recommendation 17-8**
The National Ocean Council should coordinate the development and implementation of an interagency plan for research and monitoring to understand and prevent the spread of aquatic invasive species. The results should be used to improve management decisions and avoid future economic losses.
New research and monitoring efforts should focus on:
- gathering baseline taxonomic information and strengthening taxonomic skills; performing quantitative assessments of ecosystems; identifying invasive pathogens and vectors of introduction; and determining how invasive species disrupt ecosystem functions.
- understanding the human dimensions behind species introductions, including human behavior, decision making, and economics.
- developing new options for minimizing invasions, including innovative technologies, and translating these findings into practical policy options for decision makers.
Chapter 18: Reducing Marine Debris

**Recommendation 18-1**
The National Oceanic and Atmospheric Administration should establish a marine debris management program that expands on and complements the U.S. Environmental Protection Agency's program in this area. The NOAA program should be closely coordinated with EPA's activities, as well as with the significant efforts conducted by private citizens, state, local, and nongovernmental organizations.

**Recommendation 18-2**
The National Oceanic and Atmospheric Administration and U.S. Environmental Protection Agency should coordinate and implement expanded marine debris control efforts, including: enforcement of existing laws; public outreach and education; partnerships with local governments, community groups, and industry; monitoring and identification; and research.

**Recommendation 18-3**
The National Ocean Council (NOC) should re-establish an interagency marine debris committee, co-chaired by the National Oceanic and Atmospheric Administration and U.S. Environmental Protection Agency, and placed under the oversight of the NOC's Committee on Ocean Resource Management.

**Recommendation 18-4**
The U.S. Department of State and National Oceanic and Atmospheric Administration, working with the United Nations Food and Agriculture Organization and other appropriate entities, should develop a detailed plan of action to address derelict fishing gear around the world, to be implemented within large multi-national regions.

**Recommendation 18-5**
The National Oceanic and Atmospheric Administration should work with all interested parties, governmental and private, to implement incentives or other effective programs for prevention, removal, and safe disposal of derelict fishing gear.

**Recommendation 18-6**
The U.S. Department of State should increase efforts internationally to ensure that there are adequate port reception facilities available for disposal of garbage from ships, particularly in Special Areas designated under Annex V of the International Convention for the Prevention of Pollution from Ships.

Chapter 19: Achieving Sustainable Fisheries

**Recommendation 19-1**
Congress should amend the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) and related statutes to require Regional Fishery Management Councils (RFMCs) and interstate fisheries commissions to rely on their Scientific and Statistical Committees (SSCs), incorporating SSC findings and advice into the decision-making process. In keeping with this stronger role, SSC members should meet more stringent scientific and conflict of interest requirements, and receive compensation.

To ensure a strengthened SSC, MSFCMA amendments should require the following:
- Each RFMC should nominate candidates for service on its SSC. Nominees should be scientists with strong technical credentials and experience, selected from federal, state, or tribal governments or academia. Private sector scientists who are technically qualified may also be nominated if they meet the conflict of interest requirements, although the SSC should not be constituted as a representational body.
• the National Oceanic and Atmospheric Administration (NOAA) should evaluate the qualifications and potential conflicts of interest of SSC nominees through an independent review process designed by a credible, scientific organization. Ultimately, SSC appointments should be approved by the NOAA Administrator.
• SSC members should serve for fixed terms to allow for rotation and addition of new members over time.
• like RFMC members, participants in the SSC (or their home institutions) should be compensated for time spent on RFMC business.

Recommendation 19–2
Scientific and Statistical Committees (SSCs) should supply Regional Fishery Management Councils with the scientific advice necessary to make fishery management decisions. Such information could include reports on stock status and health, socioeconomic impacts of management measures, sustainability of fishing practices, and habitat status. In particular, the SSCs should determine allowable biological catch based on the best scientific information available.

Recommendation 19–3
Each Regional Fishery Management Council (RFMC) should set harvest limits at or below the allowable biological catch determined by its Scientific and Statistical Committee. The RFMCs should begin immediately to follow this practice, which should be codified by Congress in amendments to the Magnuson–Stevens Fishery Conservation and Management Act.

Recommendation 19–4
The National Marine Fisheries Service, working with the Regional Fishery Management Councils and the interstate fisheries commissions, should develop a process for independent review of the scientific information relied on by Scientific and Statistical Committees. The process should include three distinct procedures:
• a standard annual review by regional scientists to certify that the correct data and models are being used.
• an enhanced review to evaluate the models and assessment procedures. To ensure that these reviews are independent, a significant proportion of the reviewers should come from outside the region and be selected by a group such as the Center for Independent Experts. These types of reviews should be conducted on a three- to five-year cycle, or as needed, to help ensure that the latest methods and approaches are being used.
• an expedited review to be used when results are extremely controversial or when the normal review process would be too slow. In these cases, all reviewers should be selected by a group such as the Center for Independent Experts.

Recommendation 19–5
Each Regional Fishery Management Council should set a deadline for its Scientific and Statistical Committee (SSC) to determine allowable biological catch. If the SSC does not meet that deadline, the National Marine Fisheries Service Regional Science Director should set the allowable biological catch for that fishery.

Recommendation 19–6
Once allowable biological catch is determined, whether by the Scientific and Statistical Committee or the National Marine Fisheries Service (NMFS) Regional Science Director, the Regional Fishery Management Council should propose a fishery management plan in time for adequate review and approval by NMFS. If the plan is not in place in a timely fashion, NMFS should suspend all fishing on that stock until it is able to review the adequacy of the management plan.
**Recommendation 19-7**
The Regional Fishery Management Councils and their Scientific and Statistical Committees should develop an annual, prioritized list of management information needs and provide it to the National Marine Fisheries Service (NMFS). NMFS should incorporate these needs to the maximum extent possible in designing its research, analysis, and data collection programs.

**Recommendation 19-8**
The National Marine Fisheries Service (NMFS), working with states and interstate fisheries commissions, should require that all saltwater anglers obtain licenses to improve in-season data collection on recreational fishing. NMFS should review existing saltwater angler licensing programs to determine which approaches best facilitate the collection of data. Based on this review, existing programs should be modified as needed and used wherever possible, developing new programs only if necessary. Priority should be given to fisheries in which recreational fishing is responsible for a large part of the catch, or in which recreational fishermen regularly exceed their allocated quota.

**Recommendation 19-9**
The National Oceanic and Atmospheric Administration (NOAA) should create an expanded, regionally-based cooperative research program. The program would fund collaborative projects between scientists and commercial, tribal, and recreational fishermen. NOAA should develop a process for external evaluation and ranking of all cooperative research proposals to ensure the most worthwhile projects are funded, the most capable performers are undertaking the research, and the information produced is both scientifically credible and useful to managers.

**Recommendation 19-10**
Congress should develop new statutory authority, similar to the Atlantic Coastal Fisheries Cooperative Management Act, to support and empower the Gulf States and Pacific States Fisheries Management Commissions. All interstate management plans should adhere to the national standards in the Magnuson-Stevens Fishery Conservation and Management Act, and the federal guidelines implementing these standards. States should participate in the development of the guidelines to ensure they are applicable to interstate plans.

**Recommendation 19-11**
Where a fish stock crosses administrative boundaries, the National Oceanic and Atmospheric Administration should ensure that a single state, Regional Fishery Management Council (RFMC), interstate marine fisheries commission, or NOAA itself is designated as the lead authority. In general:
- for interjurisdictional fisheries that occur primarily in state waters, the state (if only one state is involved), or the relevant interstate fisheries commission, should take the lead within both state and federal waters.
- for fisheries that involve two or more RFMCs, NOAA should designate the lead.
- for fisheries that have substantial activities in both state and federal waters, the relevant authorities should determine a lead; if they are unable to agree within a reasonable time period (not more than six months), NOAA should designate the lead.
- jurisdiction for highly migratory species should remain in its current configuration.
- any other disputes regarding jurisdiction should be resolved by NOAA.
**Recommendation 19–12**
Congress should amend the Magnuson-Stevens Fishery Conservation and Management Act to require governors to submit a broad slate of candidates for each vacancy of an appointed Regional Fishery Management Council seat. The slate should include at least two representatives each from the commercial fishing industry, the recreational fishing sector, and the general public.

**Recommendation 19–13**
Congress should give the Administrator of the National Oceanic and Atmospheric Administration responsibility for appointing Regional Fishery Management Council (RFMC) members, with the goal of creating RFMCs that are knowledgeable, fair, and reflect a broad range of interests.

**Recommendation 19–14**
Congress should amend the Magnuson-Stevens Fishery Conservation and Management Act to require that all newly appointed Regional Fishery Management Council (RFMC) members complete a training course within six months of their appointment. The National Marine Fisheries Service should contract with an external organization to develop and implement this training course. After six months, a new member who has not completed the training should continue to participate in RFMC meetings, but should not be allowed to vote.

The training course should:
- be open to current RFMC members and other participants in the process as space permits.
- cover a variety of topics including: fishery science and basic stock assessment methods; social science and fishery economics; tribal treaty rights; the legal requirements of the Magnuson-Stevens Fishery Conservation and Management Act, the National Environmental Policy Act, the Administrative Procedures Act, and other relevant laws or regulations; conflict of interest policies for RFMC members; and the public process involved in developing fishery management plans.

**Recommendation 19–15**
Congress should amend the Magnuson–Stevens Fishery Conservation and Management Act to affirm that fishery managers are authorized to institute dedicated access privileges. Congress should direct the National Marine Fisheries Service to issue national guidelines for dedicated access privileges that allow for regional flexibility in implementation. Every federal, interstate, and state fishery management entity should consider the potential benefits of adopting such programs.

At a minimum, the national guidelines should require dedicated access programs to:
- specify the biological, social, and economic goals of the plan; recipient groups designated for the initial quota shares; and data collection protocols.
- provide for periodic reviews of the plan to determine progress in meeting goals.
- assign quota shares for a limited period of time to reduce confusion concerning public ownership of living marine resources, allow managers flexibility to manage fisheries adaptively, and provide stability to fishermen for investment decisions.
- mandate fees for exclusive access based on a percentage of quota shares held. These user fees should be used to support ecosystem-based management. Fee waivers, reductions, or phase-in schedules should be allowed until a fishery is declared recovered or fishermen’s profits increase.
- include measures, such as community-based quota shares or quota share ownership caps, to lessen the potential harm to fishing communities during the transition to dedicated access privileges.
- be adopted only after adequate public discussion and close consultation with all affected stakeholders, to ensure community acceptance of a dedicated access plan prior to final Regional Fishery Management Council approval.
**Recommendation 19–16**

Congress should repeal all programs that encourage overcapitalization of fishing fleets, including the Fisheries Finance Program (formerly the Fishing Vessel Obligation Guarantee Program) and those sections of the Capital Construction Fund that apply to fisheries. The National Oceanic and Atmospheric Administration (NOAA) should take appropriate steps to permanently reduce fishing capacity to sustainable levels.

The following actions will assist in reducing overcapitalization in fisheries:
- to the maximum extent practicable, capacity reduction programs should be funded by those who profit from them—the fishermen remaining in the fishery.
- federal contributions to capacity reduction programs should only be made where additional effort is prohibited from entering the fishery. The highest priority for public funding of capacity reduction should be given to fisheries that grant dedicated access privileges to participants.
- NOAA should monitor capacity reduction programs to determine whether they are meeting their objectives and to ensure that vessels removed from U.S. fisheries do not contribute to overcapitalization in other nations.
- fishermen should be allowed to transfer existing Capital Construction Fund accounts into Individual Retirement Accounts or other appropriate financial instruments that do not promote overcapitalization.

**Recommendation 19–17**

The National Marine Fisheries Service should expand its use of Joint Enforcement Agreements to implement cooperative fisheries enforcement programs with state agencies. The U.S. Coast Guard should also be included as an important participant in such agreements.

**Recommendation 19–18**

The National Marine Fisheries Service and the U.S. Coast Guard should strengthen cooperative enforcement efforts at the national level by developing a unified strategic plan for fishery enforcement that includes significantly increased joint training, and at the regional and local levels, by developing a stronger and more consistent process for sharing information and coordinating enforcement.

**Recommendation 19–19**

The National Marine Fisheries Service (NMFS), working with the Regional Fishery Management Councils (RFMCs), the U.S. Coast Guard, and other appropriate entities, should maximize the use of the Vessel Monitoring System (VMS) for fishery-related activities. VMS with two-way communication capability and other features that assist personnel in monitoring and responding to potential violations should be required over time for all commercial fishing vessels receiving permits under federal fishery plans, including party and charter boats that carry recreational fishermen. NMFS and RFMCs, working with state representatives, should also identify state fisheries that could significantly benefit from VMS implementation.

**Recommendation 19–20**

The U.S. Coast Guard should manage the integration of a fishery Vessel Monitoring System (VMS) database into the larger maritime operations database and should work with the National Marine Fisheries Service to ensure effective use of VMS data for monitoring and enforcement.
Recommendation 19–21
The National Marine Fisheries Service (NMFS) should change the designation of essential fish habitat from a species-by-species to a multispecies approach and, ultimately, to an ecosystem-based approach. The approach should draw upon existing efforts to identify important habitats and locate optimum-sized areas to protect vulnerable life-history stages of commercially and recreationally important species. NMFS should work with other management entities to protect essential fish habitat when such areas fall outside their jurisdiction.
This effort should include:
- well-documented, science-based analytical methods.
- consideration of ecologically valuable species that are not necessarily commercially important.
- an extensive research and development program to refine existing analytical methods and develop additional means to identify habitats critical to sustainability and biodiversity goals.

Recommendation 19–22
The National Marine Fisheries Service (NMFS), Regional Fishery Management Councils, states, and interstate fisheries commissions, should develop regional bycatch reduction plans that address the broad ecosystem impacts of bycatch for areas under their jurisdiction. Implementation of these plans will require NMFS to collect data on bycatch of all species captured by commercial and recreational fishermen, not only of commercially important species. The selective use of observers should remain an important component of these efforts.

Recommendation 19–23
The National Marine Fisheries Service (NMFS) should expand its program in conservation engineering to help reduce the impacts of fishing on ecosystems. The program should give high priority to finding ways to reduce bycatch in fisheries that interact with endangered species. As gear and fishing methods are shown to be effective, NMFS should promote their rapid implementation in U.S. fisheries and work with the U.S. Department of State to promote their international adoption.

Recommendation 19–24
The U.S. Department of State, working with other appropriate entities, should encourage all countries to ratify the Fish Stocks Agreement and the United Nations Food and Agriculture Organization’s Compliance Agreement. In particular, the United States should condition other nations’ access to fishing resources within the U.S. exclusive economic zone on their ratification of these agreements. The United States and other signatory nations should also develop additional incentives to encourage all nations to ratify and enforce these agreements.

Recommendation 19–25
The U.S. Department of State, working with the National Oceanic and Atmospheric Administration, should review and update regional and bilateral fishery agreements to which the United States is a party, to ensure full incorporation of the latest science and harmonize those agreements with the Fish Stocks Agreement. The United States should fulfill existing international fishery management obligations, including full funding of U.S. commitments.

Recommendation 19–26
The National Oceanic and Atmospheric Administration, working with the U.S. Fish and Wildlife Service and U.S. Department of State, should design a national plan of action for the United States that implements, and is consistent with, the International Plans of Action adopted by the United Nations Food and Agriculture Organization and its 1995 Code of Conduct for Responsible Fisheries. This national plan should stress the importance of reducing bycatch of endangered species and marine mammals.
**Recommendation 19-27**
The National Ocean Council (NOC) should initiate a discussion on effective international implementation of the United Nations Food and Agriculture Organization’s Code of Conduct for Responsible Fisheries and other Plans of Action.

In particular, the NOC’s international committee should suggest methods to encourage nations to:
- join relevant regional fishery management organizations.
- implement and enforce regional agreements to which they are bound.
- collect and report the data necessary to manage fish stocks sustainably and to reduce fishery impacts on habitats and protected species.
- reduce or eliminate illegal, unreported, and unregulated fishing by ships flying their flag.
- reduce fishing fleet capacity, particularly on the high seas.
- reduce bycatch of non-targeted species, in particular endangered populations such as sea turtles and marine mammals, via the use of innovative gear and management methods such as onboard observer programs.

**Chapter 20: Protecting Marine Mammals and Endangered Marine Species**

**Recommendation 20-1**
Congress should amend the Marine Mammal Protection Act to require the Marine Mammal Commission to coordinate with all the relevant federal agencies through the National Ocean Council (NOC), while remaining independent. The NOC should determine whether there is a need for similar oversight bodies for other marine animals whose populations are at risk, such as sea turtles.

**Recommendation 20-2**
Congress should amend the Marine Mammal Protection Act to place the protection of all marine mammals within the jurisdiction of the National Oceanic and Atmospheric Administration.

**Recommendation 20-3**
The National Marine Fisheries Service and U.S. Fish and Wildlife Service, with guidance from the National Ocean Council, should significantly improve their coordination with respect to the implementation of the Endangered Species Act, particularly for anadromous species and sea turtles, and in circumstances where land-based activities have significant impacts on marine species.

**Recommendation 20-4**
The U.S. Fish and Wildlife Service and National Oceanic and Atmospheric Administration should expand their cooperative agreements with states under Section 6 of the ESA, including enhanced research, management, monitoring, and public information.

**Recommendation 20-5**
Congress should amend the Marine Mammal Protection Act to require the National Oceanic and Atmospheric Administration to more clearly specify categories of activities that are allowed without authorization, those that require authorization, and those that are prohibited.

**Recommendation 20-6**
Congress should amend the Marine Mammal Protection Act to revise the definition of harassment to cover only activities that meaningfully disrupt behaviors that are significant to the survival and reproduction of marine mammals.
**Recommendation 20–7**

The National Oceanic and Atmospheric Administration (NOAA) should implement programmatic permitting for activities that affect marine mammals, wherever possible. Case-by-case permitting, which is more resource intensive, should be used for activities that do not fit within any programmatic category or when circumstances indicate a greater likelihood of harm to marine animals. The National Ocean Council (NOC) should create an interagency team to recommend activities appropriate for programmatic permitting, those that are inappropriate, and those that are potentially appropriate pending additional scientific information.

To carry this out:

- the interagency team, under the oversight of the NOC's Committee on Ocean Resource Management, should include representatives from NOAA, the National Science Foundation, U.S. Army Corps of Engineers, Minerals Management Service, and U.S. Navy, with input from the Marine Mammal Commission.
- programmatic permits should be subject to periodic review, and remain valid for a limited time to ensure that the best available science can be incorporated into permit requirements.
- enforcement efforts should be strengthened and the adequacy of penalties reviewed.

**Recommendation 20–8**

The National Oceanic and Atmospheric Administration and U.S. Department of the Interior agencies should develop an expanded program, coordinated through the National Ocean Council, to examine and mitigate the effects of human activities on marine mammals and endangered species.

The program should focus on two areas:

- research, monitoring, and assessment to better understand the basic biology, physiology, life history, and population dynamics of marine mammals, sea turtles, and other endangered or vulnerable marine species and to understand how disease, contaminants, harmful algal blooms, human activities, and other stressors may impact these animals. An important goal will be to enhance the capability to respond quickly to strandings and unusual mortality events of marine mammals and sea turtles.
- technology and engineering to eliminate or mitigate human impacts on marine mammals, sea turtles, and other endangered species.

**Recommendation 20–9**

The National Science Foundation, National Oceanic and Atmospheric Administration, U.S. Geological Survey, and Minerals Management Service should expand research on ocean acoustics and the potential impacts of noise on marine mammals. These additional sources of support are important to decrease the reliance on U.S. Navy research in this area. The research programs should be complementary and well coordinated, examining a range of issues relating to noise generated by scientific, commercial, and operational activities.

**Recommendation 20–10**

The U.S. Department of State, working with the National Oceanic and Atmospheric Administration and the U.S. Department of the Interior, should continue to actively pursue efforts to reduce the impacts of human activities on marine species at risk in foreign and international waters.
Chapter 21: Preserving Coral Reefs and Other Coral Communities

Recommendation 21-1
Congress should establish a Coral Protection and Management Act that enhances research, protection, management, and restoration of coral ecosystems. The new legislation should include the following elements:

• mapping, monitoring, assessment, and research programs to fill critical information gaps, to be carried out primarily through the National Oceanic and Atmospheric Administration and the U.S. Coral Reef Task Force in partnership with the academic research community.

• increased protections for vulnerable coral reefs, including the use of marine protected areas.

• liability provisions for damages to coral reefs, similar to those in the National Marine Sanctuaries Act, but with greater flexibility to use funds in a manner that provides maximum short- and long-term benefits to the reef.

• support for state-level coral reef management.

• outreach activities to educate the public about coral conservation and reduce human impacts.

• support for U.S. involvement, particularly through the sharing of scientific and management expertise, in bilateral, regional, and international coral reef management programs.

Recommendation 21-2
As part of the new Coral Protection and Management Act, Congress should codify and strengthen the U.S. Coral Reef Task Force and place it under the oversight of the National Ocean Council (NOC).

The Coral Reef Task Force should be strengthened in the following ways:

• it should report to the NOC’s Committee on Ocean Resource Management.

• its membership should be expanded to include the U.S. Department of Energy and specify participation by the U.S. Army Corps of Engineers within the U.S. Department of Defense.

• in collaboration with the states and territories, it should coordinate the development and implementation of regional ecosystem-based plans to address the impacts of nonpoint source pollution, fishing, and other activities on coral reef resources.

Recommendation 21-3
The National Oceanic and Atmospheric Administration (NOAA) should serve as the lead agency for management of deep-water coral communities. In this role, NOAA should work with states, academic institutions, and others to enhance national capabilities related to deep-water corals, including expanded surveys of their distribution and abundance and research on the major threats to their continued existence. After an appropriate review, NOAA should make recommendations to the National Ocean Council on the advisability of expanding the Coral Reef Task Force’s charter and membership to oversee deep-water corals or creating a similar task force on deep-water corals.

Recommendation 21-4
The National Oceanic and Atmospheric Administration should develop national standards—and promote adoption of international standards—to ensure that coral reef resources are harvested in a sustainable manner. The U.S. Department of State should implement incentive programs to encourage international compliance with these standards.

Recommendation 21-5
The U.S. Coral Reef Task Force, in coordination with the regional ocean information programs, should develop regional, ecosystem-based research plans to help protect coral reef ecosystems. These plans should guide agency research funding and be incorporated into the design and implementation of the national monitoring network and the Integrated Ocean Observing System.
Chapter 22: Setting a Course for Sustainable Aquaculture

Recommendation 22–1
Congress should amend the National Aquaculture Act to designate the National Oceanic and Atmospheric Administration (NOAA) as the lead federal agency for marine aquaculture, create an Office of Sustainable Marine Aquaculture in NOAA, and designate the Secretary of Commerce as a permanent co-chair, along with the Secretary of Agriculture, of the Joint Subcommittee on Aquaculture. NOAA should use this authority to design and implement national policies for environmentally and economically sustainable marine aquaculture.

Recommendation 22–2
The National Oceanic and Atmospheric Administration's new Office of Sustainable Marine Aquaculture should be responsible for developing a comprehensive, environmentally-sound permitting, leasing, and regulatory program for marine aquaculture. The permitting and leasing system and implementing regulations should:
- reflect a balance between economic and environmental objectives consistent with national and regional goals.
- be coordinated with guidelines and regulations developed at the state level.
- include a system for the assessment and collection of a reasonable portion of the resource rent generated from marine aquaculture projects that rely on ocean resources held in the public trust.
- include the development of a single, multi-agency permit application for proposed marine aquaculture operations.
- include a permit review process that includes public notice and an opportunity for state, local, and public comment.
- require applicants to post a bond or other financial guarantee to ensure that any later performance problems can be remedied and that abandoned facilities can be safely removed at no additional cost to taxpayers.
- require the development, dissemination, and adoption of best management practices, with periodic updates to reflect advances in research and technology.
- be well coordinated with other activities in federal waters.

Recommendation 22–3
The National Oceanic and Atmospheric Administration's new Office of Sustainable Marine Aquaculture should expand marine aquaculture research, development, training, extension, and technology transfer, including a socioeconomic component. The Office should set priorities for research and technology, in close collaboration with the National Sea Grant College Program, states, tribes, academia, industry, and other stakeholders.

Recommendation 22–4
The United States should work with the United Nations Food and Agriculture Organization to encourage and facilitate worldwide adherence to the aquaculture provisions of the Code of Conduct for Responsible Fisheries.
Chapter 23: Connecting the Oceans and Human Health

Recommendation 23–1
The National Oceanic and Atmospheric Administration, National Science Foundation, National Institute of Environmental Health Sciences, and other appropriate entities should support expanded research and development efforts to encourage multidisciplinary studies of the evolution, ecology, chemistry, and molecular biology of marine species, discover potential marine bioproducts, and develop practical compounds.
These efforts should include:
• a strong focus on discovering new marine microorganisms, visiting poorly sampled areas of the marine environment, and studying species that inhabit harsh environments.
• encouragement for private-sector investments and partnerships in marine biotechnology research and development to speed the creation of commercially available marine bioproducts.

Recommendation 23–2
The National Oceanic and Atmospheric Administration, National Science Foundation, National Institute of Environmental Health Sciences, and other appropriate entities, should support expanded research efforts in marine microbiology and virology.
These efforts should include:
• the discovery, documentation, and description of new marine bacteria, algae, and viruses and the determination of their potential negative effects on the health of humans and marine organisms.
• the elucidation of the complex inter-relations, pathways, and causal effects of marine pollution, harmful algal blooms, ecosystem degradation and alteration, emerging marine diseases, and climate change in disease events.

Recommendation 23–3
The National Oceanic and Atmospheric Administration, National Science Foundation, National Institute of Environmental Health Sciences, and other appropriate entities should support the development of improved methods for monitoring and identifying pathogens and chemical toxins in ocean and coastal waters and organisms.
This effort should include:
• developing accurate and cost-effective methods for detecting pathogens, contaminants, and toxins in seafood for use by both state and federal inspectors.
• developing in situ and space-based methods to monitor and assess pollution inputs, ecosystem health, and human health impacts.
• developing new tools for measuring human and environmental health indicators in the marine environment.
• developing models and strategies for predicting and mitigating pollutant loadings, harmful algal blooms, and infectious disease potential in the marine environment.

Recommendation 23–4
Congress should establish a national, multi-agency Oceans and Human Health Initiative to coordinate and sponsor exploration, research, and new technologies related to examining the connections among the oceans, ecosystem health, and human health. The National Oceanic and Atmospheric Administration’s Oceans and Human Health Initiative and the National Institute of Environmental Health Sciences—National Science Foundation Centers for Oceans and Human Health should be expanded and coordinated as the basis for this initiative.
The new Oceans and Human Health Initiative should:
• be implemented through both competitively awarded grants and support of federally-designated centers with federal, state, academic, and private-sector investigators eligible to compete for funding.
• work with the National Ocean Council to review other relevant agency programs and suggest areas where coordination could be improved.
• transfer new technologies into management programs that protect human health and the health of ocean and coastal ecosystems.

Recommendation 23–5
The National Oceanic and Atmospheric Administration, Environmental Protection Agency, and Food and Drug Administration, working with state and local managers, should fully implement all existing programs to protect human health from contaminated seafood and coastal waters. Particularly, the federal agencies should:
• incorporate new findings and technologies, especially those developed within the Oceans and Human Health Initiative, into monitoring and prevention programs.
• coordinate and increase interagency public education and outreach efforts in this area.

Chapter 24: Managing Offshore Energy and Other Mineral Resources

Recommendation 24–1
Congress should use a portion of the revenues the federal government receives from the leasing and extraction of outer Continental Shelf (OCS) oil and gas to provide grants to all coastal states that can be invested in the conservation and sustainable development of renewable ocean and coastal resources. States off whose coasts OCS oil and gas is produced should receive a larger share of such revenue to compensate them for the costs of addressing the environmental and socioeconomic impacts of energy activity in adjacent federal waters. None of the programs that currently receive revenues from OCS oil and gas activities should be adversely affected by this new allocation.

Recommendation 24–2
The U.S. Department of the Interior should expand the Minerals Management Service's Environmental Studies Program. Priorities for the enhanced Environmental Studies Program should include:
• conducting long-term environmental research and monitoring at appropriate outer Continental Shelf (OCS) sites to better understand cumulative, low-level, and chronic impacts of OCS oil and gas activities on the natural and human environments.
• working with state environmental agencies and industry to evaluate the risks to the marine environment posed by aging offshore and onshore pipelines, particularly in the Gulf of Mexico.

Recommendation 24–3
Ocean.US, working with the National Oceanic and Atmospheric Administration (NOAA) and Minerals Management Service (MMS), should include the offshore oil and gas industry as an integral partner in the design, implementation, and operation of the Integrated Ocean Observing System (IOOS), especially in areas where offshore oil and gas activities occur. Specifically, Ocean.US, NOAA, and MMS should work with the oil and gas industry to:
• employ industry resources, such as pipelines, platforms, and vessels as part of the IOOS.
• incorporate nonproprietary data into IOOS informational products and larger environmental databases, while protecting the security of proprietary data and meeting other safety, environmental, and economic concerns.
Recommendation 24–4
The National Ocean Council (NOC), working with the U.S. Department of Energy and other appropriate entities, should review the status of gas hydrates research and development to determine whether methane hydrates can contribute significantly to meeting the nation’s long-term energy needs. If such contribution looks promising, the NOC should recommend an appropriate level of investment in methane hydrates research and development, and determine whether a comprehensive management regime for industry access to hydrate resource deposits is needed.

Recommendation 24–5
Congress, with input from the National Ocean Council, should enact legislation providing for the comprehensive management of offshore renewable energy development as part of a coordinated offshore management regime.
Specifically, this legislation should:
• be based on the premise that the oceans are a public resource.
• streamline the process for licensing, leasing, and permitting renewable energy facilities in U.S. waters.
• subsume existing statutes, such as the Ocean Thermal Energy Conversion Act.
• ensure that the public receives a fair return from the use of the resource and that development rights are allocated through an open, transparent process that considers state, local, and public concerns.

Recommendation 24–6
The Minerals Management Service should systematically identify the nation’s offshore non-energy mineral resources and conduct the necessary cost-benefit, long-term security, and environmental studies to create a national program that ensures the best uses of those resources.

Chapter 25: Creating a National Strategy for Increasing Scientific Knowledge

Recommendation 25–1
Congress should double the federal ocean and coastal research budget over the next five years. The new funds should be used to support a balance of basic and applied research.

Recommendation 25–2
The National Ocean Council should develop a national ocean and coastal research strategy that reflects a long-term vision and promotes advances in basic and applied ocean science and technology. The strategy should recognize the different ocean science sectors (government, academic, commercial, and nongovernmental), acknowledge their different roles, and maximize the use of partnerships.

Recommendation 25–3
The National Ocean Council (NOC) research strategy should include a national program for social science and economic research to examine the human dimensions and economic value of the nation’s oceans and coasts. The NOC should direct relevant agencies to include socioeconomic research as an integral part of their efforts.
The national program should include:
• an operational socioeconomic research and assessment function within the National Oceanic and Atmospheric Administration (NOAA).
• an interagency steering group, chaired by NOAA and including the Bureau of Labor Statistics (BLS), Bureau of the Census, Bureau of Economic Analysis (BEA), U.S. Department of Agriculture, U.S. Environmental Protection Agency, and National Science Foundation to coordinate ocean-related socioeconomic research.
• biennial reports by BLS and BEA on the employment, wages, and output associated with U.S. coasts and oceans.
• biennial reports by the Bureau of Transportation Statistics on intermodal access to U.S. ports and maritime facilities and assessments of relevant maritime system performance and economic data.
• periodic reports on such topics as coastal demographics, geographic patterns and trends of ocean and coastal use, economic contributions, attitudes and perceptions, functioning of governance arrangements, and public-private partnerships.
• establishment of partnerships to take maximum advantage of the expertise resident within government agencies, academic institutions, and the private sector.
• increased interactions with regional, state, and local stakeholders through regional ocean councils and regional ocean information programs so their information needs can be met and socioeconomic changes at these levels can be documented and analyzed.

Recommendation 25–4
Congress should significantly expand the National Sea Grant College Program as part of doubling ocean and coastal research funding.

Recommendation 25–5
The National Ocean Council (NOC) should direct ocean-related agencies to develop ten-year science plans and budgets consistent with the national strategy. The NOC should provide additional guidance concerning granting mechanisms.
The NOC guidance should:
• require agencies to provide multi-year (greater than five-year) funding opportunities in addition to traditional grant mechanisms.
• reiterate the importance of balancing basic and applied research projects and promote the transition of basic research results to applied uses.
• require a system of independent review for all grant applications, including those from federal laboratories.
• incorporate the science needs and priorities of local, state, regional, and national managers, working with the regional ocean information programs.

Recommendation 25–6
The National Oceanic and Atmospheric Administration and the National Science Foundation should lead an expanded national ocean exploration program, with additional involvement from the U.S. Geological Survey and the U.S. Navy's Office of Naval Research. Public outreach and education should be integral components of the program.

Recommendation 25–7
The Federal Geographic Data Committee (FGDC) should coordinate federal ocean and coastal mapping and charting activities with the goal of creating standardized, easily accessible national maps. These maps should be able to incorporate living and nonliving marine resource data along with bathymetry, topography, and other natural features, and should provide seamless data across the shoreline, coastal zone, nearshore areas, and open ocean waters.
To accomplish these goals, the FGDC should:
• coordinate an interagency budget strategy to accelerate the completion of mapping priorities throughout coastal areas, the exclusive economic zone, and continental shelf.
• establish and maintain a Web-accessible registry that allows federal agencies to coordinate mapping and charting missions.
establish and maintain a single Web-based source to provide easy access to geospatial data and integrated national maps.

ensure that federal mapping and charting activities take full advantage of resources available in the academic and private sectors.

ensure that federal mapping activities take advantage of state resources and address state information needs.

**Recommendation 25–8**

Congress should re-establish an Office of Technology Assessment to provide it with objective and authoritative analyses of complex scientific and technical issues.

**Chapter 26: Achieving a Sustained, Integrated Ocean Observing System**

**Recommendation 26–1**

The National Ocean Council should make development and implementation of a sustained, national integrated Ocean Observing System (IOOS) a key element of its leadership and coordination role. As an essential component of IOOS development, the NOC should promote strong partnerships among federal, state, territorial, tribal, and local governments, nongovernmental organizations, industry, and academia, drawing upon the strengths and capabilities of each sector in the design, development, and operation of the IOOS.

**Recommendation 26–2**

Ocean.US should be responsible for planning the national Integrated Ocean Observing System (IOOS). The National Oceanic and Atmospheric Administration should serve as the lead federal agency for implementing and operating the IOOS, with extensive interagency coordination and subject to approval of all plans and budgets by the National Ocean Council.

**Recommendation 26–3**

Congress should amend the National Oceanographic Partnership Act to formally establish Ocean.US under the National Ocean Council (NOC).

Ocean.US should:

- report to the NOC's Committee on Ocean Science, Education, Technology, and Operations.
- be provided with funding as a line item within the National Oceanic and Atmospheric Administration's budget, to be spent subject to NOC approval.
- have authority to bring in outside experts on rotational appointments when needed.

**Recommendation 26–4**

Ocean.US should proactively seek input from coastal and ocean stakeholder communities to build cross-sector support for the national Integrated Ocean Observing System (IOOS) and develop a consensus on operational requirements.

Specifically, Ocean.US should seek input on its plans from:

- agencies with homeland security responsibilities, including ideas for future research and development to improve and enhance the system.
- state, local, territorial, and tribal agencies, industry, academia, nongovernmental organizations, and the public in the design and implementation of regional observing systems and their integration into the national IOOS.

**Recommendation 26–5**

Ocean.US should develop a set of core variables to be collected by all components of the national Integrated Ocean Observing System. This set of core variables should include appropriate biological, chemical, geological, and physical variables and be based on input from the National Federation of Regional Associations.
Recommendation 26–6
The National Oceanic and Atmospheric Administration, the National Science Foundation (NSF), the Office of Naval Research, and the National Aeronautics and Space Administration should require investigators who receive federal funding related to ocean observatories, including the NSF Ocean Observatories Initiative, to plan for the transfer of successful technologies to an operational mode in the Integrated Ocean Observing System.

Recommendation 26–7
Ocean.US should recommend priorities for space-based missions as an essential component of the national Integrated Ocean Observing System (IOOS). The National Oceanic and Atmospheric Administration (NOAA) and the National Aeronautics and Space Administration (NASA) should work together on the development, budgeting, and scheduling of IOOS satellite missions, based on Ocean.US plans.

Ocean.US, NOAA, and NASA should:
- work closely with the user community and the space industry to identify the most important space-based ocean observation needs.
- work with the international community to ensure that requirements for the Global Ocean Observing System are coordinated with U.S. plans for satellite remote sensing.
- implement phased satellite missions and equipment replacement to maintain unbroken, consistent data streams based on Ocean.US plans.

Recommendation 26–8
Congress should transfer ongoing operation of the National Aeronautics and Space Administration (NASA) Earth environmental observing satellites to the National Oceanic and Atmospheric Administration (NOAA) to achieve continuous collection of critical space-based Earth environmental measurements. NOAA and NASA should work together to identify research satellite missions that have operational applications and to ensure the smooth transition of each Earth environmental observing satellite after its launch and testing.

Recommendation 26–9
The National Oceanic and Atmospheric Administration (NOAA) should improve its capacity to calibrate, collect, and disseminate satellite data and to integrate satellite-derived information with traditional ocean and coastal databases. NOAA should ensure that a suitable archive exists to preserve historical satellite data, particularly those related to long-term trends such as climate.

Recommendation 26–10
Ocean.US and the National Oceanic and Atmospheric Administration (NOAA) should work with state and local governments, the Regional Associations, educators, nongovernmental organizations, and the private sector, to ensure that information products generated from the Integrated Ocean Observing System (IOOS) are useful to a broad user community.

In particular, Ocean.US and NOAA should:
- work with the U.S. Navy, the Regional Associations, Ocean.IT, and the private sector to create new models and forecasting methods to meet user information needs.
- work with the Regional Associations to provide the training and tools necessary for users to work with, and benefit from, IOOS information products.

Recommendation 26–11
Congress should fund the Integrated Ocean Observing System (IOOS) as a line item in the National Oceanic and Atmospheric Administration (NOAA) budget, to be spent subject to National Ocean Council (NOC) direction and approval. IOOS funds should be appropriated without fiscal year limitation. NOAA should develop a streamlined process for distributing IOOS funds to other federal and nonfederal partners based on the NOC plan.
Recommendation 26–12
The National Ocean Council should oversee coordination of the Integrated Ocean Observing System with other existing and planned terrestrial, watershed, atmospheric, and biological observation and information collection systems, with the ultimate goal of developing a national Earth Observing System.

Recommendation 26–13
The National Ocean Council (NOC) should promote international coordination and capacity building in the field of global ocean observations.
Specifically, the NOC should:

- lead the interagency implementation of the 2003 Declaration on Earth Observing.
- encourage and support developing nations' participation in the Global Ocean Observing System.
- continue to advocate full, open, and meaningful data access policies and contribute technological expertise to ensure access by all participants.

Chapter 27: Enhancing Ocean Infrastructure and Technology Development

Recommendation 27–1
The National Ocean Council (NOC) should develop a national ocean and coastal infrastructure and technology strategy, including detailed plans for funding and implementation, to support science, resource management, assessments, enforcement, and education. The strategy should guide agency plans for facility construction, upgrading, or consolidation and for new technology development.
In particular, the national strategy should:

- be developed through the NOC's Committee on Ocean Science, Education, Technology, and Operations.
- set specific priorities for acquiring and upgrading ocean and coastal infrastructure, including vessels, facilities, instrumentation, and equipment.
- build on the existing capabilities of federal, state, academic, and private entities.
- identify emerging technologies that should be incorporated into agency operations.
- promote international partnerships to deploy and share major oceanographic assets.

Recommendation 27–2
The National Oceanic and Atmospheric Administration should establish an Office of Technology Transfer with responsibility for expediting the transition of proven ocean-related technologies into operational applications. This office should work closely with the National Science Foundation, the U.S. Navy, the National Aeronautics and Space Administration, academic institutions, regional organizations, and private industry to achieve its mission.

Recommendation 27–3
The National Ocean Council should undertake an assessment of U.S. ocean and coastal infrastructure and technology every five years. These assessments should account for all federal, state, academic, and private assets and should be used to create and update a national facilities database.
The assessments should build on this Commission's efforts (Appendix 5), including information on:
- the location, ownership, availability, remaining service life, and replacement cost for a wide range of ocean infrastructure assets.
- maintenance and operational costs associated with these assets.
- associated human resource needs.
- the outcomes of past federal investments in ocean technology and infrastructure, with recommendations for improvements.
Recommendation 27-4
Congress should create a mechanism to ensure a dedicated funding stream for critical ocean science infrastructure and technology needs. Spending priorities should be based on the National Ocean Council's ocean and coastal infrastructure and technology strategy. High-priority areas for funding include the following:
- the renewal of the University-National Oceanographic Laboratory System fleet and other essential air fleets and deep-submergence vehicles.
- the completion of the third and fourth dedicated fishery research vessels.
- the acquisition of vessels and infrastructure needed for an expanded national ocean exploration program.
- the Integrated Ocean Drilling Program non-riser drilling vessel.
- the refurbishment or replacement of two U.S. Coast Guard polar ice breakers.
- the ongoing modernization of existing assets, including telecommunications assets, laboratories, and other facilities.

Recommendation 27-5
Congress should support the infrastructure and technology requirements related to ocean and coastal management, operations, and enforcement. Priorities should be based on the National Ocean Council's ocean and coastal infrastructure and technology strategy. High-priority areas for funding include the following:
- recapitalization of the Coast Guard fleet based on an accelerated modernization plan.
- modernization of other federal fleets as needed.
- ongoing maintenance and upgrades of land-based operational and enforcement facilities.
- maintenance and upgrading of monitoring buoys, gages, and stations.
- coordinated satellite observing deployment.

Recommendation 27-6
The National Oceanic and Atmospheric Administration should establish four to six national virtual marine technology centers at existing institutions to provide coordinated access, through electronic means, to cutting-edge, large-scale research technologies.

Chapter 28: Modernizing Ocean Data and Information Systems

Recommendation 28-1
Congress should amend the National Oceanographic Partnership Act to establish Ocean.IT as the lead federal interagency planning organization for ocean and coastal data and information management. Ocean.IT should consist of representatives from all federal agencies involved in ocean data and information management. Ocean.IT should:
- report to the National Ocean Council's Committee on Ocean Science, Education, Technology, and Operations.
- create an interagency plan to improve coordination between the existing data centers and to integrate ocean and coastal data from different agencies and from the academic and private sectors.
- set priorities for archiving historical and nondigital data.
- coordinate shared resources and the acquisition of new hardware for use by the ocean sciences community.
- work with existing supercomputer centers to negotiate adequate time for ocean science needs.
- assess federal agency software needs and initiate interagency programs to create high-priority applications, such as new modeling programs.
• coordinate federal agency efforts to attract information technology expertise into the
  ocean sciences community.
• communicate with regional, state, and local organizations, including the regional ocean
  information programs, to determine user needs and feed this information back to rele-
  vant agencies.

Recommendation 28–2
The National Oceanic and Atmospheric Administration (NOAA) and the U.S. Navy should estab-
lish an ocean and coastal information management and communications partnership to gener-
ate information products relevant to national, regional, state, and local operational needs.
The NOAA-Navy partnership should:
• prioritize products and forecasts based on input from regional ocean information pro-
  grams, Ocean.IT, Ocean.US, the Regional Associations of the IOOS, and other federal,
  regional, state, and local users.
• base products and forecasts on all available data sources.
• support the generation of new models and forecasts in collaboration with Ocean.IT, aca-
  demia, and the private sector.

Recommendation 28–3
Ocean.IT should work with developers of the National Virtual Ocean Data System and other
innovative data management systems to implement a federally-supported system for access-
ing ocean and coastal data both within and outside the national data centers.

Recommendation 28–4
The National Ocean Council (NOC) should establish and enforce common requirements and
deadlines for investigators to submit data acquired during federally funded ocean research
projects.
In establishing these requirements, the NOC’s Committee on Ocean Science, Education,
Technology, and Operations should:
• develop incentives to ensure more timely submission of investigator data to the
  national centers.
• require that a certification of data deposit be supplied to investigators who comply with
  the new regulations and that this certificate be presented before subsequent federal
  funding is provided.

Recommendation 28–5
The U.S. Navy should periodically review and declassify appropriate naval oceanographic data
for access by the civilian science community.

Recommendation 28–6
The President should convene an interagency task force to plan for modernizing the national
environmental data archiving, assimilation, modeling, and distribution system with the goal
of creating an integrated Earth environmental data and information system.
The task force should:
• be comprised of all federal agencies with environmental data collection responsibilities.
• propose a plan for the national environmental data system that includes specific cost
  estimates and phasing requirements to ensure timely implementation.
Chapter 29: Advancing International Ocean Science and Policy

**Recommendation 29–1**

**Recommendation 29–2**
The National Ocean Council should coordinate an expedited review and analysis of the ocean-related components of the United Nations Convention on Biological Diversity and recommend to the U.S. Department of State whether, from an ocean perspective, ratification of this treaty would be beneficial to U.S. interests.

**Recommendation 29–3**
The National Ocean Council (NOC) should establish and oversee an interagency committee to support the development and implementation of ocean-related international policy. The international committee of the NOC should:
- be chaired by the U.S. Department of State.
- make recommendations to the Assistant to the President, the Secretary of State, and other agency heads as appropriate, on international ocean policy.
- assess the implementation status of ocean-related treaties to which the United States is a party and recommend appropriate actions and funding required to fulfill U.S. treaty obligations.
- provide technical assistance to the NOC on international ocean issues.

**Recommendation 29–4**
The National Ocean Council should assess emerging international ocean-related management challenges and make recommendations for either incorporating these activities under existing management regimes or developing appropriate new ones. The U.S. Department of State should work with the international community to implement these recommendations.

**Recommendation 29–5**
The U.S. Department of State should improve its integration of ocean-related scientific expertise in policy and program development and implementation. These improvements can be accomplished by:
- conducting State Department staff training about the relevance of scientific considerations to international ocean policy.
- increasing scientific support throughout the department to address current and emerging ocean-related issues, particularly through the use of borrowed personnel from resource agencies or academic institutions.
- creating mechanisms to facilitate input from the scientific community on complex ocean-related issues.

**Recommendation 29–6**
The United States should continue to participate in and support major international ocean science organizations and programs.

**Recommendation 29–7**
The U.S. Department of State should offer strong support for U.S. scientists conducting research programs around the world. Existing international partnerships should be strengthened and new partnerships promoted to facilitate the conduct of international research.
Recommendation 29–8
The United States should increase its efforts to enhance long-term ocean science and management capacity in other nations through grants, education and training, technical assistance, and sharing best practices, management techniques, and lessons learned.

Chapter 30: Funding Needs and Possible Sources

Recommendation 30–1
Congress should establish an Ocean Policy Trust Fund in the U.S. Treasury, composed of unallocated federal revenues from outer Continental Shelf (OCS) oil and gas activities, plus revenues from any new activities approved in federal waters, to support the nation's new coordinated and comprehensive national ocean policy. Trust Fund monies should be disbursed to coastal states, other appropriate coastal authorities, and federal agencies to support improved ocean and coastal management, based on an allocation determined by Congress with input from the National Ocean Council. The Trust Fund should be used to supplement—not replace—existing appropriations for ocean and coastal programs.

The Ocean Policy Trust Fund should be distributed as follows:
- $500 million in the first year, increasing to $1.0 billion in the third and subsequent years, among all coastal and Great Lakes states, territories, and federally-recognized tribes with coastal resource treaty rights. A larger share should go to OCS producing states to address offshore energy impacts. The funds should be used for the conservation and sustainable development of renewable ocean and coastal resources, including any new responsibilities that arise as a result of Commission recommendations and the expansion of programs and activities that are currently underfunded.
- the remainder of the funds to federal agencies to address the new or expanded activities assigned to them as a result of Commission recommendations.

Recommendation 30–2
The National Ocean Council, in cooperation with the Office of Management and Budget, should coordinate the compilation of a biennial report from the President on ocean funding, as required by the Oceans Act of 2000, including establishment of a consistent reporting format and a more useful classification scheme.
Pages 231-272 intentionally deleted
Executive Order: Committee on Ocean Policy

By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered as follows:

Section 1. Policy. It shall be the policy of the United States to:

(a) coordinate the activities of executive departments and agencies regarding ocean-related matters in an integrated and effective manner to advance the environmental, economic, and security interests of present and future generations of Americans; and

(b) facilitate, as appropriate, coordination and consultation regarding ocean-related matters among Federal, State, tribal, local governments, the private sector, foreign governments, and international organizations.

Sec. 2. Definition. For purposes of this order the term "ocean-related matters" means matters involving the oceans, the Great Lakes, the coasts of the United States (including its territories and possessions), and related seabed, subsoil, and natural resources.

Sec. 3. Establishment of Committee on Ocean Policy.

(a) There is hereby established, as a part of the Council on Environmental Quality and for administrative purposes only, the Committee on Ocean Policy (Committee).

(b) The Committee shall consist exclusively of the following:

(i) the Chairman of the Council on Environmental Quality, who shall be the Chairman of the Committee;

(ii) the Secretaries of State, Defense, the Interior, Agriculture, Health and Human Services, Commerce, Labor, Transportation, Energy, and Homeland Security, the Attorney General, the Administrator of the Environmental Protection Agency, the Director of the Office of Management and Budget, the Administrator of the National Aeronautics and Space Administration, the Director of National Intelligence, the Director of the Office of Science and Technology Policy, the Director of the National Science Foundation, and the Chairman of the Joint Chiefs of Staff;

(iii) the Assistants to the President for National Security Affairs, Homeland Security, Domestic Policy, and Economic Policy;

(iv) an employee of the United States designated by the Vice President; and

(v) such other officers or employees of the United States as the Chairman of the Committee may from time to time designate.

(c) The Chairman of the Committee, after coordination with the Assistants to the President for National Security Affairs and Homeland Security, shall regularly convene and preside at meetings of the Committee, determine its agenda, direct its work, and, as appropriate to deal with particular subject matters, establish and direct subcommittees of the Committee that shall consist exclusively
of members of the Committee. The Committee shall coordinate its advice in a timely fashion.

(d) A member of the Committee may designate, to perform the Committee or subcommittee functions of the member, any person who is within such member's department, agency, or office and who is (i) an officer of the United States appointed by the President, (ii) a member of the Senior Executive Service or the Senior Intelligence Service, (iii) an officer or employee within the Executive Office of the President, or (iv) an employee of the Vice President.

(e) Consistent with applicable law and subject to the availability of appropriations, the Council on Environmental Quality shall provide the funding, including through the Office of Environmental Quality as permitted by law and as appropriate, and administrative support for the Committee necessary to implement this order.

Sec. 4. Functions of the Committee. To implement the policy set forth in section 1 of this order, the Committee shall:

(a) provide on establishment or implementation of policies concerning ocean-related matters to:

(i) the President; and

(ii) the heads of executive departments and agencies from time to time as appropriate;

(b) obtain information and advice concerning ocean-related matters from:

(i) State, local, and tribal elected and appointed officials in a manner that seeks their individual advice and does not involve collective judgment or consensus advice or deliberation; and

(ii) representatives of private entities or other individuals in a manner that seeks their individual advice and does not involve collective judgment or consensus advice or deliberation;

(c) at the request of the head of any department or agency who is a member of the Committee, unless the Chairman of the Committee declines the request, promptly review and provide advice on a policy or policy implementation action on ocean-related matters proposed by that department or agency;

(d) provide and obtain information and advice to facilitate:

(i) development and implementation of common principles and goals for the conduct of governmental activities on ocean-related matters;

(ii) voluntary regional approaches with respect to ocean-related matters;

(iii) use of science in establishment of policy on ocean-related matters; and

(iv) collection, development, dissemination, and exchange of information on ocean-related matters; and

(e) ensure coordinated government development and implementation of the ocean component of the Global Earth Observation System of Systems.

Sec. 5. Cooperation. To the extent permitted by law and applicable presidential guidance, executive departments and agencies shall provide the Committee such information, support, and assistance as the Committee, through the Chairman, may request.

Sec. 6. Coordination. The Chairman of the Council on Environmental Quality, the Assistant to the President for National Security Affairs, the Assistant to the President for Homeland Security, and, with respect to the interagency task force established by Executive Order 13340 of May 18, 2004, the Administrator of the Environmental Protection Agency, shall ensure appropriate coordination of the activities of the Committee under this order and other policy coordination structures relating to ocean or maritime issues pursuant to Presidential guidance.

Sec. 7. General Provisions. (a) Nothing in this order shall be construed to impair or otherwise affect:

(i) authority granted by law to a executive department or agency or the head thereof; or

(ii) functions assigned by the President to the National Security Council or Homeland Security
Council (including subordinate bodies) relating to matters affecting foreign affairs, national security, homeland security, or intelligence.

(b) Nothing in this order shall be construed to impair or otherwise affect the functions of the Director of the Office of Management and Budget relating to budget, administrative, or legislative proposals.

(c) This order is intended only to improve the internal management of the Federal Government and is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by a party against the United States, its departments, agencies, or entities, its officers or employees, or any other person.

GEORGE W. BUSH

THE WHITE HOUSE,

MEMORANDUM FOR THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES

SUBJECT: NATIONAL POLICY FOR THE OCEANS, OUR COASTS, AND THE GREAT LAKES

The oceans, our coasts, and the Great Lakes provide jobs, food, energy resources, ecological services, recreation, and tourism opportunities, and play critical roles in our Nation's transportation, economy, and trade, as well as the global mobility of our Armed Forces and the maintenance of international peace and security. We have a stewardship responsibility to maintain healthy, resilient, and sustainable oceans, coasts, and Great Lakes resources for the benefit of this and future generations.

Yet, the oceans, coasts, and Great Lakes are subject to substantial pressures and face significant environmental challenges. Challenges include water pollution and degraded coastal water quality caused by industrial and commercial activities both onshore and offshore, habitat loss, fishing impacts, invasive species, disease, rising sea levels, and ocean acidification. Oceans both influence and are affected by climate change. They not only affect climate processes but they are also under stress from the impacts of climate change. Renewable energy, shipping, and aquaculture are also expected to place growing demands on ocean and Great Lakes resources. These resources therefore require protection through the numerous Federal, State, and local authorities with responsibility and jurisdiction over the oceans, coasts, and Great Lakes.

To succeed in protecting the oceans, coasts, and Great Lakes, the United States needs to act within a unifying framework under a clear national policy, including a comprehensive, ecosystem-based framework for the longterm conservation and use of our resources.

In order to better meet our Nation's stewardship responsibilities for the oceans, coasts, and Great Lakes, there is established an Interagency Ocean Policy Task Force (Task Force), to be led by the Chair of the Council on Environmental Quality. The Task Force shall be composed of senior policy-level officials from the executive departments, agencies, and offices represented on the Committee on Ocean Policy established by section 3 of Executive Order 13366 of December 17, 2004. This Task Force is not meant to duplicate that structure, but rather is intended to be a temporary entity with the following responsibilities:

more (OVER)
1. Within 90 days from the date of this memorandum, the Task Force shall develop recommendations that include:

   a. A national policy that ensures the protection, maintenance, and restoration of the health of ocean, coastal, and Great Lakes ecosystems and resources, enhances the sustainability of ocean and coastal economies, preserves our maritime heritage, provides for adaptive management to enhance our understanding of and capacity to respond to climate change, and is coordinated with our national security and foreign policy interests. The recommendations should prioritize upholding our stewardship responsibilities and ensuring accountability for all of our actions affecting ocean, coastal, and Great Lakes resources, and be consistent with international law, including customary international law as reflected in the 1982 United Nations Convention on the Law of the Sea.

   b. A United States framework for policy coordination of efforts to improve stewardship of the oceans, our coasts, and the Great Lakes. The Task Force should review the Federal Government's existing policy coordination framework to ensure integration and collaboration across jurisdictional lines in meeting the objectives of a national policy for the oceans, our coasts, and the Great Lakes. This will include coordination with the work of the National Security Council and Homeland Security Council as they formulate and coordinate policy involving national and homeland security, including maritime security. The framework should also address specific recommendations to improve coordination and collaboration among Federal, State, tribal, and local authorities, including regional governance structures.

   c. An implementation strategy that identifies and prioritizes a set of objectives the United States should pursue to meet the objectives of a national policy for the oceans, our coasts, and the Great Lakes.

2. Within 180 days from the date of this memorandum, the Task Force shall develop, with appropriate public input, a recommended framework for effective coastal and marine spatial planning. This framework should be a comprehensive, integrated, ecosystem-based approach that addresses conservation, economic activity, user conflict, and sustainable use of ocean, coastal, and Great Lakes resources consistent with international law, including customary international law as reflected in the 1982 United Nations Convention on the Law of the Sea.

3. The Task Force shall terminate upon the completion of its duties.

The Task Force's recommendations and frameworks should be cost effective and improve coordination across Federal agencies.

This memorandum covers matters involving the oceans, the Great Lakes, the coasts of the United States (including its more
territories and possessions), and related seabed, subsoil, and living and non-living resources.

This memorandum is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person. Nothing in this memorandum shall be construed to impair or otherwise affect the functions of the Director of the Office of Management and Budget relating to budgetary, administrative, regulatory, and legislative proposals.

The Chair of the Council on Environmental Quality is hereby authorized and directed to publish this memorandum in the Federal Register.

BARACK OBAMA

# # #
United States Senate Committee on Commerce, Science & Transportation

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National Ocean Policy Study

Subcommittee Members

Democrats
Barbara Boxer
(Ranking Member)
Daniel K. Inouye
John F. Kerry
Maria Cantwell
Frank R. Lautenberg

Republicans
John E. Sununu (Chair)
Ted Stevens
Trent Lott
Kay Bailey Hutchison
Olympia J. Snowe
Gordon H. Smith
Jim DeMint
David Vitter

Hearings

June 14, 2006 - POSTPONED -- State of the Oceans 2006 [view]
June 8, 2006 - Offshore Aquaculture: Challenges of Fish Farming in Federal Waters [view]
April 6, 2006 - Offshore Aquaculture [view]
February 8, 2006 - The Coastal and Estuarine Land Protection Act (S. 1215)--POSTPONED [view]
June 15, 2005 - Ballast Water Invasive Species Management and Threats to Coral Reefs [view]

Press Releases

March 16, 2006 - Senate Commerce Committee Reports the Coastal and Estuarine Land Protection Act [view]
Bureau of Oceans and International Environmental and Scientific Affairs

The Bureau of Oceans and International Environmental and Scientific Affairs (OES), headed by Assistant Secretary Claudia McMurray, coordinates an extensive portfolio of issues related to science, the environment, and the world's oceans. Ambassador Reno Hamish is her Principal Deputy Assistant Secretary.

The Oceans and Fisheries Directorate, headed by David A. Balton, Deputy Assistant Secretary for Oceans and Fisheries, has two offices dedicated to international oceans issues. The Office of Marine Conservation focuses on international fisheries matters and related problems and the Office of Oceans Affairs has primary responsibility for international ocean law and policy, marine pollution, marine mammals, polar affairs, maritime boundaries, and marine science.

The Environment Directorate, led by Daniel A. Reifsnyder, Deputy Assistant Secretary for Environment, deals with a broad range of global issues related to protecting the environment and conserving natural resources. The Office of Environmental Policy coordinates U.S. approaches to transboundary air quality issues, safeguarding the stratospheric ozone layer and environmentally sound chemicals management. The office also handles environmental aspects of free trade agreements and environmental issues in multilateral organizations such as the U.N. Environment Program and in international financial institutions. The Office of Ecology and Terrestrial Conservation coordinates U.S. approaches to international wildlife and forest issues, including the Administration's new initiative to build a global Coalition Against Wildlife Trafficking, the President's Initiative Against Illegal Logging, the Congo Basin Forest Partnership and the Liberia Forest Initiative. The office also handles issues related to the conservation of coral reefs, wetlands and drylands, access to genetic resources, and control of invasive species.

Taking the lead on climate change issues is Harian L. Watson, Senior Climate Negotiator and Special Representative. Dr. Watson works closely with the climate team in the Office of Global Change.

The Health, Space and Science Directorate includes the Office of...

Highlights

U.S.-Ukraine Science and Technology Agreement
The agreement provides a framework for cooperation among a variety of public, private and academic research establishments, and builds on the successes of two previous agreements. (Dec.5) media note

Energy Secretary and Secretary of the Treasury announced the award of $1 Billion in Tax Credits to Promote Clean Coal Power Generation and Gasification Technologies. (Nov.30) DOE media note | DOE fact sheet html/pdf | Treasury IRS fact sheet html/pdf

OES colleague, Stephanie J. Caswell, Director of the Office of Ecology and Terrestrial Conservation (ETC) wins the prestigious Frank E. Loy Award for Environmental Diplomacy. (Nov.29) full text

Assistant Secretary McMurray signed the landmark U.S.-Morocco Science and Technology Cooperation (S&T) Agreement and the U.S.-Morocco Environmental Cooperation Plan of Action. (Nov. 14) Media Note | Photos

Under Secretary Dobriansky announced that the U.S. and the other five Partner countries of the Asia-Pacific Partnership on Clean Development and Climate have endorsed detailed Action Plans. (Oct. 31) fact sheets | media note | more | remarks with audio

USA Energy Needs, Clean Development and Climate Change Partnerships in Action Brochure (Nov. 31) html | PDF
International Health Affairs which works with U.S. Government agencies to facilitate policy-making regarding international bioterrorism, infectious disease, surveillance and response, environmental health, and health in post-conflict situations. The Office of Space and Advanced Technology handles issues arising from our exploration of space to assure global security regarding this new frontier, and the Office of Science & Technology (S&T) Cooperation promotes the interests of the U.S. science and technology communities in the international policy arena, negotiates framework and other S&T agreements, manages the Department's Embassy Science fellows program, and takes a leading role in representing U.S. science and technology in multilateral international organizations, such as UNESCO and other UN organizations, APEC, OECD, and others.

The Office of Policy Coordination and Initiatives (PCI) employs a long-term, strategic approach to OES goals. It coordinates the Bureau's efforts within the broad conceptual framework of sustainable development, working closely with the United Nations Commission on Sustainable Development and helping build and promote public-private partnerships. The office manages ongoing initiatives on water and access to energy. PCI also manages bilateral dialogues on OES issues with major partners such as Brazil, India and China, and coordinates environmental cooperation with key countries such as Afghanistan and Iraq.

The OES Initiatives Grants Program (OESI) under PCI direction supports initiatives by the three functional directorates across all regions. PCI also coordinates Regional Environmental Hubs that take a transboundary view of environment, science and health issues from 12 strategically placed Embassy locations throughout the world.
Oceans

The United States has important and diverse interests in the oceans. As the world's pre-eminent naval power, the United States has a national security interest in the ability to freely navigate and overfly the oceans as essential preconditions for projecting military power. The end of the Cold War has, if anything, highlighted this need. Ensuring the free flow of commercial navigation is likewise a basic concern for the United States as a major trading power, whose economic growth and employment is inextricably linked with a robust and growing export sector. By far, the bulk of international trade is transported by sea.

At the same time, the United States, with one of the longest coastlines of any nation in the world, has basic resource and environmental interests in the oceans. The seabed of the deep oceans offers the potential for economically and strategically important mineral resources. Inshore and coastal waters generate vital economic activities -- fisheries, offshore minerals development, ports and transportation facilities and, increasingly, recreation and tourism. The health and well-being of coastal populations -- the majority of Americans live in coastal areas -- are intimately linked to the quality of the coastal marine environment.

Understanding the oceans, including their role in global processes, is one of the frontiers of human scientific investigation, and the United States is a leader in the conduct of marine scientific research. Further, such research is essential for understanding and addressing problems associated with the use and protection of the marine environment, including marine pollution, conservation of fish and other marine living species, and forecasting of weather and climate variability.

Pursuit of these objectives, however, requires careful and often difficult balancing of interests. As a coastal nation, for example, we naturally tend to seek maximum control over the waters off our shores. Equally, as a major maritime power, we often view such efforts on the part of others as unwarranted limitations on legitimate rights of navigation.

Moreover, traditional perceptions of the inexhaustibility of marine resources and of the capacity of the oceans to neutralize wastes have changed,
harvesting and their habitats damaged or threatened by pollution and a variety of human activities. Maintaining the health and productive capacity of the oceans while seeking to meet the economic aspirations of growing populations also requires difficult choices.

Striking the balances necessary to implement United States oceans policy must be viewed in the international context. Living resources migrate. Likewise, marine ecosystems and ocean currents, which transport pollutants and otherwise affect environmental interests, extend across maritime boundaries and jurisdictional limits. National security and commercial shipping interests are also international in scope. Achievement of oceans policy objectives thus requires international cooperation at the bilateral, regional, and global level. The alternative is increased competition, and conflict over control of the oceans and marine resources to the potential detriment of United States interests and the marine environment generally.

The U.S. Department of State provides support for U.S. interests in the following oceans-related areas:

- Antarctica
- Arctic
- Aquaculture
- Biodiversity
- Coral Reefs
- Deep Seabed Mining
- Fisheries
- Invasive Species, Aquatic
- Law of the Sea
- Mammals, Marine
- Marine Science Research Authorizations
- Maritime Boundaries and National Maritime Claims
- Navigation/Transport
- Pollution
- Regional Seas Programme
- Science, Marine
- Seabirds
- Sea Turtles
- Small Island Developing States
- Underwater Cultural Heritage
- Whales
# National Oceanic and Atmospheric Administration

Describes and predicts changes in the Earth's environment, and conserves and wisely manages the Nation's coastal and marine resources

http://www.noaa.gov

<table>
<thead>
<tr>
<th>National Marine Fisheries Service</th>
<th>Manages living marine resources for commercial and recreational use, and protects imperiled species and habitats</th>
<th><a href="http://www.nmfs.noaa.gov">http://www.nmfs.noaa.gov</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Office of Constituent Services</td>
<td>Provides the principal source of advice and guidance on matters relating to constituent outreach, trade services, and recreational fisheries affairs</td>
<td><a href="http://www.nmfs.noaa.gov/ocs/">http://www.nmfs.noaa.gov/ocs/</a></td>
</tr>
<tr>
<td>Constituent Affairs</td>
<td>Provides liaison, communications, and outreach between NMFS and the recreational fisheries/industry constituency, traditional and other industry, and professional fisheries organizations</td>
<td>N/A</td>
</tr>
<tr>
<td>Office for Law Enforcement</td>
<td>Enforces all federal statutes and regulations under the jurisdiction of NOAA regarding the protection of fisheries, marine sanctuaries, marine mammals, endangered species, and other ocean resources</td>
<td><a href="http://www.nmfs.noaa.gov/ole/">http://www.nmfs.noaa.gov/ole/</a></td>
</tr>
<tr>
<td>Regional Enforcement Divisions</td>
<td>Ensure compliance with the federal fish and wildlife laws within NOAA's jurisdiction and manage all facets of the regional law enforcement program</td>
<td><a href="http://www.nmfs.noaa.gov/ole/">http://www.nmfs.noaa.gov/ole/</a></td>
</tr>
<tr>
<td>Office of Sustainable Fisheries</td>
<td>Provides the principal source of advice and guidance on matters relating to fishery management, international fisheries, fisheries utilization, and aquaculture, and administers financial assistance programs</td>
<td><a href="http://www.nmfs.noaa.gov/sfa/sfweb/index.htm">http://www.nmfs.noaa.gov/sfa/sfweb/index.htm</a></td>
</tr>
<tr>
<td>Highly Migratory Species</td>
<td>Manages tunas, billfish, swordfish, pelagic sharks, and other highly migratory species</td>
<td><a href="http://www.nmfs.noaa.gov/sfa/hms">http://www.nmfs.noaa.gov/sfa/hms</a></td>
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<tr>
<td>Domestic Fisheries</td>
<td>Coordinates the review of informal and draft fishery management plans and amendments</td>
<td><a href="http://www.nmfs.noaa.gov/sfa/domes_fish/index.htm">http://www.nmfs.noaa.gov/sfa/domes_fish/index.htm</a></td>
</tr>
<tr>
<td>International Fisheries</td>
<td>Coordinates NMFS activities relating to foreign developments having an impact on living marine resources other than those assigned to the Office of Protected Resources</td>
<td><a href="http://www.nmfs.noaa.gov/sfa/international/index.htm">http://www.nmfs.noaa.gov/sfa/international/index.htm</a></td>
</tr>
<tr>
<td>Regulatory Services</td>
<td>Advises on fishery management policies</td>
<td><a href="http://www.nmfs.noaa.gov/sfa/reg_svcs/index.htm">http://www.nmfs.noaa.gov/sfa/reg_svcs/index.htm</a></td>
</tr>
<tr>
<td>National Seafood Inspection Laboratory</td>
<td>Provides technical support services to the National Seafood Inspection Program</td>
<td><a href="http://www.nmfs.noaa.gov/sfa/sfweb/nsil/index.htm">http://www.nmfs.noaa.gov/sfa/sfweb/nsil/index.htm</a></td>
</tr>
<tr>
<td>State/Federal Fisheries</td>
<td>Develops and promotes federal/state &quot;partnership&quot; programs for resource conservation, enhancement, and utilization among NMFS, the coastal states, and the interstate marine fisheries commissions</td>
<td><a href="http://www.nmfs.noaa.gov/sfa/state_federal/state_federal.htm">http://www.nmfs.noaa.gov/sfa/state_federal/state_federal.htm</a></td>
</tr>
<tr>
<td>Office of Protected Resources</td>
<td>Provides program oversight, national policy direction, and guidance on the conservation and management of marine mammals and endangered species, and their habitats, under the jurisdiction of the secretary of commerce</td>
<td><a href="http://www.nmfs.noaa.gov/prot_res/prot_res.html">http://www.nmfs.noaa.gov/prot_res/prot_res.html</a></td>
</tr>
<tr>
<td>Permits, Conservation, and Education</td>
<td>Implements the Marine Mammal Protection Act's regulations concerning marine mammal scientific research, commercial and educational photography, and public display permits and authorizations</td>
<td><a href="http://www.nmfs.noaa.gov/prot_res/PR1/Permits/PR1overview.html">http://www.nmfs.noaa.gov/prot_res/PR1/Permits/PR1overview.html</a></td>
</tr>
<tr>
<td>Marine Mammal Conservation</td>
<td>Develops, implements, and administers programs for the protection, conservation, and recovery of marine mammals under the jurisdiction of the secretary of commerce</td>
<td><a href="http://www.nmfs.noaa.gov/pr/">http://www.nmfs.noaa.gov/pr/</a></td>
</tr>
<tr>
<td>Endangered Species</td>
<td>Develops and implements policies, procedures, and</td>
<td><a href="http://www.nmfs.noaa.gov/pr/about/">http://www.nmfs.noaa.gov/pr/about/</a></td>
</tr>
<tr>
<td>Office of Habitat Conservation</td>
<td>Promotes, influences, and enhances federal actions related to conserving, protecting, managing, enhancing, restoring, and mitigating damage to NOAA trust resources, including species and their habitats</td>
<td><a href="http://www.nmfs.noaa.gov/habitat/">http://www.nmfs.noaa.gov/habitat/</a></td>
</tr>
<tr>
<td>Habitat Protection</td>
<td>Provides day-to-day oversight and coordination on implementing the strategic plan for the National Habitat Program, NMFS Habitat Conservation Policy, and the habitat provisions of the NOAA and NMFS strategic plans</td>
<td><a href="http://www.nmfs.noaa.gov/habitat/habitatprotection/">http://www.nmfs.noaa.gov/habitat/habitatprotection/</a></td>
</tr>
<tr>
<td>NOAA Restoration Center</td>
<td>Advises and guides NOAA’s efforts to restore degraded habitats</td>
<td><a href="http://www.nmfs.noaa.gov/habitat/restoration/">http://www.nmfs.noaa.gov/habitat/restoration/</a></td>
</tr>
<tr>
<td>Ecosystem Assessment</td>
<td>Develops and applies interdisciplinary approaches to studying, monitoring, and managing integrated marine and estuarine systems, and manages NMFS involvement in the NOAA Coral Reef Conservation Program</td>
<td><a href="http://www.nmfs.noaa.gov/habitat/ead/EADhome.htm">http://www.nmfs.noaa.gov/habitat/ead/EADhome.htm</a></td>
</tr>
<tr>
<td>Office of Science and Technology</td>
<td>Advocates and ensures a sound scientific basis for NMFS science programs and resource conservation and management decisions</td>
<td><a href="http://www.nmfs.noaa.gov/st/">http://www.nmfs.noaa.gov/st/</a></td>
</tr>
<tr>
<td>Fisheries Statistics and Economics</td>
<td>Oversees the implementation of the NMFS strategic plan for fisheries scientific-related information management</td>
<td><a href="http://www.st.nmfs.gov/st1/">http://www.st.nmfs.gov/st1/</a></td>
</tr>
<tr>
<td>Research Analysis and Coordination</td>
<td>Provides strategic scientific advice on resource conservation and management issues and operational resource management decisions, and evaluates scientific activities and NMFS performance of its mission from a scientific perspective</td>
<td><a href="http://www.st.nmfs.gov/st2/">http://www.st.nmfs.gov/st2/</a></td>
</tr>
<tr>
<td>Department/Office</td>
<td>Description</td>
<td>Website</td>
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<tr>
<td>Regional Offices</td>
<td>Administer programs to manage living marine resources and their habitats, and fishing industries in NOAA's Alaska Region, Northeast Region, Northwest Region, Southeast Region, and Southwest Region</td>
<td><a href="http://www.nmfs.noaa.gov/regional.htm">http://www.nmfs.noaa.gov/regional.htm</a></td>
</tr>
<tr>
<td>Science Centers</td>
<td>Conduct multidisciplinary research and data collection programs on living marine resources and their habitats, and fishing industries to develop scientific and technical information for the management of these resources</td>
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<tr>
<td>National Ocean Service</td>
<td>Develops the national foundation for coastal and ocean science, management, response, restoration, and navigation</td>
<td><a href="http://oceanservice.noaa.gov">http://oceanservice.noaa.gov</a></td>
</tr>
<tr>
<td>Staff Office for International Programs</td>
<td>Provides a single focal point for NOS-wide international activities and coordinates activities between NOS and national and international governmental agencies, nongovernmental organizations, and donor organizations</td>
<td><a href="http://international.nos.noaa.gov">http://international.nos.noaa.gov</a></td>
</tr>
<tr>
<td>NOAA Coastal Services Center</td>
<td>Serves the nation's local and state coastal resource management programs with new technology, information, and expertise; projects focus on a site-specific issue; lessons learned are then transferred to others in the coastal management community</td>
<td><a href="http://www.csc.noaa.gov">http://www.csc.noaa.gov</a></td>
</tr>
<tr>
<td>Special Projects Office</td>
<td>Promotes integration of program capabilities within and across NOS and NOAA to ensure more effective and efficient delivery of products and services to the coastal stewardship community</td>
<td><a href="http://spo.nos.noaa.gov">http://spo.nos.noaa.gov</a></td>
</tr>
<tr>
<td>Center for Operational Oceanographic Products and Services</td>
<td>Collects and distributes observations and predictions of water levels and currents</td>
<td><a href="http://tidesandcurrents.noaa.gov">http://tidesandcurrents.noaa.gov</a></td>
</tr>
<tr>
<td>Office of Coast Survey</td>
<td>Collects, manages, and compiles the data and information necessary to maintain the national suite of nautical charts and related information</td>
<td><a href="http://nauticalcharts.noaa.gov">http://nauticalcharts.noaa.gov</a></td>
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<tr>
<td>Coast Survey Development Laboratory</td>
<td>Plans and manages the development and improvement of charting, hydrographic, and oceanographic systems to provide products and services for the coastal marine community</td>
<td><a href="http://nauticalcharts.noaa.gov/csdl/">http://nauticalcharts.noaa.gov/csdl/</a></td>
</tr>
<tr>
<td>Marine Chart Division</td>
<td>Manages the national database of nautical charting and marine mapping information, the aggregation of information from external sources for database maintenance, and the production of charting products</td>
<td><a href="http://nauticalcharts.noaa.gov/mcd/">http://nauticalcharts.noaa.gov/mcd/</a></td>
</tr>
<tr>
<td>Hydrographic Surveys Division</td>
<td>Coordinates overall hydrographic, bathymetric, and oceanographic survey activities, including data acquisition and processing in support of the suite of NOAA's nautical charts</td>
<td><a href="http://nauticalcharts.noaa.gov/hsd/hsd-0.html">http://nauticalcharts.noaa.gov/hsd/hsd-0.html</a></td>
</tr>
<tr>
<td>Navigation Services Division</td>
<td>Provides a focal point for customer requests and associated responses on charting issues, short-term hydrographic surveys, and <em>Coast Pilot</em> updates</td>
<td><a href="http://nauticalcharts.noaa.gov/nsd/">http://nauticalcharts.noaa.gov/nsd/</a></td>
</tr>
<tr>
<td>National Geodetic Survey</td>
<td>Defines and manages the National Spatial Reference System (NSRS) and contributes to the coastal mapping program, geodetic surveys, and new surveying instrumentation and procedures</td>
<td><a href="http://www.ngs.noaa.gov">http://www.ngs.noaa.gov</a></td>
</tr>
<tr>
<td>Geodetic Services Division</td>
<td>Provides a direct relationship between NGS and its clients through the state advisor program, geodetic equipment testing and evaluation, product evaluation, marketing, distribution, and various training programs</td>
<td>N/A</td>
</tr>
<tr>
<td>Division</td>
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<td>Website</td>
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<tr>
<td>Spatial Reference System Division</td>
<td>Plans and coordinates geodetic field projects required to preserve and develop the National Spatial Reference System (NSRS)</td>
<td>N/A</td>
</tr>
<tr>
<td>Remote Sensing Division</td>
<td>Plans, coordinates, monitors, and provides technical direction for all NGS programs and activities requiring the use of aerial photographs and remotely sensed data</td>
<td><a href="http://www.ngs.noaa.gov/RSD/rsd_home.shtml">http://www.ngs.noaa.gov/RSD/rsd_home.shtml</a></td>
</tr>
<tr>
<td>Observation and Analysis Division</td>
<td>Conducts geodetic surveys to support the National Spatial Reference System, the location of aeronautical aids to navigation, and the production of airport obstruction charts and coastal maps, charts, and special products in the coastal zone</td>
<td>N/A</td>
</tr>
<tr>
<td>Geosciences Research Division</td>
<td>Conducts research and development in geophysics, including geodynamics and geodesy, and involving the allied fields of radio astronomy and computer science</td>
<td><a href="http://www.ngs.noaa.gov/GRD/">http://www.ngs.noaa.gov/GRD/</a></td>
</tr>
<tr>
<td>Office of Ocean and Coastal Resource Management</td>
<td>Directs the development, implementation, evaluation, and funding of state coastal zone management programs, coastal nonpoint source pollution programs, National Estuarine Research Reserves, and related activities under the Coastal Zone Management Act</td>
<td><a href="http://coastalmanagement.noaa.gov">http://coastalmanagement.noaa.gov</a></td>
</tr>
<tr>
<td>Coastal Programs Division</td>
<td>Implements the national dimension of the Coastal Zone Management (CZM) Program, supports the national system of state, territorial, and commonwealth CZM programs managing coastal resources, and provides policy and program support on coastal management issues</td>
<td><a href="http://coastalmanagement.noaa.gov/czm/">http://coastalmanagement.noaa.gov/czm/</a></td>
</tr>
<tr>
<td>Estuarine Reserves Division</td>
<td>Responsible for directing the National Estuarine Research Reserve System (NERRS), and acts as OCRM's representative to states, territories, and other federal agencies.</td>
<td><a href="http://nerrs.noaa.gov">http://nerrs.noaa.gov</a></td>
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<tr>
<td>Division</td>
<td>Description</td>
<td>Website</td>
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<tr>
<td>National Policy and Evaluation Division</td>
<td>Responsible for providing leadership and coordinating the development of policy analysis and position papers on issues affecting the Coastal Zone Management Act; and works with NOS and NOAA policy offices to ensure that information about the potential impact of legislation on the coastal states is fully understood by Congress</td>
<td>N/A</td>
</tr>
<tr>
<td>Marine Sanctuaries Division</td>
<td>Identifies, designates, and operates coastal and marine protected areas for purposes of resource protection, monitoring, research, interpretation, and education</td>
<td><a href="http://sanctuaries.noaa.gov">http://sanctuaries.noaa.gov</a></td>
</tr>
<tr>
<td>National Marine Protected Areas Center</td>
<td>Facilitates the effective use of science, technology, training, and information in the planning, management, and evaluation of the nation's system of marine protected areas</td>
<td><a href="http://www.mpa.gov/mpa_center/mpa_center.html">http://www.mpa.gov/mpa_center/mpa_center.html</a></td>
</tr>
<tr>
<td>Office of Response and Restoration</td>
<td>Prevents and mitigates risks to coastal habitats and resources from oil and hazardous materials releases</td>
<td><a href="http://response.restoration.noaa.gov">http://response.restoration.noaa.gov</a></td>
</tr>
<tr>
<td>Hazardous Materials Response Division</td>
<td>Responds to oil and chemical spills in U.S. coastal and navigable waters</td>
<td><a href="http://response.restoration.noaa.gov/intro/orr.html#hmrd">http://response.restoration.noaa.gov/intro/orr.html#hmrd</a></td>
</tr>
<tr>
<td>Coastal Protection and Restoration Division</td>
<td>Protects and restores coastal habitats and resources affected by hazardous materials releases</td>
<td><a href="http://response.restoration.noaa.gov/cpr/cpr.html">http://response.restoration.noaa.gov/cpr/cpr.html</a></td>
</tr>
<tr>
<td>Damage Assessment Center</td>
<td>Carries out natural resources damage assessments for releases of oil and hazardous substances</td>
<td><a href="http://response.restoration.noaa.gov/intro/orr.html#dac">http://response.restoration.noaa.gov/intro/orr.html#dac</a></td>
</tr>
<tr>
<td>National Centers for Coastal Ocean Science</td>
<td>Provides national leadership in ocean, coastal, and Great Lakes science that builds the strong scientific foundation essential for sustainable use of coastal resources</td>
<td><a href="http://coastalscience.noaa.gov">http://coastalscience.noaa.gov</a></td>
</tr>
<tr>
<td>Center for Coastal Monitoring and Assessment</td>
<td>Evaluates the environmental quality of U.S. coastal, estuarine, and Great Lakes areas, and the ecosystem consequences of current and potential anthropogenic stresses on these areas</td>
<td><a href="http://www.ccma.nos.noaa.gov">http://www.ccma.nos.noaa.gov</a></td>
</tr>
<tr>
<td>Center for Sponsored Coastal Ocean Research</td>
<td>Conducts research to improve the understanding and prediction of coastal, estuarine, and Great Lakes dynamics and resources to support sustainable use of living and nonliving resources and to protect life and property</td>
<td><a href="http://www.cop.noaa.gov">http://www.cop.noaa.gov</a></td>
</tr>
<tr>
<td>Center for Coastal Fisheries and Habitat Research at Beaufort</td>
<td>Conducts research on coastal habitat requirements of early life stages of economically important fish, development of ecologically based habitat restoration criteria, and effects of contaminants on living resources</td>
<td><a href="http://shrimp.ccfhrb.noaa.gov">http://shrimp.ccfhrb.noaa.gov</a></td>
</tr>
<tr>
<td>Center for Coastal Env. Health and Biomolecular Research at Charleston</td>
<td>Conducts interdisciplinary research to resolve issues related to coastal ecosystem health and environmental quality, including public health impacts</td>
<td><a href="http://www.chbr.noaa.gov">http://www.chbr.noaa.gov</a></td>
</tr>
<tr>
<td><strong>National Weather Service</strong></td>
<td>Provides weather, hydrologic, and climate forecasts and warnings for the United States and its territories, adjacent waters, and ocean areas</td>
<td><a href="http://www.nws.noaa.gov">http://www.nws.noaa.gov</a></td>
</tr>
<tr>
<td>International Activities Office</td>
<td>Promotes the international interests of the U.S. meteorologic and hydrologic communities, improving the levels of science, technology, operations, and services worldwide</td>
<td><a href="http://www.nws.noaa.gov/iao/site/iao_home_ie.htm">http://www.nws.noaa.gov/iao/site/iao_home_ie.htm</a></td>
</tr>
<tr>
<td>Office of Science and Technology</td>
<td>Plans, develops, demonstrates, and integrates scientific techniques and system capabilities in response to service requirements of NWS warning and forecast operations at field offices and national centers</td>
<td><a href="http://www.nws.noaa.gov/ost/">http://www.nws.noaa.gov/ost/</a></td>
</tr>
<tr>
<td>Meteorological Development Laboratory</td>
<td>Develops and implements scientific techniques into NWS operations</td>
<td><a href="http://www.nws.noaa.gov/mdl/">http://www.nws.noaa.gov/mdl/</a></td>
</tr>
<tr>
<td>Organization</td>
<td>Description</td>
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<tr>
<td>Office of Hydrologic Development</td>
<td>Identifies requirements for the development, testing, and support of hydrologic forecast algorithms/tools and hydrologic data to improve efficiency and effectiveness of NWS hydrologic operations and services</td>
<td><a href="http://www.nws.noaa.gov/oh/">http://www.nws.noaa.gov/oh/</a></td>
</tr>
<tr>
<td>Hydrology Laboratory</td>
<td>Conducts studies, investigations, and analyses leading to the application of new scientific and computer technologies for hydrologic forecasting and related water resource problems</td>
<td><a href="http://www.nws.noaa.gov/oh/hrl/">http://www.nws.noaa.gov/oh/hrl/</a></td>
</tr>
<tr>
<td>Office of Climate, Water, and Weather Services</td>
<td>Oversees delivery of hydrometeorological and climate services and the design and implementation of future products and services</td>
<td><a href="http://www.nws.noaa.gov/om/">http://www.nws.noaa.gov/om/</a></td>
</tr>
<tr>
<td>Meteorological Services Division</td>
<td>Oversees NWS meteorological warning and forecast operation plans, policies, and procedures</td>
<td><a href="http://www.nws.noaa.gov/om/msd/index.shtml">http://www.nws.noaa.gov/om/msd/index.shtml</a></td>
</tr>
<tr>
<td>Hydrologic Services Division</td>
<td>Oversees NWS hydrologic warning and forecast operation plans, policies, and procedures</td>
<td><a href="http://www.nws.noaa.gov/om/water/index.shtml">http://www.nws.noaa.gov/om/water/index.shtml</a></td>
</tr>
<tr>
<td>Climate Services Division</td>
<td>Oversees NWS climate prediction operations plans, policies, and procedures</td>
<td><a href="http://www.nws.noaa.gov/om/csd/index.shtml">http://www.nws.noaa.gov/om/csd/index.shtml</a></td>
</tr>
<tr>
<td>Observing Services Division</td>
<td>Oversees plans, policies, and procedures for observing systems critical to NWS operations</td>
<td><a href="http://www.nws.noaa.gov/om/osd/index.shtml">http://www.nws.noaa.gov/om/osd/index.shtml</a></td>
</tr>
<tr>
<td>Office of Operational Systems</td>
<td>Manages operational weather systems and provides system engineering, software management, facilities engineering services, communications, and logistical services</td>
<td><a href="http://www.nws.noaa.gov/oos/index.html">http://www.nws.noaa.gov/oos/index.html</a></td>
</tr>
<tr>
<td>Maintenance, Logistics &amp; Acquisition</td>
<td>Develops maintenance, logistics, acquisition, engineering, configuration management and safety/environmental compliance policies, procedures, and directives for NWS systems</td>
<td><a href="http://www.ops1.nws.noaa.gov">http://www.ops1.nws.noaa.gov</a></td>
</tr>
<tr>
<td>National Data Buoy Center</td>
<td>Manages the development, operations, and</td>
<td><a href="http://seaboard.ndbc.noaa.gov/">http://seaboard.ndbc.noaa.gov/</a></td>
</tr>
<tr>
<td>National Centers for Environmental Prediction</td>
<td>Develop, produce, and process meteorological, short-term climate, and oceanographic guidance forecast and enhanced forecast and warning products</td>
<td><a href="http://www.ncep.noaa.gov">http://www.ncep.noaa.gov</a></td>
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<tr>
<td>Environmental Modeling Center</td>
<td>Improves numerical weather, marine, and climate predictions at NCEP through a broad program of research in data assimilation and modeling</td>
<td><a href="http://www.emc.ncep.noaa.gov">http://www.emc.ncep.noaa.gov</a></td>
</tr>
<tr>
<td>Hydrometeorological Prediction Center</td>
<td>Provides basic hydrometeorological analyses and forecasts for NWS field offices and other meteorological interests</td>
<td><a href="http://www.hpc.ncep.noaa.gov">http://www.hpc.ncep.noaa.gov</a></td>
</tr>
<tr>
<td>Ocean Prediction Center</td>
<td>Originates and issues marine warnings and forecasts, continually monitors and analyzes maritime data, and provides guidance on marine atmospheric variables</td>
<td><a href="http://www.opc.ncep.noaa.gov">http://www.opc.ncep.noaa.gov</a></td>
</tr>
<tr>
<td>Climate Prediction Center</td>
<td>Provides climate services consisting of operational prediction of climate variability, monitoring of the climate system and development of databases for determining current climate anomalies and trends, and assessments of the origins of major climate anomalies</td>
<td><a href="http://www.cpc.ncep.noaa.gov">http://www.cpc.ncep.noaa.gov</a></td>
</tr>
<tr>
<td>Aviation Weather Center</td>
<td>Enhances aviation safety by issuing accurate warnings, forecasts, and analyses of hazardous weather for aviation interests</td>
<td><a href="http://aviationweather.gov">http://aviationweather.gov</a></td>
</tr>
<tr>
<td>Storm Prediction Center</td>
<td>Provides timely and accurate forecasts and watches for severe thunderstorms and tornadoes over the contiguous United States</td>
<td><a href="http://www.spc.noaa.gov">http://www.spc.noaa.gov</a></td>
</tr>
<tr>
<td>Tropical Prediction Center</td>
<td>Issues watches, warnings, forecasts, and analyses of hazardous weather conditions in the tropics, both in domestic and international communities</td>
<td><a href="http://www.nhc.noaa.gov">http://www.nhc.noaa.gov</a></td>
</tr>
<tr>
<td>Regional Offices</td>
<td>Manage all operational and scientific meteorological and hydrologic programs of the respective field offices, and adjust plans, policies, and resources affecting these programs</td>
<td><a href="http://www.nws.noaa.gov/organization.html">http://www.nws.noaa.gov/organization.html</a></td>
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<tr>
<td>Office of Oceanic and Atmospheric Research</td>
<td>Conducts research, develops products, and provides scientific information and leadership toward fostering NOAA's evolving environmental and economic mission</td>
<td><a href="http://www.oar.noaa.gov">http://www.oar.noaa.gov</a></td>
</tr>
<tr>
<td>Arctic Research Office</td>
<td>Serves as the focal point for NOAA's research activities in the Arctic, Bering Sea, North Pacific, and North Atlantic regions</td>
<td><a href="http://www.arctic.noaa.gov/aroc/">http://www.arctic.noaa.gov/aroc/</a></td>
</tr>
<tr>
<td>Office of Weather and Air Quality</td>
<td>Provides leadership and direction in the development of weather and air quality research programs, priorities, and policies in OAR and across NOAA</td>
<td>N/A</td>
</tr>
<tr>
<td>National Sea Grant College Program</td>
<td>Encourages the wise stewardship of our marine resources through research, education, outreach, and technology transfer</td>
<td><a href="http://www.nsgc.seagrant.org">http://www.nsgc.seagrant.org</a></td>
</tr>
<tr>
<td>Office of Global Programs</td>
<td>Leads the NOAA Climate and Global Change (C&amp;GC) Program and sponsors focused scientific research aimed at understanding climate variability and its predictability</td>
<td><a href="http://www.ogp.noaa.gov">http://www.ogp.noaa.gov</a></td>
</tr>
<tr>
<td>NOAA's Undersea Research Program</td>
<td>Provides undersea scientists with the tools and expertise they need to work in the undersea environment</td>
<td><a href="http://www.nurp.noaa.gov">http://www.nurp.noaa.gov</a></td>
</tr>
<tr>
<td>Ocean Exploration Program</td>
<td>Supports expeditions, exploration projects, and a number of related field campaigns for the purpose of discovery and documentation of ocean voyages</td>
<td><a href="http://explore.noaa.gov">http://explore.noaa.gov</a></td>
</tr>
<tr>
<td>Environmental Research Laboratories</td>
<td>Conduct theoretical and analytical studies and laboratory and field experiments to improve NOAA's capabilities, and provide leadership on environmental science</td>
<td><a href="http://www.oar.noaa.gov/organization/programs/labs.html">http://www.oar.noaa.gov/organization/programs/labs.html</a></td>
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</table>
issues of national and international importance. The Environmental Research Laboratories include the following:
Aeronomy Laboratory, Air Resources Laboratory, Atlantic Oceanographic & Meteorological Laboratory, Climate Diagnostics Center, Climate Monitoring & Diagnostics Laboratory, Environmental Technology Laboratory, Forecast Systems Laboratory, Geophysical Fluid Dynamics Laboratory, Great Lakes Environmental Research Laboratory, National Severe Storms Laboratory, Pacific Marine Environmental Laboratory, and the Space Environment Center

<p>| National Environmental Satellite, Data, and Information Service | Administers the development and use of all operational civilian satellite-based environmental remote sensing systems and the national and international acquisition, processing, dissemination, and exchange of environmental data | <a href="http://www.nesdis.noaa.gov">http://www.nesdis.noaa.gov</a> |
| Geospatial Data and Climate Services | Provides data, information, and services needed to support environmental studies and predictions, resource assessments, data archiving, and dissemination | <a href="http://www.eis.noaa.gov">http://www.eis.noaa.gov</a> |
| National Oceanographic Data Center | Develops and maintains a national marine environmental database, including acquisition, processing, storage, and retrieval of marine data and information generated by domestic and foreign activities | <a href="http://www.nodc.noaa.gov">http://www.nodc.noaa.gov</a> |
| Information Systems &amp; Management | Acquires, inventories, processes, provides quality control for, and distributes marine environmental data | N/A |
| NOAA Central Library | Oversees a national library and information system for the collection, evaluation, and dissemination of specialized information in | <a href="http://www.lib.noaa.gov">http://www.lib.noaa.gov</a> |</p>
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<tr>
<th>Organization</th>
<th>Description</th>
<th>Website</th>
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<tr>
<td>Ocean Climate Laboratory</td>
<td>Performs scientific analyses; develops improved ocean climatologies for annual, seasonal, and monthly compositing periods; investigates ocean climate variability; builds scientifically, quality-controlled global oceanographic databases; and facilitates international exchange of oceanographic data</td>
<td><a href="http://www.nodc.noaa.gov/OC5/">http://www.nodc.noaa.gov/OC5/</a></td>
</tr>
<tr>
<td>Coastal Ocean Laboratory</td>
<td>Participates in the acquisition of global oceanographic data, with emphasis on the coastal oceans, estuaries, bays, adjoining seas, and the Great Lakes; processes the data; and ingests the data into databases</td>
<td><a href="http://www.nodc.noaa.gov/col/">http://www.nodc.noaa.gov/col/</a></td>
</tr>
<tr>
<td>National Coastal Data Development Center</td>
<td>Provides for the archive of, and access to, the long-term coastal data record</td>
<td><a href="http://www.ncddc.noaa.gov">http://www.ncddc.noaa.gov</a></td>
</tr>
<tr>
<td>Office of Satellite Data Processing &amp; Distribution</td>
<td>Manages and directs the operation of the central ground facilities that ingest, process, and distribute environmental satellite data and derived products to domestic and foreign users</td>
<td><a href="http://www.osdpm.noaa.gov">http://www.osdpm.noaa.gov</a></td>
</tr>
<tr>
<td>Satellite Services Division</td>
<td>Provides data, analyses, and interpretations from polar orbiting and geostationary satellites</td>
<td><a href="http://www.ssd.noaa.gov">http://www.ssd.noaa.gov</a></td>
</tr>
<tr>
<td>Information Processing Division</td>
<td>Manages the NOAA central satellite information technology systems necessary for the production, distribution, and on-line access of operational environmental satellite products and services that NESDIS generates to meet the requirements of a wide variety of users</td>
<td><a href="http://www.osdpm.noaa.gov/IPD/IPD.html">http://www.osdpm.noaa.gov/IPD/IPD.html</a></td>
</tr>
<tr>
<td>Direct Services Division</td>
<td>Serves as the primary user interface for all direct satellite services from United States operational environmental geostationary</td>
<td><a href="http://noaasis.noaa.gov/DSD">http://noaasis.noaa.gov/DSD</a></td>
</tr>
<tr>
<td><strong>National Geophysical Data Center</strong></td>
<td>Conducts a data and data-information service in all scientific and technical areas involving solid earth geophysics, marine geology and geophysics, glaciology, the space environment, solar activity, and the other areas of solar-terrestrial physics</td>
<td><a href="http://www.ngdc.noaa.gov">http://www.ngdc.noaa.gov</a></td>
</tr>
<tr>
<td><strong>Solid Earth Geophysics</strong></td>
<td>Manages environmental data related to the solid earth collected from land, aircraft, and satellite platforms</td>
<td><a href="http://www.ngdc.noaa.gov/seg/">http://www.ngdc.noaa.gov/seg/</a></td>
</tr>
<tr>
<td><strong>Solar-Terrestrial Physics</strong></td>
<td>Provides services for solar-terrestrial environmental data, including data and information acquisition, management, and analysis, and disseminates data electronically and in publications</td>
<td><a href="http://www.ngdc.noaa.gov/stp/">http://www.ngdc.noaa.gov/stp/</a></td>
</tr>
<tr>
<td><strong>Marine Geology and Geophysics</strong></td>
<td>Responsible for full data services for marine geological and geophysical data, including acquisition, management, and analysis, and dissemination of data and preparation of manuscripts for publication</td>
<td><a href="http://www.ngdc.noaa.gov/mgg/">http://www.ngdc.noaa.gov/mgg/</a></td>
</tr>
<tr>
<td><strong>National Climatic Data Center</strong></td>
<td>Responsible for data management activities in support of scientific and technical programs involving remotely sensed and in-situ retrospective meteorological data and climatological information</td>
<td><a href="http://www.ncdc.noaa.gov">http://www.ncdc.noaa.gov</a></td>
</tr>
<tr>
<td><strong>Data Operations</strong></td>
<td>Acquires, inventories, organizes, processes, and performs quality control of surface (land and marine), upper-air meteorological/climatological data, weather radar, and other information</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Scientific Services</strong></td>
<td>Responsible for the scientific integrity and quality of NCDC's data sets and products</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Climate Services</strong></td>
<td>Provides access to climatological data and information originating from</td>
<td>N/A</td>
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<tr>
<td>Division</td>
<td>Description</td>
<td>Website</td>
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<tr>
<td>Remote Sensing and Applications Division</td>
<td>Provides scientific leadership in the use of NCDC's satellite and radar data sets, and is responsible for managing the NCDC Technical Library, a component of the NOAA Library System.</td>
<td>N/A</td>
</tr>
<tr>
<td>Office of Research and Applications</td>
<td>Provides guidance for the development and evolution of spacecraft and sensors, and conducts atmospheric, climatological, and oceanographic research on the use of satellite data for monitoring environmental characteristics and their change.</td>
<td><a href="http://www.orbit.nesdis.noaa.gov/star/">http://www.orbit.nesdis.noaa.gov/star/</a></td>
</tr>
<tr>
<td>Satellite Oceanography Division</td>
<td>Conducts research on the use of satellite data for understanding and monitoring the ocean and coastal environments.</td>
<td>N/A</td>
</tr>
<tr>
<td>Satellite Meteorology and Climatology Division</td>
<td>Conducts research on the use of satellite data for monitoring meteorological, climatological, and environmental characteristics.</td>
<td><a href="http://www.orbit.nesdis.noaa.gov/smcd/">http://www.orbit.nesdis.noaa.gov/smcd/</a></td>
</tr>
<tr>
<td>Cooperative Research Programs</td>
<td>Provide oversight, management, and direction to a coast-to-coast government and university-based research coalition for remote sensing in the environment.</td>
<td><a href="http://rammb.cira.colostate.edu/corp/">http://rammb.cira.colostate.edu/corp/</a></td>
</tr>
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</table>
The NOAA Organizational Chart for Coastal Managers was developed for coastal managers and staff to facilitate their understanding of the organizational structure, role, and responsibilities of NOAA offices involved in coastal management activities. While the mission of NOAA is broad and comprehensive, this chart is limited to the portion of NOAA that applies to coastal resource management. Additional information about each office is linked to the chart.
Secretary of the Treasury Alexander Hamilton envisioned a unique maritime service in 1787, when he proclaimed a few armed vessels, judiciously stationed at the entrances of our ports, might at a small expense be made useful sentinels of our laws. On August 4, 1790, the new Congress authorized President George Washington to build and deploy up to ten Revenue Cutters to serve on the front lines of the new nation's maritime sovereignty and enforce tariffs and customs duties on inbound trade. Soon after its inception, however, the scope of responsibility of the Revenue Marine (later called the Revenue Cutter Service) began to grow. Clearly, more than just a few armed vessels stationed at the entrances of our ports would be required to ensure America’s security.

With time the Revenue Cutter Service fulfilled an ever-lengthening list of maritime roles. The Revenue Cutter Service ultimately joined with the Life-Saving Service to form the United States Coast Guard in 1915. The new armed service also absorbed several other agencies in the ensuing years to counter a wide range of national security threats. The Services expanded duties included the enforcement of laws against the smuggling of alcohol during Prohibition, the smuggling of illegal drugs and migrants, and the protection of American marine environment and fisheries, among other regulatory functions such as inspecting and regulating the steamship industry and licensing professional mariners.