The Stratton Roundtable

Looking Back, Looking Forward:
Lessons from the 1969 Commission on Marine Science, Engineering, and Resources

Proceedings

Organized by:

Center for the Study of Marine Policy
National Ocean Service, NOAA
Ocean Governance Study Group

Friday, May 1, 1998
Hay-Adams Hotel
Washington, D.C.

Acknowledgments

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Editors' Note

The views expressed in the contributions making up this volume are those of the authors and not necessarily those of the organizers (the National Ocean Serivce, NOAA, the Center for the Study of Marine Policy and the Ocean Governance Study Group).

Note on the report cover: The names of Stratton Commission members shown on the front cover are noted on the inside of the back cover.

Cover design: Denise-Pilar Yver

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Lessons from the 1969 Commission on Marine Science, Engineering and Resources (1969)

Proceedings

Edited by Robert W. Knecht*, Biliana Cicin-Sain* and Nancy Foster **
*Center for the Study of Marine Policy, University of Delaware
**National Ocean Service, NOAA

Organized by the Center for the Study of Marine Policy, the National Ocean Serivce, National Oceanic and Atmospheric Administration and the Ocean Governance Study Group, with funding support from the National Ocean Service, NOAA, and the Delaware Sea Grant College Program

1998

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EXECUTIVE SUMMARY

Background

On May 1, 1998, members and staff of the Stratton Commission, whose work in 1969 led to the founding of NOAA, enactment of the 1972 Coastal Zone Management Act, and other important advances in ocean and coastal management, met with today's ocean and coastal leaders. They discussed the establishment and accomplishments of the 1960s commission, current proposals for a new ocean commission, changed conditions, and lessons learned. This is a synopsis of that meeting.

Thirty Years Ago

Impelled by national concern for U.S. leadership in science and education, and growing worries about the condition of valuable coastal areas and living resources, a congressionally mandated, presidentially appointed commission assessed the nation's stake in the oceans and recommended ocean and coastal policy for the United States. The commission set priorities for federal ocean activities that continue to guide this nation. Many of the issues that were addressed 30 years ago remain with us today, although the environmental and management contexts have changed in dramatic ways.

The 1969 Oceans Commission Led to:

- 1972 Coastal Zone Management Act
- U.S. National Oceanic and Atmospheric Administration
- International Decade of Ocean Exploration

Today's Influences and Concerns

A new environmental awareness in the nation—indeed, in much of the world—now influences virtually all aspects of governmental policy. Secure energy supplies have an important place on the geopolitical agenda. Advances in international law have extended the jurisdictions of coastal nations 200 miles offshore for purposes of managing resources. More generally, a remarkable framework of international agreements is increasingly governing international commerce as well as environmental management.

A New Ocean Commission - An Opportunity for the Nation

Against this backdrop, the U.S. Congress is considering the establishment of a new commission on the oceans, to once again assess what is at stake and to recommend actions that will rejuvenate the nation's ocean and coastal policies and programs, and realign them for the future. The Senate has endorsed such a plan, and the idea is progressing in the House of Representatives.

The Roundtable

Believing that a review of events leading up to the first ocean commission, its work and its accomplishments would inform and enrich the present debate, the National Oceanic and Atmospheric Administration, in partnership with the University of Delaware and the Ocean Governance Study Group, organized a roundtable bringing together the principals involved in the first commission and today's leaders, who are developing the proposal for a new national commission. On May 1 1998, 36 leaders from federal and state governments, industry, environmental organizations and academia met to (1) discuss lessons learned from the process of organizing and implementing the first ocean commission; (2) discuss the 1998 proposals and policy context and how they differ from those of the 1960s; and (3) make recommendations concerning the scope and implementation of a new ocean commission.

Summary

Lessons from the First Ocean Commission (1969)

In the late '50s and early '60s, studies and reports on the oceans, in combination with concerns about

Stratton Commission Roundtable Attendees

Members and Staff of the Stratton Commission and Marine Sciences Council (1969)

Lewis Alexander, University of Rhode Island
John A. Knauss, University of Rhode Island
Samuel A. Lawrence, University of Maryland
Edward Wenk, Jr., University of Washington
Robert M. White, Washington Advisory Group

Roundtable Participants

Jack H. Archer, University of Massachusetts
Stephanie Bailenson, Senate Commerce Committee
James Baker, NOAA
Daniel J. Basta, National Ocean Service, NOAA
Charles A. Bookman,The Heinz Center
John R. Botzum, Nautilus Press, Inc.
Biliana Cicin-Sain, University of Delaware
Warner Chabot, Center for Marine Conservation, Monterey, CA
Penny Dalton, Senate Subcommittee on Fisheries and Oceans
Richard Delaney, University of Massachusetts, Boston
Sylvia Earle, SeaWeb
Tim Eichenberg, Center for Marine Conservation
Nancy Foster, National Ocean Service, NOAA
Susan Garbini, National Research Council
Linda Glover, United States Navy
Mary Hope Katsouros, The Heinz Center
Thomas Kitsos, Department of Interior
Robert W. Knecht, University of Delaware
Anthony MacDonald, Coastal States Organization
Christopher G. Mann, House Committee on Resources
Roger McManus, Center for Marine Conservation
Barbara Jean Polo, American Oceans Campaign
John Rayfield, House Subcommittee on Fisheries, Wildlife and Oceans
Jackie Savitz, Coast Alliance
Daniel Sayre, Island Press
Harry Scheiber, University of California, Berkeley
Robert Stewart, National Ocean Industries Association
Carolyn A. Thoroughgood, University of Delaware
John Twiss, Marine Mammal Commission
Eli Weissman, Office of U.S Representative Frank Pallone, Jr. (NJ)
Stanley Wilson, NOAA

science competitiveness launched by the space race (and the associated soul searching), created political momentum and a propitious climate to explore ocean issues at the federal level.

Political champions are important. Interested and committed congressional leaders and staff pushed the oceans cause because of their personal enthusiasm, and not necessarily in response to a groundswell of public opinion or at the behest of constituents. Senior officials in the Executive Branch of government also devoted time and energy to ocean issues. This interest gave the Commission momentum. Its recommendations were widely anticipated.

Careful selection of commission members and staff is crucial. Those close to the process emphasized the central importance of the selection of commission members. The quality of the members' varied backgrounds and expertise, and especially the exceptional talent of the commission chairman and the dedicated staff, were largely responsible for the commission's success.

Adequate time and resources are necessary. Thirty months elapsed between the approval of the legislation for the commission and the commission's presentation of a final report. Participants were doubtful that the work could have been completed any sooner.

The commission should not be constrained by the political process. A commission to study long-term aspects of the issues and a Marine Sciences Council in the Executive Office of the President to coordinate day-to-day issues were established simultaneously as the result of a political compromise. Nevertheless, the council helped facilitate the commission's work without inhibiting or constraining it. Whether this would be the case in the current context is uncertain.

Timing of the final report is a factor. The timing of the commission's report was important. The commision was faced with the choice of delivering its report to a "lame-duck" President who had supported its work, or waiting to share it with his successor, perhaps of a different political party and perhaps less supportive. Either choice presented political difficulties, which were especially thorny due to several recommended changes in governmental organization. In the end, implementation of the report fell to the new Administration (and to the Congress) with the Commission scoring successes with some, although not all, of its recommendations.

The Policy Context Then and Now

Following a decade of studies and congressional hearings, both the Congress and Administration were ready to accept forward-looking ideas concerning the oceans. Though no immediate crisis faced the nation, the perceived "science-math gap" with the Soviet Union, along with the space race, fueled interest in exploring and developing the oceans and their resources.

Americans' view of marine issues has changed. In the 1960s, marine resources were viewed as essentially infinite, and efforts were made to expand their use and accelerate development to grow the economy. Marine resources are now understood to be finite, even fragile. The interconnectedness of all resources on or near the coast, and even far upstream, has become apparent.

Growth in population and trade raise new issues. Nowadays, the global reach of economies sparks concern for national competitiveness in the international arena. Moreover, among the most profound changes has been the encroachment of humanity on the seas. The increase in coastal populations stresses coastal and marine environments. A hopeful trend, however, is people's growing understanding of the resources, in part as a result of sustained research.

The approach to managing marine resources is changing. The traditional players—federal and state governments—have been joined by regional and local governments as well as by industry and the environmental community. The States, especially, are assuming larger roles. In today's world, solutions and innovations may be devised and used by all stakeholders, including multiple levels of government and the private and nonprofit sectors. In the future, management programs will increasingly recognize the limits of the federal budget, the constraints on states, and the power for change that can be achieved through market forces.

The issues today are no less pressing. While the situation today is markedly different from that of 30 years ago, national ocean policy issues are no less pressing. What kind of governance regime is appropriate for our 200-mile-wide, rich and extensive Exclusive Economic Zone? What approaches offer the greatest promise of restoring important fisheries? What policies are needed to improve the management of shorelines? Of coastal watersheds? Of ports? Of the nation's offshore energy and mineral resources? What investments are necessary to continue the benefits to society from advances in ocean sciences? These issues, and others like them, could be usefully addressed in a structured review of current U.S. ocean and coastal policies.

Findings and Questions Concerning a New Ocean Commission

The following findings and questions for a new national ocean and coastal policy review have been gleaned from the papers, presentations and discussions at the roundtable:

- The commission needs a broad mandate, and should be independent
- The quality of the membership of the Stratton Commission had much to do with its effectiveness. Will the commission appointment process set out in the recently mandated Oceans Act result in top-caliber participants in the commission?
- The Stratton Commission chose not to address policy issues related to national security and marine transportation. If these topics are incorporated into the slate of ocean and coastal issues, how will they affect a new commission?
- A mechanism or set of arrangements is needed that will encourage and facilitate federal agencies to

support the work of the commission without inhibiting or constraining it.

- It will be very important to obtain and maintain the interest and support of the White House and the Congress, and to energize the public during the Commission's tenure. Once the commission issues its report, it will be especially important to make sure that its work remains on the agenda, and that its recommendations are given serious attention in both the Executive Branch and Congress.

- The commission will need to undertake a comprehensive analysis of federal ocean programs, e.g., relevant trends, performance indicators, and organizational issues.

Continuing and Building the National Dialogue

What is the National Dialogue? The Stratton Roundtable was one of several 1998 "Year of the Ocean" events to focus national attention on the need to address U.S. ocean policies and programs in the next century.

As a critical element of its mission to enhance coastal stewardship, NOAA's National Ocean Service plans to provide opportunities for an ongoing "National Dialogue" concerning ocean and coastal policy. NOAA, together with its fellow stewards, seeks to explore all of the issues with all interested parties. A national dialogue can characterize the issues and trends, and can engage the interested public in discussions concerning their perceptions of priorities and approaches to solutions.

Milestones toward a National Dialogue on Ocean and Coastal Policy. Recent milestones include the *Year of the Ocean* Discussion Papers, federal ocean agencies report, February 1998; *Our Ocean Future*, report of The Heinz Center, May 1998; the Stratton Roundtable, Washington, DC, May 1998; and the National Oceans Conference, Monterey, CA, June 1998.

Upcoming National Meetings. Two upcoming meetings will address major environmental, economic and other trends that have shaped oceans and coasts activities and policies over the past generation, and that are forecast to do so in the future. The meetings will be held in Washington, DC in September 1998, and Berkeley, CA in October 1998. For information, contact R.W. Knecht or B. Cicin-Sain, phone (302) 831-8086; fax (302) 831-3668.

NOAA invites you to co-host a National Dialogue workshop. Beginning in the fall of 1998, NOAA plans to pursue the National Dialogue in a structured workshop format, and is actively seeking partners to engage in the process. To co-host a national dialogue workshop with NOAA, contact Dr. Nancy Foster, National Ocean Service, 1305 East West Hwy., 13th Fl., Silver Spring, MD 20910; phone (301) 713-3074, ext. 154; fax (301) 713-4269.

Check out NOAA's State of the Coast Report http:/state-of-coast.noaa.gov

NOAA's State of the Coast Report, an interactive Web site on coastal issues, is an important supporting element of the National Dialogue. It provides a powerful capability to share the latest information on coastal and ocean trends. The on-line report also will be used to post results from national dialogue meetings, and to continue discussions using interactive information technology.

THE STRATTON ROUNDTABLE

Drawing Lessons from the Work of the Commission on Marine Science, Engineering and Resources (1969)

Friday, May 1, 1998
Hay-Adams Hotel. Washington, D.C.

Organized by the Center for the Study of Marine Policy, the National Ocean Service, NOAA and the Ocean Governance Study Group, in collaboration with other governmental and non-governmental partners

ROUNDTABLE PURPOSE

The Roundtable will focus on the lessons learned in the Stratton Commission's review of national ocean policy which was conducted between 1966 and 1969—the last time a comprehensive examination of ocean and coastal activities and policy took place. Former members of the Commission and its staff and other invitees will review and assess the way in which the Commission conducted its work and the outcomes achieved with a view toward providing recommendations for the (expected) new ocean policy commission and for other efforts at national ocean policy assessment.

To promote informal discussion, the Roundtable will involve only about 20 participants. To facilitate the dissemination of the "lessons learned" from the Roundtable, two products will be prepared: **1)** a compendium of short papers reflecting the perspectives of Commission participants, staff, and observers, and **2)** a short video based on interviews with the former members and staff of the Stratton Commission.

ROUNDTABLE AGENDA

8:45

- ❑ Coffee in the John Hay Room.

9:00-9:10

- ❑ Welcome and introductions.
  Background and goals of the meeting
  Robert W. Knecht, University of Delaware

9:10-9:15

- ❑ Welcome on behalf of NOAA
  Sally J. Yozell, Deputy Assistant Secretary for Oceans and Atmosphere

9:15-10:30

- ❑ The Stratton Commission: Its Work, Outcomes, and Significance: General Reflections of the Participants
  Moderator, Biliana Cicin-Sain,
  Ocean Governance Study Group
- ❑ Participants in the Stratton Commission Process
  John A. Knauss, Chair, Panel on Environmental Monitoring and on Management and Development of the Coastal Zone
  Robert M. White, Chair, Panel on Marine Science
  Edward Wenk, Jr., Director, Marine Sciences Council
  Samuel A. Lawrence, Stratton Commission Staff Director
  Lewis M. Alexander, Stratton Commission Deputy Staff Director

10:30-10:45

- ❑ Coffee break

10:45-11:15

- ❑ A Historical Analysis of the Role, Function, and Impact of the Stratton Commission
  Harry Scheiber, University of California, Berkeley, School of Law

11:15-11:30

- ❑ The Stratton Commission: Then and Now
  Mary Hope Katsouros, Heinz Center

11:30-12:00

- ❑ Comments and Discussion by Roundtable Participants

12:00-1:00

- ❑ Luncheon, John Hay Room

1:00-2:00

- ❑ The Stratton Commission: What Worked Well, What Worked Less Well?

  General discussion
  Moderator: *Thomas R. Kitsos*, Minerals Management Service, formerly with Merchant Marine and Fisheries Committee
  • Preparatory work (if any)
  • Appointments to the Commission
  • Staffing
  • Issue selection
  • Panel structure
  • Field hearings
  • "Lessons" that can be applied to a new commission

2:00-2:30

- ❑ The Changed Context of the Late 1990s: Forces that Have Affected and Will Affect National Ocean Policy
  Moderator: *Jack H. Archer*, University of Massachusetts

2:30-2:45

- ❑ Ocean Policy Issues Today: Outcomes of the 1998 Heinz Center Workshops
  Charles A. Bookman, Heinz Center

2:45-3:15

- ❑ The Vision for the Oceans Act of 1998
  Moderator *Nancy Foster*, Director, National Ocean Service, NOAA

  Penny Dalton, Senate Commerce Committee
  John Rayfield, House Resources Committee
  Chris Mann, House Resources Committee
  And other staff members of the relevant committees

  Comments:
  Robert Stewart, National Ocean Industries Association
  Roger McManus, Center for Marine Conservation
  Anthony McDonald, Coastal States Organization
  Jack Botzum, Nautilus Press

3:15-3:30

- ❑ Coffee break

3:30-4:30

- ❑ Recommendations for a new National Ocean Policy Commission
  Moderator: *Richard Delaney*, Urban Harbors Institute

  Dr. Knauss, Dr. White, Dr. Wenk, Dr. Alexander and *Dr. Lawrence*
  Comments by other Roundtable Participants

  Some questions for discussion:·

  ⇨ Are there some types of preparatory work that could help a new commission get off to a quicker start?·

  ⇨ How can a commission benefit from access to the resources of the federal government and still conduct an independent assessment?

  ⇨ Is some kind of a federal (or national) ocean policy council needed to work with the commission or should this await the commission's recommendations?

  ⇨ At what stage is public reaction to a commission's work most helpful—at the early formative (input) stage or later when the commission's thinking becomes more concrete?

4:45-5:00

- ❑ Concluding Comments by Roundtable Participants
  Moderator, *Robert W. Knecht*, University of Delaware

5:00

- ❑ Social Hour, Federal Suite
  (hosted by *Dean Carolyn A. Thoroughgood,* Graduate College of Marine Studies and Director, Delaware Sea Grant College Program)

5:00-6:00

- ❑ Personal video interviews of Stratton Commission participants and analysts
  (organized by *Dan Basta,* NOAA/NOS)

SETTING THE STAGE: THEN AND NOW

◈ **Robert W. Knecht[*], Biliana Cicin-Sain[*] and Nancy Foster[**]** ◈

[*]Center for the Study of Marine Policy, University of Delaware
[**] National Ocean Service, NOAA

The United States has the largest and probably richest 200-mile ocean zone (formally the Exclusive Economic Zone) of any nation in the world. Great fisheries lie off New England, the Pacific Northwest and Alaska, and in the Gulf of Mexico; large offshore oil and gas deposits exist in the Gulf and off California and Alaska; stunningly beautiful beaches line virtually all of our shores. And, 95% of the trade that keeps our nation prosperous is carried on those oceans through great ports like New York-New Jersey, Los Angeles-Long Beach and Houston and New Orleans.

Yet, for the most part, we have not done well by our oceans. We have used them as sewers only stopping the practice when the consequences became intolerable. We have seen many of our fish stocks fall to disastrously low levels both because too many of us want to fish and because we carelessly destroy the coastal habitats upon which these valuable resources depend. And, we have seen the national program to explore and develop offshore hydrocarbon deposits reach virtual stalemate in many regions of the country due to intergovernmental conflicts over policy and practice.

But there are some bright spots. Thirty-two years ago, the Congress enacted legislation that focused unprecedented attention on our coasts and oceans and led to the establishment of both a vice president-led Marine Sciences Council and the blue ribbon Stratton Commission and led to the seminal report of that commission in 1969 - *Our Nation and the Sea*. This meeting was prompted by the fact that similar legislation is pending in Congress today and again it offers the prospect of focusing high level attention on the oceans and their value to the American people.

We have, of course, seen many changes since the mid-1960s. The Stratton Commission's good work led directly to the establishment of the nation's ocean agency - NOAA - and to the enactment of innovative coastal zone management legislation. In addition, the decade following the Stratton Commission's report saw a great many new ocean and coastal programs enacted into law - programs dealing with marine mammals, ports and harbors, water quality, marine sanctuaries, ocean dumping, fisheries, offshore oil and gas, and on and on. And, a substantial increase in the interest and capacity of the coastal states and territories to deal with coastal and, increasingly, ocean issues was stimulated by this spate of ocean legislation.

The latter half of the 30-year period since Stratton has seen a corresponding burst of activity at the global level. Growing concern, especially in scientific circles, about two emerging problems - the prospect that mankind's activities were beginning to change the world's climate and, as well, dangerously accelerate the loss of species and biological diversity, coupled with the realization that many of our societies were living unsustainably, led to another seminal event - the United Nations Conference on Environment and Development (the Earth Summit) held in Rio de Janeiro in 1992. Like the decade of the 1970s domestically, the decade of the 1990s has seen international agreements on climate change and biodiversity, it has seen a comprehensive Law of the Sea Convention finally enter into force, and it has seen substantial international programs developed that deal with integrated coastal management, land-based sources of marine pollution, and with the protection and sustainable use of coral reefs.

1998 is a far different time than 1968. The issues of Sputnik and the science-math gap with the USSR which catalized the earlier inquiry have been replaced by issues of international competitiveness, globalization of world trade, north-south relations, climate change, and loss of biodiversity. But the oceans are related to these new issues as they were to the older ones. How we organize to deal with them

and the national goals and policies that we set remain of critical importance to the nation.

The "Year of the Ocean" offers a splendid platform for beginning the new review. The set of issue papers produced by federal agencies, the Heinz Center process, and the National Ocean Conference all help set the stage.

The present meeting - the Stratton Roundtable - and the follow-on dialogues that are planned for the fall and beyond, are the result of collaboration between a scholarly group concerned, since its establishment in 1991, with improved ocean governance - the Ocean Governance Study Group, an academic institution long involved with ocean policy in the United States and close enough to try to do something about it - the Center for the Study of Marine Policy, Graduate College of Marine Studies, University of Delaware, and a government agency interested in enhancing its effectiveness as a coastal and ocean steward -the National Ocean Service of NOAA. Of course, we hope that these activities will also contribute to the "Year of the Ocean" and to setting the stage.

What remains, of course, is for a good Oceans Act to be passed and a well-qualified, well-supported, and well-led ocean policy commission to be put in place. We look forward to that development.

Organization of this Volume

The Stratton Roundtable, convened on May 1, 1998, is the first of a series of Dialogues in National Ocean Policy to be held in 1998-1999 on important national ocean policy issues. The Roundtable brings together a number of former members of the Stratton Commission and its staff, as well as participants from the Congress, Administration, state governments, industry, environmental interests, and academia to discuss what lessons can be learned from the Stratton Commission which may be applicable to a future ocean policy commission.

In this volume may be found, first, a series of reflections on the work of the Stratton Commission and its significance, followed by a number of contributions which analyze current challenges in ocean policy, describe changes which have taken place since the 1960s, and highlight future trends which will affect ocean policy in the next century. Various appendices describe the current ocean policy bills, the process of conducting the Dialogues on National Ocean Policy, as well as future dialogues on ocean policy changes and future trends, and provide information on Roundtable participants and on the Ocean Governance Study Group.

BACKGROUND ON THE STRATTON COMMISSION

◈ **Rosemarie Hinkel** ◈

Center for the Study of Marine Policy
Graduate College of Marine Science
University of Delaware

Introduction

The United Nations has designated 1998 as the International Year of the Ocean, focusing attention on ocean governance worldwide. In the United States, several initiatives in the realm of ocean governance are being considered by Congress. Three similar bills, S.1213, H.R. 2547, and H.R. 3445 have been introduced as "Oceans Acts." S.1213 has passed in the Senate, while H.R. 2547 and H.R. 3445 are pending in the House. The purpose of the Acts is to develop a coordinated and comprehensive ocean and coastal policy for the nation. One of the salient similarities of these bills is that each one calls for the creation of a Commission on Ocean Policy.

The Commission is to report to the President and the Congress on a comprehensive national ocean and coastal policy. The Commission would undertake the following activities as a means of developing the findings and recommendations of its report:

1. review and suggest any necessary modification to United States laws, regulations, and practices necessary to define and implement such policy, consistent with the obligations of the United States under international law;

2. assess the condition and adequacy of investment in existing and planned facilities and equipment associated with ocean and coastal activities including human resources, vessels, computers, satellites, and other appropriate technologies and platforms;

3. review existing and planned ocean and coastal activities of Federal agencies and departments, assess the contribution of such activities to development of an integrated long-range program for oceanography, ocean and coastal resource management, and protection of the marine environment, and identify any such activities in need of reform to improve efficiency and effectiveness;

4. examine and suggest mechanisms to address the interrelationships among ocean and coastal activities, the legal and regulatory framework in which they occur, and their interconnected and cumulative effects on the marine environment, and identify any such activities in need of reform to improve efficiency and effectiveness;

5. review the known and anticipated demands for ocean and coastal resources, including and examination of opportunities and limitations with respect to the use of ocean and coastal resources within the exclusive economic zone, projected impacts in coastal areas, and the adequacy of existing efforts to manage such use and minimize user conflicts;

6. evaluate relationships among Federal, State, and local governments and the private sector for planning and carrying out ocean and coastal activities and address the most appropriate division of responsibility for such activities;

7. identify new opportunities for the development of or investment in new products, technologies, or markets that could contribute to the objectives of [the Oceans] Act;

8. consider the relationship of the ocean and coastal policy of the United States to the United Nations Convention on the Law of the Sea and other international agreements, and actions available to

the United States to effect collaboration between the United States and other nations, including the development of cooperative international programs for oceanography, protection of the marine environment, and ocean and coastal resource management; and

9. engage in any other preparatory work deemed necessary to carry out the duties of the Commission (S.1213).

The Oceans Act provides a significant opportunity to analyze and enhance national ocean and coastal policy. Given the central role a Commission on Ocean Policy will play in this reexamination, it seems fitting to review the work and accomplishments of the first such commission, the Commission on Marine Science, Engineering, and Resources, the so-called Stratton Commission. The work of the Stratton Commission, which was completed in 1969, was the first comprehensive examination of U.S. ocean policy ever conducted. This paper will review historical factors contributing to the creation of the Stratton Commission, the purpose of the Commission, appointments to the Commission, issue selection and panel structure, the work of the Commission, and products and outcomes of the Commission.

Historical Factors Leading to the Creation of the Stratton Commission

The historical spark that catalyzed the chain of events culminating in the creation of the Stratton Commission occurred on October 4, 1957 when the Soviet Union successfully launched "Sputnik" into space. This development left the United States struggling to understand why its own space program lagged behind the Soviets as well as scrambling to find a frontier on which to compete with the Soviets. U.S. science and math education received a great deal of scrutiny and much of the blame for the trouble with the space program. In March, 1959, President Eisenhower established the Federal Council for Science and Technology (FCST) with Executive Order 10807. The Council was created to enhance science and technology planning, to foster greater cooperation between federal agencies, and to advise the President regarding federal programs that had impacts upon multiple federal agencies (Abel, 1981).

In 1959, the National Academy of Sciences published a timely report, *Oceanography 1960-1970*. This report delineated a set of national aims, elucidated methods by which to achieve these aims, and advanced a set of goals for the near future (Abel, 1981). Furthermore, the Academy's report called for a significant increase in federal support for marine sciences (Knecht, Cicin-Sain and Archer, 1988). The National Academy of Sciences Committee on Oceanography (NASCO) was subsequently asked to give a special briefing to the FCST. U.S. policy seemingly found its "new frontier," and oceanography was one of the first issue areas addressed by the FCST (Abel, 1981).

In response to the recommendations put forth by the NASCO, the FCST formally created the Interagency Committee on Oceanography (ICO) and incorporated it into its structure on January 22, 1960. The ICO has been identified as significant for a variety of reasons. The ICO symbolized an innovative method of federal administration. It also presented the FCST with a vehicle through which to address Congress. Furthermore, the ICO stimulated significant interaction between academic institutions and federal agencies. The ICO was longer lived than all of its antecedents and is generally considered to have heralded the beginning of the U.S. "National Ocean Policy Program (Abel, 1981)."

In the mid-1960s, two Congressional initiatives regarding ocean policy were put forth. In 1965, Senator Magnuson introduced S.944, calling for the establishment of a national oceanographic council at the cabinet level. Also in 1965, Representative Rogers introduced H.R.9064, calling for the creation of a National Commission of Oceanography to examine the capacity for a top-rank national oceanographic program. These initiatives coalesced on May 24, 1966 when the Senate and the House agreed on the Marine Resources and Engineering Development Act of 1966. This Act created a cabinet-level council (National Council of Marine Resources and Engineering Development), as per the Magnuson initiative, but stipulated that it would be temporary. The Act also established a commission (Commission on Marine Sciences, Engineering, and Resources (COMSER)) to guarantee continued high-level review of the ocean program. This unprecedented legislation (P.L.89-454)

was signed by President Johnson on June 17, 1966 (Abel, 1981).

The Mission of COMSER

The new Commission was assigned a great deal of responsibility. The task with which COMSER was charged was four-fold. The Commission was:

> ...asked to examine the nation's stake in development, utilization, and preservation of our marine environment; review all current and contemplated marine activities, and to assess their adequacies to achieve the national goals set forth in the act; and on the basis of its studies and assessments, to formulate a comprehensive, long-term national program for our marine affairs designed to meet present and future national needs in the most effective possible manner...And, finally,...to recommend a plan of government organization best adapted to the support of the program and to indicate the expected costs (COMSER, 1969).

Appointments to the Commission

The Marine Resources and Engineering Development Act called for a Commission appointed by the President of 15 members from federal and state governments, industry and academia, augmented by four congressional advisors. The business of actually preparing the list of nominees for COMSER fell to the Secretariat of the National Council of Marine Resources and Engineering Development. Membership was to involve represen- tatives of industrial applications of the sea, academic disciplines including economics, law, foreign affairs, science, engineering, and geography (Wenk, 1972). By October, 1966, the Council had completed the nomination process and submitted its list to the White House. After a few changes were made to the list, President Johnson approved the nominees in December, 1966; the appointments were announced by the White House on January 9, 1967 (Wenk, 1972.) Dr. Julius Stratton was appointed Chairman of the Commission. A former president of the Massachusetts Institute of Technology, Dr. Stratton was serving as the Chairman of the Board of the Ford Foundation at the time of his appointment to the Commission. Samuel Lawrence of the Office of Management and Budget became the Staff Director for the Commission, and Harold Goodwin of the Sea Grant Program served as Chief Editor of the COMSER report (Abel, 1981). A complete list of Commission members may be found in Appendix 1.

Issue Selection and Panel Structure

Except for the question of government reorganization, which the Commission chose to approach as a committee of the whole, the Stratton Commission began its work by dividing itself into working panels. Designed to cover the major issues facing ocean management at that time, seven panels were established. The issue areas were basic science; environmental monitoring and management, and development of the coastal zone; manpower, education, and training; industry and private investment; marine engineering and technology; marine resources; and international matters. Each panel was comprised of an Executive Secretary and two to four Commissioners. Panel members may be found in Appendix 2. The panels functioned as the principal vehicle for evaluating the status of marine affairs in their respective areas. The panels also recognized specific problems and opportunities relevant to their issue areas and recommended measures to be taken (COMSER, 1969).

The Work

Each panel held hearings across the country and most panels heard testimony from more than 100 witnesses representing federal and state government, research institutions and industry. Furthermore, each panel contacted hundreds of individuals through corres-pondence and interviews (COMSER, 1969). As a whole, the Commission's fact-finding hearings included more than 1,000 people. The scope and pace of the work soon exceeded the capacity of the original staff. The Marine Sciences Council initially underwrote transfers of limited funds in order to provide the Commission with a larger staff. Samuel Lawrence managed to augment the Commission's original staff beyond the extent of direct congressional appropriations by borrowing individuals from government agencies. The Commission's staff eventually reached 35, triple the initial allocation of the Budget Bureau (Wenk, 1972).

After the hearings and interviews, the panels conducted primary evaluations of their issue areas and developed material to be presented to the full Commission. Contractors and consultants also prepared reports and materials for the consideration of the Commission. The full Commission held a total of 19 meetings, each lasting from two to four days. After nearly two years, COMSER produced its final report. The four volume report, titled *Our Nation and the Sea*, was published in January, 1969 (COMSER, 1969; Abel, 1981).

Outcomes and Impacts

"Our Nation and the Sea" emphasized three main issues that confronted U.S. efforts to effectively utilize ocean resources. The first of these was the idea of the ocean as a "new frontier" for resource development. Second, the report recognized emerging threats to the coastal environment from overexploitation and pollution. Third, and most noticeably, the report presented a detailed plan to reorganize Federal ocean and coastal programs. While *Our Nation and the Sea* made hundreds of recommendations, the third section of the report, "Management of the Coastal Zone," received the most attention. In this chapter, the Commission advised the creation of a new, independent agency to coordinate marine-related activities. The Commission proposed that the new agency be comprised of the U.S. Coast Guard, the Environmental Science Service Administration, the Bureau of Commercial Fisheries, the National Sea Grant Program, the U.S. Lake Survey, and the National Oceanographic Data Center. Despite opposition from several cabinet-level departments, the idea of a new ocean agency was advanced by President Nixon in his Reorganization Plan Number Four. Sent to Congress in July, 1970, the plan proposed the establishment of a National Oceanic and Atmospheric Administration. Nixon's plan differed from the Commission's recommendations in three fundamental areas. First, the plan placed NOAA in the Commerce Department, thus ignoring the Commission's recommendation that the agency be granted independent status. Second, the Coast Guard was not included. Third, functions centering around marine technology were not conferred to the new agency (Bowen, 1981). The Stratton Commission also recommended the establishment of a national coastal zone management program. The Federal Coastal Zone Management Act was passed in 1972, and remains the basis of Federal and state policy coordination in the coastal zone.

Many of the factors and pressures that led to the work of the Stratton Commission are still extant today. Population pressure, pollution, and overexploitation of resources are still prevalent issues in the realm of coastal management. The nation continues to lack an overarching National Ocean Policy. The "general disarray" of Federal ocean management has been complicated by the introduction of multiple, sectoral acts, such as the Marine Mammal Protection Act, the Outer Continental Shelf Lands Act Amendments, the Magnuson Act, and many others. The Stratton Commission was the first commission to comprehensively review the status of U.S. ocean policy. In the 30 years that have passed since the Stratton Commission reported on its findings, the political, economic, social, and regulatory contexts in the U.S. have changed significantly. Given the attention focused on marine issues due to the International Year of the Ocean a new examination of the status of U.S. ocean policy is both timely and appropriate.

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Appendix 1

Members of the Stratton Commission

Chairman:
Julius A. Stratton
Chairman
The Ford Foundation

Vice Chairman:
Richard A. Geyer
Head
Department of Oceanography
Texas A&M University

David A. Adams
Commissioner of Fisheries
NC Department of Conservation and Development

Carl A. Auerbach
Professor of Law
University of Minnesota

Charles F. Baird
Under Secretary of the Navy

Jacob Blaustein
Director
Standard Oil Company (Indiana)

James A. Crutchfield
Professor of Economics
University of Washington

Frank C. DiLuzio
Assistant Secretary
Water Pollution Control
U.S. Department of the Interior

Leon Jaworski
Attorney
Fulbright, Crooker, Freeman, Bates and Jaworski

John A. Knauss
Dean
Graduate School of Oceanography
University of Rhode Island

John H. Perry, Jr.
President
Perry Publications, Inc.

Taylor A. Pryor
President
The Oceanic Foundation

George E. Reedy
President
Struthers Research and Development Corporation

George H. Sullivan, M.D.
Consulting Scientist
General Electric Reentry Systems

Robert M. White
Administrator
Environmental Science Services Administration
U.S. Department of Commerce

Congressional Advisors:
Norris Cotton
U.S. Senator

Warren G. Magnuson
U.S. Senator

Alton A. Lennon
U.S. Representative

Charles A. Mosher
U.S. Representative

Staff

Executive Director:
Samuel A. Lawrence

Deputy Director:
Lewis M. Alexander

Assistant Director, Organization and Management:
Clifford L. Berg

John P. Albers
William S. Bellar
David S. Browning
Lincoln D. Cathers
Timothy J. Coleman
John J. Dermody
Robertson P. Dinsmore
Kenneth H. Drummond

Andrew G. Feil, Jr.
Harold L. Goodwin
Amor L. Lane
H. Crane Miller
Homes S. Moore
Sheila A. Mulvihill
Merlyn E. Natto
Leon S. Pocinki
Stuart A. Ross
Carl E. Rudiger
William J. Ruhe
Carleton Rutledge, Jr.
Robert J. Shephard
R. Lawrence Snideman II

Supporting Staff:
William L. Banks
Margaret R. Bickford
Lois A. Brooks
Josephine V. Haley
Louise A. Jones
Linda J. Kuebler
Helen I. Mehl
Jean H. Peterson
Emily G. Reeves
Joanne M. Schirk

Appendix 2

Membership of the Commission's Working Panels

Panel on Basic Science
Robert M. White, Chairman
John A. Knauss

Panel on Environmental Monitoring and on Management and Development of the Coastal Zone
John A. Knauss, Chairman
Frank C. DiLuzio
Leon Jaworski
Robert M. White

Panel on Manpower, Education, and Training
Julius A. Stratton, Chairman
Richard A. Geyer
David A. Adams

Panel on Industry and Private Investment
Richard A. Geyer, Chairman
Charles F. Baird
Taylor A. Pryor
George H. Sullivan

Panel on Marine Engineering and Technology
John H. Perry, Jr., Chairman
Charles F. Baird
Taylor A. Pryor
George H. Sullivan

Panel on Marine Resources
James A. Crutchfield, Chairman
David A. Adams

International Panel
Carl A. Auerbach, Chairman
Jacob Blaustein
Leon Jaworski

THE ORIGINS OF THE STRATTON COMMISSION

◈ **John A. Knauss** ◈

Chair, Panel on Environmental Monitoring and on Management and Development of the Coastal Zone, Stratton Comission, and former NOAA Administrator

The Stratton Commission report of January, 1969 was the culmination of an effort that began almost exactly ten years earlier with the February, 1959 publication of the NASCO report, *Oceanography 1960-1970*. NASCO was the 10 member National Academy of Science's Committee on Oceanography, chaired by the Cal Tech geochemist Harrison Brown whose members included Maurice Ewing, Columbus Iselin and Roger Revelle, the directors of the three major oceanographic institutions, Lamont, Woods Hole and Scripps.

The timing was propitious. NASCO was formed in November, 1957, one month after the launch of the first Russian satellite, which served as a wake-up call for the need for a more aggressive US science policy and the needs of US science. President Eisenhower established the position of President's Science Adviser and appointed MIT president, James R. Killian to the post. The NSF budget doubled in two years.

However, even in propitious times Academy reports can gather dust. Harrison Brown and his colleagues, presumably with the blessing of NAS president Detlev Bronk, took its report to Congress. They were well received. Members of Congress and their staffs were flown by the Navy to Lubec, Maine for the annual summer meeting of NASCO at the welcoming home of its most astute political member, Sumner Pike, a banker and former member of the Atomic Energy Commission.

Ed Wenk, whose book *The Politics of the Ocean* covers this period, describes in some detail the effect of the NASCO report. Regular calls were made on Capitol Hill by Brown and other NASCO members. Hearings were held and resolutions on the importance of oceanography were passed with near unanimity. Next came legislation. One authorized the Coast and Geodetic Survey to conduct activities beyond the narrow coastal area it had been limited to for the first century of its existence. Another gave the Coast Guard explicit authority to conduct oceanographic research.

And in due time both the House and the Senate took up the question of how the Administration was organized to meet the challenges of the NASCO report. Whether in response to NASCO, or as part of the general upgrading of science after Sputnik, the Eisenhower Administration had taken its informal, but effective, Coordinating Committee on Oceanography and renamed it the Intergovernmental Committee on Oceanography (ICO), upgraded the level of the membership, and formalized its status under the new (Sputnik generated) Federal Council for Science and Technology (FCST). Membership was now at the level of the heads of the Bureau of Commercial Fisheries and the Coast and Geodetic Survey and Assistant Secretary of Navy for R and D. Effective as the new ICO might be, it did not satisfy the new ocean buffs in Congress.

However, Congress had difficulty at first in deciding what they did want, and the Administration (Eisenhower, Kennedy and Johnson), as might be expected, was not enthusiastic about Congress telling it how to organize itself. After some false starts, the Senate led by Washington's Warren Magnuson, chair of the Commerce Committee, decided what was needed was a high level Council consisting of the Secretaries and heads of those departments and independent agencies with significant ocean responsibilities. The House (in part, at least, because of concern that the Administration might veto such a bill because it told the Administration how it should get its act together) pushed for an independent commission to review the situation and report back to the President and Congress.

Neither was prepared to give, and in due time, of course, we got both. In June of 1966 Congress passed,

and President Johnson signed, PL 89-54, the Marine Resources and Engineering Development Act, establishing the cabinet-level National Council on Marine Resources and Engineering Development chaired by the Vice President and the Commission on Marine Science, Engineering and Resources, the latter to be forever known after its chair, Jay Stratton, former president of MIT and, at that time, chairman of the Ford Foundation. Included in the compromise was the agreement that the Council would go out of business 120 days after the Commission submitted its report to the President and to Congress. Implicit in the legislation was the assumption that if the Commission thought that the Cabinet-level council was the preferred way to organize marine affairs within the administration, and so recommended, Congress would then pass legislation making the Council permanent.

As might be guessed, there was not much enthusiasm within the various parts of government for this legislation. Apparently, there were no supporters within the administration, and the Navy, in particular, was very much opposed. Wenk relates the following anecdote, which he was able to verify, for at least one reason President Johnson signed rather than vetoed the bill. He and Magnuson had been close colleagues in the Senate, and Johnson had been best man at the Magnuson wedding. While the bill was sitting on the President's desk, Mrs. Magnuson queried the President at a White House reception as to whether he would scuttle a bill that her husband had worked so hard on, to which the President is reported to have replied, "Honey, for you I'll sign it."

In the seven years since the submission of the original NASCO report Congress had expanded its vision. The NASCO report, of course, was about oceanography, however, broadly that term may be defined, and Public Law 89-54 places heavy emphasis on marine science, but the mandate of both Council and Commission included not only oceanography, but marine resources and engineering and the management of those resources. Most importantly, the Commission was given the politically charged task, "Recommend a Governmental organization plan with estimated cost."

It was Jay Stratton's genius that insisted that NASCO not take up that issue until we had broadly reviewed the field of marine affairs and the government's role. The military use of the ocean was not part of the Commission's mandate and the Commission made a conscious decision to ignore marine transportation, even more a political morass then than now. With those exceptions the Commission interpreted its charge broadly, as can be seen in the forward to its report, *Our Nation and the Sea*;

> "First, the Commission was asked to examine the Nation's stake in the development, utilization, and preservation of our marine environment.
>
> "Second, we were to review all current and contemplated marine activities and to assess their adequacy to achieve the national goals set forth in the act.
>
> "Third, on the basis of its studies and assessment, the Commission was to formulate a comprehensive, long-term, national program for marine affairs designed to meet present and future national needs in the most effective possible manner.
>
> "And finally, we were requested to recommend a plan of Government organization best adapted to the support of the program and its expected costs."

The Commission recommended the formation of NOAA as an independent agency. NOAA, of course, was established, but not as an independent agency, nor did it contain all of the pieces recommended by the Stratton Commission. The Coast Guard remained in the newly formed Department of Transportation.

The birth of NOAA did not come easily. Just as many reports from the National Academy gather dust, the recommendations of many Presidential Commissions are ignored. The Stratton Commission report faced an additional challenge. The report was the product of a commission appointed by a Democratic president, but it was left to his Republican successor to implement.

What saved the Commission's recommendations for a NOAA was Congress. There appeared to be no particular enthusiasm for the recommendations within the new Nixon administration, but the ocean partisans of both parties in both the House and the Senate kept up the clamor. And they picked up additional advocates, including Representative George Bush from Texas and a relatively junior senator from North Carolina, Fritz Hollings. The latter is widely believed

to be responsible for getting the report a respectful hearing within the White House.

Does this history have any lessons for today? Perhaps. First, the gestation period for the Stratton Commission was long. It began with the NASCO report of 1959, and it rode a wave of enthusiasm for support of science generated by Sputnik and a true awakening of interest in ocean matters by a group of dedicated members of both the House and the Senate. The Stratton Commission was fortunate in its leadership, and it was lucky. Its recommendations were pushed by a relatively small group of members from both parties and both houses of Congress who ultimately prevailed.

CREATING THE STRATTON COMMISSION—-A REPRISE

◈ **Edward Wenk, Jr.** ◈

Marine Sciences Council

Introduction

In the 105th Congress, both the U.S. House of Representatives and the Senate are considering bills to usher in another Stratton Commission, born again. That part-time advisory body became an icon among ocean aficionados as a symbol of commitment to the health of the nation's marine interests. As authorized by P.L. 89-454 in 1966, the original commission was charged with identifying what priority—measured by funds and leadership—is this nation and its government to give affairs of the sea. President Johnson appointed Julius A. Stratton, former president of MIT as chairman, thus the appellation.

Their report entitled *Our Nation and the Sea* was released January 9, 1969. It set forth 120 recommendations to strengthen this nation's stake in the sea with policies and programs to tap the potential of the oceans and integrate its benefits more effectively into the life of the nation. The Commission was assigned a broad set of issues, but deserves credit especially for recommendations to restructure many existing functions and bureaus into a single, high-visibility and powerful agency. Two years later, and considerably altered, their proposal led to the creation of NOAA.

Now, thirty years later, many concerns addressed by that Commission have reappeared. Given its extraordinary reputation, several bills have been introduced to emulate the Stratton exercise: S. 1213 by Senator Hollings, H.R. 2547 and H.R. 3445 by several members of the House. On the premise that these will pass and be signed into law, the origins and performance of the original Commission deserve study to identify factors that would promote future success.

Congressional staff, NOAA, a number of stakeholders and think tanks have studied that proposition and with one exception would restart Stratton-mode engines. Although carefully crafted and compelling, these surveys suffer from three problems, of amnesia, of myths, and of addictions. There is amnesia about the politics of the oceans and about advances made by presidential leadership assisted by an advisory Council chaired by the Vice President and created by the same legislation. There are romantic notions about the scale and lasting influence of the Stratton Commission. As anthropologist Joseph Campbell has argued, myths preserve continuity of the human experience, but they can excessively raise expectations. Addictions to rhetoric of four decades ago in support of a new initiative may inadvertently block appreciation of major changes in the nation's mood to a commercial culture and aspirations for wealth, to partisan legislative behavior and globalization.

To add another perspective, this study focuses on **(1)** The legislative history of PL 89-454 creating the Commission, **(2)** the context which is crucial to understanding the dynamics of policy design and implementation; and **(3)** the process of appointing an outstanding cadre of Commission members who were critical to the success of the Stratton Commission. Despite Tolstoy's injunction that "The only thing history teaches us is that it teaches us nothing", there are vital lessons to be extracted from past achievements that could help reduce risk of failure. In **(4)** are added personal observations toward that end.

Chronology of Key Events

The Stratton Commission provides a deep learning experience for both branches of government even thought its product was rejected by the President who appointed it and by his successor. It all began on November 10, 1957 with creation by NAS President Detlev Bronk of a Committee on Oceanography (NASCO) that catered many subsequent political events. Dr. Harrison Brown was named chairman. It was sponsored by five federal agencies, the Navy's

Hydrographic Office, its Office of Naval Research, the Bureau of Commercial Fisheries, the Coast and Geodetic Survey and the Atomic Energy Commission that was then disposing of low level radioactive waste at sea. They collaborated with oceanographers in deep concern over evaporation of naval research funding after World War II. Their landmark report delivered February 15, 1959 was entitled, Oceanography, 1960-1970 (1) , with five general and twenty specific recommendations. The primary thrust was to double funds over ten years for basic research, applied research, and surveys so as to nourish a relatively feeble enterprise and equip it with modern ships and tools.

Paradoxically, while Sputnik had jump started research in almost every other field, oceanography continued to languish and the NAS report was not enthusiastically received by President Eisenhower's science advisor. Undismayed, Brown and colleagues with street smarts had already paved the way to tickle Congressional interest, especially of Senator Warren G. Magnuson of Washington State who chaired the Commerce Committee and Representative Herbert C. Bonner from coastal North Carolina who chaired the House Merchant Marine and Fisheries. Both committees were likely to have jurisdiction and their staffs had been invited to attend NAS deliberations, especially those held during crises.

On the merits of the case by Harrison Brown, Senator Hubert Humphrey was the first to publicize the report. Other initiatives swiftly followed, championing increases in funds for oceanographic research to strengthen the nation's undersea defense in light of the near-hysterical response to the Soviet surprise. That rationale was later superseded, with a shift to concerns over fundamental weakness in oceanographic research capabilities and the failure to identify a broader stake in the oceans by a nation that had been settled by sea and neglected its heritage.

After the February 15, 1959 release of the NASCO report, the following key events led to the birth of the Stratton Commission

1959

February 17
Special Subcommittee on Oceanography created in House MM&F and opened hearings, March 5 on the NASCO report.

April 13
Overton Brooks, chair of House Science and Astronautics Committee, introduced bill for categorical oceanographic research grants in NSF.

June 22
Senate Resolution 136 introduced by Senator Magnuson to strengthen oceanography based on the NASCO report; unanimously passed

September 5
Magnuson introduced S. 2692, the Marine Sciences and Research Act of 1960 that became the springboard for sustained interest and his later bills. Coordination of civilian research was assigned to NSF. Passed June,1960.

1960

July 1
Brooks released report prepared by the Congressional Research Service, Ocean Sciences and National Security (2) to nail down S&A jurisdiction in competition with MM&F. [MM&F won]. The report interpreted "National Security" broadly as more than military and rationalized support for research as more than "beating the Soviets." Instead, it focused on such functions as fishing, shipping, offshore oil and gas, in addition to basic research. Based on the report, the Committee recommended double the NASCO proposed increases in funding, and it drew a bead on management weaknesses in the Executive Branch that resulted from the frantic expansion of research after Sputnik and fragmentation in numerous agencies. It proposed elevating responsibility for leadership and coordination to the tip of the pyramid; to the President.

1961

February 9
Magnuson introduced S. 901 similar to S. 2692

February 13
Oceanographic Act of 1961 introduced by Rep. George P. Miller, to create a Cabinet-Level Council to help the president coordinate oceanic research. [Ironically, this concept from CRS was later adopted

by the Senate but for various reasons the House reversed its position and rejected the implementing Council machinery.]

March 29
President Kennedy accepted proposals from his science advisor's office and transmitted to Congress a sharply increased add-on to oceanographic funding, thus taking the edge off Congressional legislation to energize oceanography. Their focus then shifted to issues of waste and duplication.

1962

June 18
John Dingell introduced the Oceanographic Act of 1962, H.R. 12601 to establish national policy in marine affairs, coordinated by the Office of Science and Technology newly created in the Executive Office of the President.

September 27
Senate passed S. 901 with language of H.R. 12601, then passed by the House. It was pocket vetoed by President Kennedy when his advisors noted that OST was a staff agency and not appropriate to fulfill a line function. Clearly, Congress was chagrined

1963

June 12
Alton Lennon introduced Oceanographic Act of 1963, H.R.6997 after negotiations with the President's science advisory staff so as to overcome objections to the one pocket vetoed

1964

March 19
At the initiative of its staff director, the president's Federal Council on Science and Technology selected its Interagency Committee on Oceanography (ICO) as a show case for effective coordination, and submitted FCST's first report to Congress to demonstrate techniques of effective coordination in all fields of science. (3)

July 9
Magnuson introduced S.2990 to create a National Oceanographic Council at Cabinet level, based on a study from the newly created Science Policy Research Division of the Congressional Research Service.

1965

January 11
Lennon introduced H.R.2218 similar to earlier H.R. 6997

February 1
Magnuson reintroduces bill to create Council, now S. 944. On advice from CRS, the bill focused on future social benefits rather than science, mindful of Johnson's growing disdain for scientists because of their vocal opposition to the Vietnam war.

June 15
Paul Rogers introduces H.R. 9064 to establish a National Commission on Oceanography. This initiative resulted from frustration in the House that other initiatives had failed to rally support in the Senate, while the House rejected the concept of a Council because the one already mandated for Space Affairs had seldom met; it was largely staffed by friends of the Vice President who had been made its chair instead of the President.

August 5
Senate passes S. 944 as amended, House passes its version with H.R. 9064 attached.

August 19
Senator Claiborne Pell introduces Sea Grant legislation to help fund research.

1966

June 17
Marine Resources and Engineering Development Act of 1966 passed by both Houses June 2 and signed into law by President Johnson as P.L.89-454. It set goals for a long-term, comprehensive policy for marine affairs, and mandated leadership in the President with advice and assistance of an interim cabinet-level Council chaired by the Vice President. It also created a Commission on Marine Science, Engineering and Resources with a broad charter to evaluate national needs and national capabilities, and recommend appropriate governmental structure, not

just to enhance coordination but also to elevate the stature of marine affairs among federal bodies. The organizational medium was to be the message.

The Johnson administration did not support the bill. In fact, his science advisor released a report, Effective Use of the Sea (5) that was intended to block the legislation. The Bureau of the Budget opposed it, haunted by the notion of a "wet NASA" sluicing into the treasury. The Navy was quietly trying to sabotage it with stories of a certain veto, nervous about losing its status as the big boy on the block. With Magnuson one of the bill's parents, and with his close friendship with Johnson —Johnson was best man at his wedding— in no way would the bill be vetoed. But after signature, there was high uncertainty about implementation. It could have been ignored, used to warehouse political cronies, or taken seriously. Johnson adopted the latter course, mindful especially of Magnuson's hard work.

July 13
President Johnson ordered Vice President Hubert Humphrey to activate the Council and deliver the first annual report in six months.

August 17
Humphrey called first of monthly Council meetings. Wenk was appointed by the President as Executive Secretary

October 15
Sea Grant Bill enacted as P.L.89-688 as a title in P.L.89-454

October 15
Department of Transportation created by P.L. 89-670 with transfer of Coast Guard from Treasury

1967

January 9
President Johnson appointed members of Commission [details later] Johnson asked Humphrey to manage appointments to the Commission and this task was delegated to the Council's Executive Secretary. Humphrey agreed on a strategy to field the strongest possible membership, widely representing national interests and not just parochial marine interests.

March 9
President Johnson submitted first annual report to Congress as required P.L.89-454. Nine initiatives were announced on international cooperation, fish protein concentrate, Sea Grant, new data systems, estuarine studies, continental shelf surveys, ocean predictions, deep-ocean technology and sub-polar research, with 13 percent increase in funding.

1968

January 17
In a State of the Union Address, President Johnson proposed what was then elaborated in a special message of March 8 as the International Decade of Ocean Exploration developed by the Council.

March 11
President Johnson submitted second annual report with new emphasis on coastal zone management and further increases in civilian budgets.

August 3
Nation's estuaries to be studied by P.L. 90-454

October
Draft of Stratton report submitted to Council in accord with law. It was reviewed by an ad hoc committee chaired by the staff director with representatives of departments at Assistant Secretary level. They argued it through to the point of unanimous support. Subsequently, the Secretary of Transportation ordered his representative to recant and asked President Johnson to fire the Council's staff director.

1969

January 9
Stratton Commission released report *Our Nation and the Sea* recommending consolidation of numerous federal agencies into new independent NOAA, and appointment of presidential advisory committee. President Johnson refused to receive the report personally, even from friends on the Commission, because it proposed to transfer the Coast Guard. This was the crown jewel of the Department of Transportation, a department he had fought for years to establish over objections of powerful lobbies that wanted the status quo because of their easy access.

January 17
President Johnson released third annual report, emphasizing new legislation for coastal management, promoting the IDOE and improving framework of international sea law

January 20
President Nixon inaugurated. He reappointed the Council's director.

April 5
President Nixon appointed Commission on Executive Organization with Roy L. Ash named chairman. It would soon recommend against the Stratton proposal for NOAA.

August 8
Senator Magnuson requested Council staff to draft bill on coastal-zone management, introduced as S.2802.

September
Council's director writes directly to President Nixon, not through Vice President Agnew, to advocate continued review of Stratton report.

October 10
President appoints special task group to examine organizational issue; report delivered December 18 favored a weak National Marine Agency. Report was not released until July 9, 1970 because it would anger Congressional advocates of NOAA.

November 18
H.R. 14845 for coastal management introduced on behalf of Nixon Administration, identical to S. 2802 except responsibility assigned to Interior.

1970

January 1
National Environmental Policy Act signed into law, PL91-190.

April
To counter stonewalling by the Nixon Administration, Senator Hollings, Stratton and Wenk met with Attorney General Mitchell who was on intimate terms with President Nixon to enlist his support for a new agency. He could not support a new cabinet-level entity, but agreed to support creation of a new body within a department, with the horsepower that Mitchell admitted the FBI had in Justice.

July 9
President Nixon proposes to establish NOAA in Department of Commerce by Reorganization Plan No. 4 of 1970. In the absence of Congressional veto, it became law.

1971

January 28
President Nixon appointed Robert M. White to head NOAA. That delay signaled his anger at Congressional end runs.

August 15
National Advisory Committee on Oceans and Atmosphere (NACOA) created by P.L. 92-125, as proposed by Stratton Commission.

1972

The Council is disestablished on recommendation of NOAA and Commerce Secretary on grounds of weakness under Vice President Agnew. With the demise of the Council, the ocean community lost a friend in high places.

Analysis

This calendar of key events exposes the meandering of policy development, generation of basic concepts and set in motion by the political process with its idiosyncrasies. The initial impetus from oceanographic scientists was sustained by a few members of Congress having research constituents, but mainly from their exceptional personal interest. The field had not been preempted by jurisdiction fences; it was unplowed, and there was room to grow "heroes".

Second, rationales evolved from outdistancing the Soviets in a new arena to support for oceanographic laboratories, to a worry over splintering among so many different agencies, to the lack of a clear vision for the oceans and of Executive Branch leadership except for the Navy. That the Congressional

perspective had matured is dramatically revealed by in bill titles, the shift from "oceanography" to "marine resources and engineering development". By 1964, concepts from the report commissioned by Overton Brooks had been adopted, with the focus on applications in addition to research. Hearings reveal weak lobbying by most private marine interests as compared to the usual energies of advocates. The aerospace industry was stirring, however, over anxiety about tapering of the space effort, but they lacked experience in lobbying as an industry. Most advocacy focused on securing contracts amidst competitive bidding. Although a new Marine Technology Society took an interest, along with an activist maritime press, the awareness of political considerations was naive.

Third, the House of Representatives and the Senate were stubborn in each grasping their original concepts such that differences were resolved only by welding the Council and Commission concepts in one bill. This led to myths that the two organs were competitive. Such a misunderstanding resulted from amnesia about the organic act that recognized the President as band leader, with the Council in a day-to-day role to advise and assist until its authorization expired. The Commission's main task concerned governmental structure.

In the absence of strong outside lobbies, the Council became a maritime presence in the White House. Between Humphrey's leadership, a creative staff in the armory assembling ammunition and a receptive Johnson, things happened. The Council's reports were read by top officials in other governments that soon were attempting to knit together their own splintered maritime agencies. The Commission, on the other hand, was expected to take a long view of national purpose less influenced by an immediate agenda and political tactics and to wrestle with the organizational issue that could not be resolved within the Executive Branch itself because of territorial imperatives.

The President continues to have that mandate today, even though it has not been energetically exercised since 1972. The action-forcing provision for annual reports has been ignored by both Branches of government. There have been few hearings as during Council life.

Many ocean interests refer back to the Kennedy-Johnson years as the golden age of marine affairs. Apart from presidential messages in the annual reports, some 28 initiatives were submitted by the Council to the President and adopted. That commitment by a president has enormous significance because of the president's role as chief executive officer to set budget priorities, trigger new starts and integrate far flung agency sectors. Presidential statements were symbols of national priority.

If there is any single individual who helped to elevate the strength and visibility of marine affairs, it is Vice President Humphrey. He was chairman par excellence of an activist Council, he visited many oceanographic laboratories, rode their ships, sent prestigious messages to state and professional events of note, and had a congenial press.

The Context

Legislative issues never erupt in a vacuum. Most often, they are triggered by crisis or pressure groups. Whatever the trigger, they are embedded in a context of social, economic, political and geopolitical factors unconnected to the issues at hand but which provide the atmospherics and set the stage for policy decisions. To study the Stratton Commission required the legislative history behind the parent PL 89-454, the Marine Resources and Engineering Act of 1966. 1n the 1956-1966 run-up to enactment, these factors were influential:

Crisis: The Cold War with the Soviet Union was perceived by the nation as a sharp nuclear threat, a simmering and continuing crisis. Regarding war fighting capabilities, especially in terms of a bomber gap then missile gap, people asked , "Who's ahead?" The October 4, 1957 Sputnik event added urgency to the sense of a life-threatening competition. When ocean-related issues were pushed for the first time onto the legislative stage in 1959, arguments were advanced even by Harrison Brown with a well-tested ploy of national defense. So did Congressional sponsors of new legislation. In truth at that time, there was no significant underwater threat to the preeminence of the U.S. Navy.

Pressure Groups: It is a paradox that the field of marine affairs flourished in the absence of a palpable crisis or powerful interest groups. The first advocates were oceanographers concerned over shrinkage of naval research funding after World War II. Leaders of three major institutions led the parade, using as a springboard the NASCO study by the National Academy of Sciences. For a short time, public support came from the President of the National Academy of Sciences, Detlev Bronk, until other members of the Academy complained. By 1964, the voices of science were replaced by the aerospace industry, worried about leveling off of funds for space exploration that might follow after the planned lunar landing. Some in the industry were also teased by Navy initiatives to build up subsea technology following loss of the submarine Thresher, April 19, 1963. This interest group then found expression through founding of the Marine Technology Society, but at that time contractors were in such competition with each other that they couldn't mount a collective campaign. In any event, their interest was in merchandising hardware, not in uses of the sea The Stratton Commission heard and tried to respond to these interests with proposals for a massive deep water technology initiative. It was never accepted by either branch of government. The military-industrial complex today is far stronger and more effective.

Offshore oil interests were quite powerful but not interested in the marine environment as such. Indeed, they were satisfied with existing partnerships with the Department of Interior. Fishing interests were splintered by species and by geography. Coastal residents at the time were primarily concerned with beach preservation.

The environmental movement began to stir following Rachel Carson's book, *Silent Spring*, published in 1962, but awareness of threats to inshore waters and wetlands did not arise until the late 1960s. In short, offshore oil, shipping, and fishing seemed satisfied with existing arrangements. Seaborne passenger travel was in decline because of jet service overseas. Water related recreation was spotty. Environmentalism was in its infancy but the general public was treated to extraordinary undersea adventures by the photography of Jacques Cousteau, accompanied by his poetry on human connections to the sea.

Political Realities: Soon after Congress became aware of marine policy issues, several members saw opportunities to expand jurisdiction. In the House, a competition arose between Bonner of Merchant Marine and Fisheries and Overton Brooks who chaired Science and Astronautics. S&A had a plate full with a fledgling space program, but MM&F was looking for new challenges or face extinction. Claims were staked by both, arousing some media interest. Soon followed a flurry of bills focused on expanded research, the diffusion of civilian research through many different small agencies, and the need for coordination and leadership. Members willing to invest political capital to push legislation generally were from districts with oceanographic research interests.

Marine policies did not arouse partisan support or tactics. Indeed, success of the Council resulted from its even-handed approach to both Houses and both parties. Although the Council was a creature of the Senate, there was high respect for initiatives of the House and a commitment to meet their goals as well. This led to the unprecedented step of the Vice President submitting testimony at one of their hearings. Indeed, it was the Council that included funds for the Commission in its initial budget, without which the Commission would have had to wait many months and appeal to Congress for funds to get started

On the Congressional side, virtually all legislation had support from minority members initially and through enactment.

Even though Executive Branch agencies had sponsored the NAS study on the decline of research, none became conspicuous advocates. Eisenhower and his science advisor rejected increased funding. Indeed, he was already furious at the damage to his balanced budget, declaring that the power of the military-industrial complex after Sputnik was bad for the nation's economic health. The agencies hands were tied.

Under Kennedy, that coolness changed. He was constitutionally more adventurous and invited proposals for new starts. He had a personal history of sailing and naval service during World War II that led to his affection for maritime issues. His one-shot

increase in funding was welcomed by civilian agencies, and temporarily cooled Congressional ardor, but that soon changed when Members began a traditional war dance about waste and duplication and insisted on better integration of so many small activities. By 1964, also, Members had shifted their focus to policy issues, rather than programs, a major step of maturity.

That elevation in issues continued under President Johnson. Among other things, the Council knew he was hostile to science because the scientific community was pecking at his Vietnam policy. On the other hand, Johnson entertained new starts as did Kennedy when rationalized in terms of social and economic benefit, not science for its own sake. Council staff persuaded him to support the IDOE because of its potential contribution to world order, plus a focus on such issues as food from the sea and environmental management that had come on the political screen.

Although Nixon accepted some leftover Council proposals that were already developed under Johnson, he drew a conservative cloak, barring more initiatives.

Role of Staff: Throughout the development of marine affairs and legislatively based policy, staff were highly influential. Dan Markel in the Senate and Jack Drewry in the House were especially attentive. From preparation of the Brooks report, through drafts of bills for Magnuson, Lennon, Rogers, and others, creative efforts of CRS staff were welcomed. Within the Executive Branch, staff stewardship played a role in enhancing credibility of the ICO, the congenial relationship with President Kennedy and later Vice President Humphrey, the barrage of new initiatives from the Council and the gentle nudging for reorganization by two presidents in the face of standard opposition by OMB.

Media: Maritime interests seldom earned headlines except with disasters of a major oil spill such as with the Torrey Canyon, or loss of life on ferries. The maritime press was splintered by industries, shipping, oil and gas, fishing. The editors of two marine newsletters, however, were aggressive and perceptive in following developments in marine affairs and reported in a mode that helped stakeholders recognize what was happening behind closed doors. As much as any other factor, the newly minted marine affairs media sustained interest by partisans that otherwise might have faded from lack of focus for collaboration Industrial users of the sea never were fully on board.

Appointments to the Commission

The organic legislation provided for a membership of fifteen from federal and state governments, industry and academia, augmented by four Congressional advisors. With agreement to recommend a prestigious Commission, one with genuine horsepower, the Council's staff sorted out some 900 nominations.

The process began with a shopping list of marine interests including scientists, but there were other considerations. Looking ahead to submission of the report to the President and Congress, it was essential to seek individuals from states represented by committee chairs and also by the minority members; home states of the President and Vice President, individuals having close rapport with the President, having media experience, having wide geographical representation, having a national, prestigious stature. To satisfy all these requisites while limited in number of appointments, required that individuals should simultaneously meet several qualifications.

Meanwhile, the trade press were angrily attacking the Council for blocking appointments in the belief that the two bodies were in competition. The more volatile members of the press kept gnawing at that issue until the Commission reported.

The most critical appointment was that of chair. By good fortune, Humphrey was able to persuade the first candidate Julius A. Stratton to accept the key role. Apart from his personal gifts of character and intellect, Stratton brought the patina of president emeritus of MIT and then chairman of the board of the Ford Foundation. Few others could have been as effective in mustering interest and camaraderie of members, wholesome relationships with the Council, members of Congress and the outside lobbyists who were salivating over prospects of a major new infusion of funds for a wide range of projects, especially of high technology for deep ocean exploration. The rest is history.

Lessons Bearing on Success of a New Commission

1. Although rationales changed between 1956 and 1966, when P.L. 89-454 became law marine affairs were linked to broad goals of social policy. Is this true with pending bills?

2. Momentum thirty years ago was imparted by the national excitement of the Soviet space surprise and by Kennedy-Johnson dynamism as much as by lobbies of stakeholder interest groups. How does today's situation compare regarding lobbies and national mood?

3. Powerful members of Congress of both parties, activists all, invested political capital because of their personal enthusiasm rather responding to vested interests, to a popular ground swell or to an effervescent media. How does Congressional advocacy compare?

4. Among factors that influence policy making and implementation are attitudes and values of the President. Given today's bi-polar Washington, how does the President stand?

5. This is vital because, while the Congress sets policy directions, execution depends on Executive Branch performance. Where do marine affairs stand on their agenda?

6. Membership of the Stratton Commission had much to do with its effectiveness. Does the pending legislation provide opportunities to recruit top caliber participants rather than make it easy for elected officials to create a rubber stamp or pay off political debts ?

7. When P.L.89-454 was passed, Congress expected immediate action by the Council to rectify perceived deficiencies. They were also impatient to see the Commission generate proposals for a new agency strong enough to defend budgets amidst vigorous competition. What are the basic hopes of today's Congressional advocates?

Personal Views on Creating a New Commission

I am an unequivocal advocate of a national ocean policy that relates the oceans to human affairs, especially those having conspicuous national interests. That condition engaged two Presidents of the United States during what some recall as the "golden age," 1966-1971. Since then, all elements of public and private involvements have grown in size and importance, but the central focus and grass roots interest has been lost. Creating a new Stratton Commission is a concept around which a new start could be rallied, but its success critically depends on the legislative charter now under review.

As an ancient mariner, I had the privilege of being present at the birth of the Stratton model through four successive appointments. As first science advisor to Congress in the Congressional Research Service in 1959, I analyzed the NASCO report and made recommendations for Congressional initiatives. Then appointed to President Kennedy's staff as director of the Federal Council for Science and Technology, I chose the Interagency Committee on Oceanography to showcase coordination among nearly 20 agencies. Congress then requested my return to found the Science Policy Research Division in 1964 where I helped advance the legislation leading to PL 89-454. On its enactment in 1966, I was appointed by President Johnson as Executive Secretary of the Marine Council created by that Act. One of my first assignments for the President was to nominate members of the Stratton Commission, then to assist in their work and vet their report through the Council.

Here are some lessons that bear on success of a future commission:

(1) Marine Affairs deals with technology more than with science, recognizing technology as more than planes, trains, automobiles and ships. It as a social delivery system involving a network of public and private organizations that apply specialized knowledge to meet human needs and wants. Government has six roles: (a) contributing to vitality of a capitalist economic system; (b) exercising fiduciary responsibility for common property resources; (c) providing for the national defense; (d) funding public works beyond the financial capacity or risk horizon of the private sector; (e) sponsoring research and education and engaging the globalization process; and (f) protecting public and environmental safety through regulation.

The pending legislation seldom reflects the role of technology and is relatively silent on the national defense and related roles of the Coast Guard and Army Corps of Engineers. That omission as a key element of national ocean policy can stir bureaucratic animus.

(2) This time around, the Congress had such limited hearings before advancing its commission bills that there is no authentic sense of a national constituency. On a broader scale, some say the national mood is "every person for themselves," and "survival of the (economic) fittest." In this atmosphere and with the high noise level in our society, marine lobbies are not conspicuous. Content analysis of newspaper and TV news reveals low media concern except for highly localized problems or crises such as with Exxon Valdez. The environmental movement is of major importance but it has lost the critical role occupied in the late 1960s leading to the National Environmental Policy Act of 1969. There is no parallel with ocean constituents that pressured the Stratton Commission for a more powerful agency in the federal constellation and funding of aerospace contractors for deep underwater exploration.

During the three years of Stratton Commission life, national attention was mustered by the Council with initiatives by the President and Vice President. Without those episodes of high visibility such as in a State of the Union message, and without initiatives by Council staff after the Commission folded its tent, the Commission might have been totally ignored

(3) Although rare, amidst a repertoire of other issues, and in the absence of palpable lobbies or crisis, some members of Congress invested considerable time and exercised leadership over an extended interval to advance marine affairs. There were continuing hearings over four years. That commitment isn't obvious today. Instead, to those outside the beltway, the appearance is one of a partisan circus.

(4) The President as the nation's systems manager plays a key role in identifying national priorities. As new legislation is considered, the President's views are critical as to whether pending bills would be signed or vetoed, and if signed, whether implemented vigorously. Three decades ago, marine science looked doomed when it only ratcheted science budgets, until it focused on technology. Even then, Executive Branch enthusiasm was low and bills would have been vetoed except for the close personal relationship of Magnuson with Johnson. How a President reacts depends significantly on such relationships and other subtle factors, and on dispositions of presidential staff. With the present legislation, an approach to the White House, probably through OSTP, is not evident.

This lack of attention to the President's role is also reflected in neglect of the Council's annual reports. There is no compendium of messages signed by the President on coastal zone management, seabed arms control, attention to Arctic affairs, restoration of the Great Lakes, the International Decade of Ocean Exploration, Sea Grants, oil spill prevention and cleanup, acceleration of ocean surveys and data buoys, etc. All are documented in *The Politics of the Oceans* published in 1972 and summarized in 1995 in *Making Waves*.

(5) Meanwhile, several agencies more potent than NOAA appear in opposition and will have their voices heard in OMB and in their respective authorization committees. Part of this opposition lies in the legislation neglecting national defense as part of ocean policy and also foreign policy consideration such as in sections 4 (a) 5 and 6 in PL89-454 which were unexpected triggers for Johnson's support.

(6) It is hard to measure performance of the Stratton Commission because there has been no evaluation of response to its 120 recommendations. It is known that the package proposing massive funding for hardware has been ignored. The proposal for NOAA has been discussed. The Commission deserves exceptional grades for its diligence, perception of opportunities, comprehension of marine affairs and complex relationships such as in Law of the Sea to other policy arenas. Leadership by Jay Stratton is a model.

The proposed legislation, however, has an arcane system of appointments of members that opens the door to partisan selections and thus conflicts, to split loyalties of members, and to insider lobbying. Providing for volunteer staff also increases vulnerability to powerful lobbies. With so little control by the President over selection, there is a risk of veto. There is also a risk of findings that could reflect partisan ideology, leading to privatization of NOAA.

The commission scope and implementation strategy also deserve comment. When the Stratton report was delivered, some other presidential staff characterized its "kitchen sink" approach, with far too many proposals of vastly different scale of impact. Most dealt with programs and not policies. It was also criticized as arriving two weeks before President Johnson was leaving office when he was in no mood to consider any proposals. The Commission could have been more prescient and cut its scope to deliver the report in time to lay the groundwork for presidential mulling. The present broad scope could inadvertently lead a new commission to try the impossible, especially if it fails to stay on the policy track.

(7) Section 8 of a pending bill would repeal PL89-454. That would remove the present framework for marine policy until a new one would be drafted and introduced perhaps two years after enactment, and put in force in a third year at the earliest. Indeed, there is a chance that it might not be replaced at all. To be sure, the existing policy has not kept up with changing times, partly from lack of interest and initiatives in both branches of government and in the fragmented and weak ocean constituency.

I believe, however, that repeal of the present policy is unnecessary because it does not inhibit whatever initiatives are anticipated in other provisions. Indeed, one of the first tasks a new commission might undertake would lie in updating existing law. In any event, the notion of a master policy covering all dimensions of marine affairs is as illusory as trying to have a master policy for terrestrial affairs. Many if not most issues do not stop at land's end.

TIMING AND THE WORK OF THE STRATTON COMMISSION

◈ **Samuel A. Lawrence** ◈

Staff Director, Stratton Commission

The task of the Commission on Marine Science, Engineering, and Resources was to formulate and advance "an overall plan for an adequate national oceanographic program that will meet the present and future national needs." The Commission's attention and energy necessarily were focused on the substance of its task. Staff was employed to support Commission activity, to help ensure accomplishment of its mission, and to assist the Commission in navigating the unfamiliar terrain of Washington bureaucracy and politics.

It should be emphasized that the Commission was a true working commission. The members were themselves informed and committed. The Commission members themselves prepared the lion's share of the text, which made up the seven panel reports. Staff assisted with the establishing of a database and the logistics of the panel process, in distilling the masses of material, and in preparing the summary Commission report. But the product was clearly that of the fifteen commissioners who were the signatories to the final document.

Profile of the Commission Staff

The Commission report lists the names of 25 professional, and 10 support, staff. Each of these individuals did meaningfully contribute to the effort. However, the majority of the group served for a relatively brief period. I would estimate over the two-year period, the average complement was in the range of 12-15 professionals, and 4-5 support personnel. Of this number, only about half were paid from the Commission's $1.5 million appropriation. The remainder were on loan from other federal agencies or (for four of the group for about six months) a foundation that had been organized by one of the Commission members.

The staff reflected a diversity of skills and interests. Most were drawn from middle management levels in their organizations. In assembling the staff, the chief criteria were availability, flexibility, and an aptitude for intensive, high pressure work. For a group assembled quickly in such an ad hoc manner, the staff worked surprisingly well together and I think succeeded in meeting the expectations and needs of the Commission members.

Timetable for the Commission's Work.

In retrospect, the timetable for the Stratton Commission's activity appears quite compact and efficient - only 30 months from the approval of authorizing legislation to presentation of a comprehensive, actionable report. At the time, we felt challenged to stay ahead of the rush of events, to be able to produce something at once thoughtful, timely, and relevant to the circumstances of a rapidly changing technical and political environment.

A 30 month time line is about what one must plan for a job of this magnitude. In rough terms, here is how the time related to COMSER's activity was used:

- Six months (7/1/66-1/3/67) to select and appoint the Commission members. This is an absolutely key element of the process. The identification and recruitment of a chair, establishing the advisory relationships between the commission and its congressional and administration advisers, and achieving the desired skills, stature, and breadth of interests among the commission members are major tasks and crucial to success.

- Three to four months to 'get organized'. Simply getting on the calendars of busy people to establish a schedule of meetings can be daunting. Additionally, one must recruit a staff, establish an office, bring in phones and all the attendant paraphernalia etc. This period also includes the 'getting to know each other' process among the Commission members. In the

case of the Stratton Commission, it climaxed (as I recall it) in May, with decisions as to the role and memberships of the several panels.

• Six to eight months of substantive research. For the Stratton Commission, the time lines achieved by the several panels varied considerably, as did their methods for surveying their fields of interest and gaining public input. Most had pretty well staked out their points of view by December 1967.

• Three to four months for documentation and distillation of panel reports. Again, a task which varied substantially amongst the panels, but for which time must be recognized if the product of panel and supporting staff, and contract work is to be brought to a standard which permits its publication.

• Three to four months to integrate all of the special viewpoints, interests, and other baggage which may be carried by participants in the process into some kind of coherent whole. The Stratton Commission did not really 'belly up' to this task until spring of 1968. It required several, two day meetings to talk through the major issues, and determine the overall focus and approach that the Commission wished to adopt in its report.

• Three to four months to validate and refine the proposed program, get it properly organized and written.

• Another month to actually achieve publication, along with all the logistics of finding appropriate illustrations, preparing appropriate transmittals and acknowledgments.

Presentation of the Commission Report

A central concern of the Commission, almost from get-go, was the question of when, and hence to whom, it could most effectively and appropriately render its report. It was obvious that a report made in July 1968, as called for in the authorizing legislation, would 'hit the streets' just as the nation's political leadership was preparing for the fall presidential and congressional elections. Better either to defer to the end of the current presidential term or to seek permission to make the report early in the succeeding term of office. I do not recall the exact mechanisms for decision on this matter (or have the papers at home to permit me to research it).

My recollection is that Dr. Stratton concluded that a December 1968 or January 1969 report would best reconcile his obligation to the current administration with a chance to capture the attention of the next. We consulted on this matter with the Commission's congressional advisors, emphasized our mutual desire to keep the report and its recommendations unentangled with party politics yet to find a place in the stream of political action. The congressmen of both parties endorsed delivery of the report to the outgoing administration and promised that they would seek to ensure that it not achieve a 'dead letter' status as a result. At the time, we had no way of knowing that the actual delivery would be to a vice president who had only about a week of remaining tenure in office, or that Hubert Humphrey, who had chaired the Marine Science Council and championed ocean causes, would be the democratic presidential candidate in the 1968 election.

Administrative Environment for a Stratton II

The timing issues which complicated the work of the 1967-69 Commission are likely to be even more difficult for a commission formed during the remaining years of a Clinton presidency. This in part reflects the nature of the times. Although the country is not today overwhelmed by the tumultuous issues that intruded into all aspects of national life in the later Johnson years, it is seemingly preoccupied with multiple layers of political trivia which make any governmental venture tortuous and unpredictable. Also, there have been a plethora of legislation and regulation enacted in the 30-year interval, which will complicate both selection of commissioners, and of the staff to be mobilized in their support.

The press can be expected to more aggressively probe any possible suspicion of conflicts of interest, and the executive and congressional branches can be expected to be less accommodating to one another's interests than applied only 30 years ago. Unfortunately these new circumstances could conspire to undermine the possibility for the unanimity which was achieved by the Stratton Commission and which was an important element in the recognition which its report received.

Lessons Learned - What Lessons May We Draw from this Experience?

- Not to underestimate the time the job will take.

- Need to recognize that the landscape will likely change significantly and unpredictably as the new Commission moves through its process. Forbearance, flexibility, and on-going communication with those who ultimately will receive, and need to deal with, the product of the Commissions work are essential.

- The most important elements of the activity surrounding the Commission may be those which precede its appointment, and those which follow the completion of its official task. In particular, if you expect to make an impact, there must be follow-through.

- Then, most importantly, remembering that documents do not decide things, people do. People must be energized through a continuing effort to see that the subjects of the Commission's work remains on the agenda and that its recommendations are given serious attention in both the Executive Branch and Congress.

ISSUES FOR A NEW OCEAN POLICY COMMISSION: THE CHANGING REGIME OF THE HIGH SEAS

◈ **Lewis M. Alexander** ◈

Deputy Staff Director, Stratton Commission

One of the challenges a new national commission on ocean policy might consider addressing involves the high seas, beyond the limits of national jurisdiction, where the international community is moving gradually from a regime of the free seas to one of a more managed high seas. This shift could have serious consequences for the United States and other maritime countries.

In this discussion I include two caveats. One is that my concerns do not include the regime of the International Sea-Bed Authority, which is a separate issue in itself. Nor should a new national commission be concerned with the Navy's Freedom of Navigation program on the high seas. A Stratton II, like Stratton I, should probably not become involved in recommendations on military matters of this sort.

It is my belief that some federal agency or commission should be continuously monitoring high seas activities and management institutions and recommending to the appropriate authorities such actions as may seem necessary to maintain an equitable balance between the necessary freedoms of the high seas and those conservation and management efforts that are important supports of the interests of the United Stats and other like-minded countries.

The Geographic Scope of the High Seas

If all coastal states made maximum exclusive Economic Zone (EEZ) claims in their coastal waters, about 70 percent of the world ocean would retain the status of high seas. Actually, the total areas of the high seas depends, in part, on the number of EEZ claims to be made for certain rocks and islands that, according to Article 121 of the 1982 LOS Convention, "shall have no exclusive economic zone or continental shelf of their own." Remember, a single rock or islet, located more than 100 nautical miles from the nearest national maritime limits, could generate a territorial sea/EEZ measuring over 33,000 square nautical miles, an area equal to that of the state of Ohio. Perhaps the United States should consider adopting a policy of nonrecognition of "illegal" EEZ claims for rocks and islands incapable of habitation or an economic life of their own.

The high seas also includes the waters of the Southern Ocean, although EEZs may, in time, be claimed within parts of that Ocean around certain islands and island groups, such as the South Orkney, South Shetland, and Kerguelen Islands. Various efforts have been made to treat the Southern Ocean as a zone separate from the rest of the high seas, witness its designation by the International Whaling Commission 1994 as a sanctuary where all whaling is to be banned for ten years. Should this trend toward separate treatment of the Southern Ocean be accelerated?

To illustrate some of the concerns of high seas management, listed here are three categories of activities where controversial situations may appear.

1. Environmental Protection and Preservation

Currently in place is the 1972 London Convention that defines dumping as the deliberate disposal of wastes from ships and aircraft. The Convention prohibits the dumping of certain wastes and requires permits for the disposal of others. However, with respect to some substances such as low-level nuclear wastes, there still appear to be uncertainties.

Another issue concerns vessel-source pollution and the need for an international response to emerging problems. Much has been made of the successes of the IMO conventions with respect to vessel construction, vessel safety, Traffic Separation

Schemes and, of course, the 1973-78 MARPOL. But new problems arise, particularly with the movement of vessels carrying hazardous cargoes through the high seas. In 1972, for example, there began the first of a planned series of plutonium shipments by sea from France to Japan for use in Japanese reactors. It was reported that if a transport accident had occurred, plutonium might be released into the environment and would remain a deadly contaminant for thousands of years.

There are also recurrent proposals, such as incineration at sea of highly noxious materials more than 200 miles from land (and hopefully in areas of prevailing offshore winds), or the seabed disposal of high-level radioactive wastes, that represent potential environmental dangers. Like the exclusive economic or fisheries zones, the high seas, particularly in their marginal areas, might become areas of increasing controversy and congestion.

2. The Conservation and Management of Living Marine Resources

There are obviously a number of controversial, and at times politically explosive, issues concerning high seas living resources, among them whaling, straddling and highly migratory stocks, anadromous species, and drift nets. Which international organizations and treaties should the U.S. strongly support and/or seek to change? Even if an organization has been in place for some time, it may not be operating at peak efficiency. The International Whaling Commission is such an example. According to its charter, it was designed to "provide for the proper conservation of whale stocks and thus make possible the orderly development of the whaling industry." In the years since the imposition of the 1986 moratorium on whaling, little has been done to promote the orderly development of the industry. Further, as John Knauss has written, even before the moratorium, the IWC "failed miserably in its primary goal of maintaining sustainable populations." With respect to high seas fisheries in general, Burke notes that, among other things, there is a lack of adequate scientific data, enforcement systems, and allocation procedures. Clearly, the protection of United States' interests in the conservation and management of high seas living resources requires constant monitoring and advice on the part of federal agencies and commissions.

3. Protection of the Underwater Cultural Heritage

In recent years there has been considerable activity, particularly under the aegis of UNESCO, in support of the drafting of an international convention on the protection of the underwater cultural heritage both within national maritime limits beyond the territorial sea and on the deep sea bed. Although the United States is not now a member of UNESCO, it has participated in these activities, including consideration of a draft convention, prepared by the International Law Association. With respect to the deep sea bed, what international agency would be responsible for monitoring archeology and other activities associated with the cultural heritage? The ISA has authority over mineral resources only. As technology comes to permit greater attention to the cultural high seas resources, the U.S. government needs to prepare for the protection of its interests beyond the EEZ limits.

Other Issues

There are, of course, other high seas uses and potential management problems that exist or may exist — marine scientific research, the interdiction of drug-smuggling vessels, the eventual exploitation of hydrothermal vents, including hypothermophiles; these only reinforce the need to approach the high seas as a coherent entity for purposes of management.

This brief summation is intended to demonstrate the complexities of high seas uses and management problems that, as technology advances, will undoubtedly increase. It is suggested that there is a need for the establishment of an inter-agency organization that would focus on matters relating to the use and management of activities on the high seas beyond the limits of national jurisdiction.

THE STRATTON COMMISSION : AN HISTORICAL PERSPECTIVE ON POLICY STUDIES IN OCEAN GOVERNANCE, 1969 AND 1998

◈ **Harry N. Scheiber** ◈

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Introduction: [1]

Nearly thirty years have passed since the White House received the famed "Stratton Commission Report," the massive document entitled *Our Nation and the Sea*— the final report of the Commission on Marine Science, Engineering, and Resources, established under an act of Congress two and a half years earlier . [2] The influence of the Stratton Commission Report on U.S. policy proved to be uneven, though certainly of enormous importance overall. Some of its most notable recommendations were almost immediately translated into law and policy; whereas in other respects, while the Report gave new clarity of focus to continuing debates, it was without the resolution of issues on lines the commission had wanted. Predictably enough, there were other areas of policy in which a succession of Presidents, the Congress, and the various ocean constituencies and interest groups either resisted the commission's recommendations or else fell far short of agreement on how to respond. Most significant for our purposes today is the fact that the Stratton Commission Report still stands, these many years later, as the last such major official enterprise charged with taking a full and comprehensive view of ocean policy and national needs. The inventory and analysis that we seek to construct regarding the Commission's sources of general effectiveness and specific achievements, and the lessons that are offered by the record of areas in which it fell short, are the most valuable repository of data on which we can draw today for lessons that a "Stratton II" enterprise might do well to examine.

Winning Center Stage: The Factors Underlying Success

The Stratton Commission was able to argue persuasively in 1969 that it spoke at a "time for decision." This was an accurate claim, if for no other reason than that Presidents Kennedy and Johnson, and also the newly elected Richard Nixon, all had given some significant priority to ocean policy questions in their political campaigns and/or in policy development initiatives while in office. More specifically, both the Johnson and Nixon administrations proved willing to endorse explicit reforms in U.S. marine policy and, even more forcefully, to set in motion concrete reforms in governmental organization affecting the administration of ocean-related issues and functions. The Report thus dealt with issues that were at the time of its preparation of relatively high political visibility, or at least had been acknowledged as important by key actors in political life; and-thanks especially to the notably pro-active involvement of Vice President Humphrey and the genius of the Commission's director and top staff-capable of gaining attention at the highest levels of policy and lawmaking. The national government, in sum, was primed to listen, and, as it proved, was also poised to act.[3] Scarcely a year and a half would pass (a lightning flash, in terms of the normal patterns of decision in matters potentially so controversial) before one of the Commission's most critical and sensitive recommendations-for creation of NOAA- became, albeit in modified and compromised form, a reality. Among the many other major recommendations one can identify, in retrospect, a very respectable number that would become the focus of robust continuing debate. With the passage of only a few years-that is to say, by the mid-1970s, in the midst of a new upsurge of environmentalism and with some major changes in politics-important legislation would follow.

What makes particularly intriguing this receptiveness in Washington to the Commission's wide-ranging report, so threatening to some elements

of the bureaucracy, is the fact that when the enterprise was launched by an act of Congress in 1966 there was (as Wenk has pointed out) no catastrophe, no broadly recognized crisis, no exceptional urgency, in the notion that the needs of the nation and of humankind with respect to ocean science, marine technology, and the interfaces of human economic activity and the ocean environment required comprehensive study-and possibly comprehensive reorientation of both policy and governmental structures of implementation. Rather, the enterprise drew momentum initially from the sheer force of an idea, a core concept, and the dedication of some politically powerful individuals to act upon concerns that had been articulated by the scientific establishment and elements of the "ocean policy community" as well as some user groups.[4] Ultimately the Commission's work drew impetus and effectiveness also from the convergence of advantages that inhered in enjoying the attention of government's highest level, inspired and skillful leadership by the commission's own leadership echelon, opportunities offered and willingly seized by some Cabinet officials and legislative leaders to transcend the ordinary rivalries and routines of self-serving agency interests, and creative involvement of some powerful private-sector interests in the process.

When we consider some of the important elements of background context outside the internal dynamics of government itself, the factor that takes center stage in most retrospective analyses is the impact of the Sputnik launching and the Russian space program—in the context, of course, of Cold War rivalry and competition for military advantage and the attainment of basic security objectives. Behind this event, which had sent a powerful shock wave through the political arena nearly a decade earlier, was the force of a series of commissions and special studies that had come out of the scientific community and pressed for more systematic attention and financial support from the government for oceanographic research.[5] Traditionally, moreover, both in Europe and in America, going back to the eighteenth century, the interest of the naval forces in ocean studies had been a driving force and principal stated objective (if not necessarily the real agenda, which of course was often basic science) that won public support for oceanography.[6] The United States in the "Sputnik" phase of the Cold War was no exception.

Increasingly in the years leading up to the Stratton Commission's enterprise, proponents of an expanded national commitment to oceanography had become progressively more committed explicitly to the larger goals of developing new technologies and to economic development. The commercial fisheries had been the principal focus of such new orientation as had emerged with applied objectives, centering upon management and conservation objectives as well as exploration and more effective exploitation.[7] By the mid-1960s, however, the focus had become much broader and now encompassed the potential of mining in the Continental Shelf and high seas areas, beyond what was already established in the offshore oil drilling field. (Other economic activities and their interrelatedness were being debated, too, at least in academic circles, by the mid-1960s, as will be noted more fully below.) The example in the 1960s of the U.S. space program-which was regularly cited by proponents of reform in ocean policy as a model for the exploration of the "inner space" of the oceans"-lent force and some useful glamour to the effort to force reconsideration of oceans issues and management. This was a time when the imperatives of the Cold War, especially with an increasing emphasis in naval planning on nuclear warfare based upon submarine operations, undoubtedly were still foremost in lending great urgency to a focus on the oceans.[8] But the specific example of NASA-which took space, as one might take the oceans, as the organizing principle for agency definition, with comprehensive operational as well as scientific and policy responsibilities-was a constant reminder and model for those whose vision pointed toward creation of an agency (a "wet NASA") with comparable scope and importance of well-focused functions.

Another quite different factor in the background needs also to be taken into account. This was the well-established tradition of "corporativism" (as we may term it) that had brought industry, resource managers, and scientists together in alliances to obtain public support for American scientific research on fisheries. This style of collaboration among the resource users, the biologists, and the managers (and the politicians as well) had also been transferred after World War II extensively to the arena of regulation itself. Thus many of the management programs for both coastal fisheries and the programs under jurisdiction of a multilateral agency were specifically designed to include representatives of the industry as

an integral part of their scientific and operations oversight.[9] This was the beginning, I think it fair to say, of what became an important element of the "ocean community," as it is called in political analysis of the period we are discussing, as the core fisheries-oriented coalitions began to interact systematically with other industrial-scientific-engineering clusters of interests and the political leaders who took a special interest in their varied concerns and causes.

By the mid-1960s, the oceanographic institutes, schools and departments of fisheries science, fisheries agencies, and industrial groups in the fisheries sectors had begun to exchange ideas and get involved in the policy process in an increasingly systematized and routinized way. The published evidence of these interactions, together with the archival evidence of the period insofar as it has been analyzed to date, suggest that the ocean-use industries were impelled in this development by the rapid movement in international relations to fashion a new legal order for the oceans. The debates and often-dramatic conflicts concerning limits of the territorial seas, and the movement for a comprehensive Law of the Sea Convention that might establish a comprehensive global regime for the oceans—a regime, as the reformers hoped, which might fundamentally redefine the obligations and rights of nations in relation to ocean space and resources-was a matter of urgent common concern for the leaders and interest groups in the emergent ocean community. It also brought them into an important dialogue with the U.S. naval leaders and with the State Department planners who had an agenda that made multilateralism itself a top priority, sometimes in a way that was at odds with the interests of American industries or segments of industries (e.g., the salmon fishing fleet of the Pacific Northwest, which for decades had pressed for unilateralist expansion of the U.S. offshore territorial boundary).[10] The Law of the Sea negotiations meant that U.S. domestic policy as well as foreign policy initiatives (and adaptations) were driven in considerable measure by a need to keep abreast of, and if possible influence the basic direction of, the reformation of international law. Indeed, when the Stratton Commission considered these matters, its Report would include repeated calls for assessment of U.S. domestic policy options with a view toward preparation for, or eventual alignment with, changes in the legal order of global marine relationships.

This emergence of an identifiable ocean community of scientists, industrial elements, experts in government, and politicians who shared common ground in their policy concerns was paralleled by another movement: the trend toward recognition, by the ocean community itself primarily, that ocean-related policy issues needed to be addressed from a variety of disciplinary perspectives. A dramatic example of how strong this trend had become was to be found in a major California study of that state's ocean and coastal policies. The study, which appeared in 1965, had been directed by Milner B. Schaefer, a marine biologist of exceptional distinction, and was undertaken by the Institute of Marine Resources (IMR), based at the University of California's Scripps Institution of Oceanography. The Schaefer IMR report was a brilliant success in challenging very fundamentally both established political-jurisdictional structures: this was in its basic premise that the coastal waters and adjacent land areas should be conceptualized—both for science and for policy purposes—as a social and ecological system requiring the exercise of state-level authority informed by systematic advising by scientists, lawyers, and social scientists. In this regard, Schaefer and his colleagues in the IMR project played a key role in shaping the core idea of "coastal zone management" as a governmental and scientific enterprise-also reflecting, however, what Schaefer and others of equal prominence among the scientists in the ocean community were then advising Congress, as it considered the question of shaping ocean policy. Schaefer urged the legislators to broaden their concept of research support on scientific oceans issues to include support for related research in the social sciences and in law. "It seems evident," Schaefer wrote to Senator Warren Magnuson,

> that in many cases the handicaps to rational, effective, and economically efficient development ....of unutilized or underutilized resources ... lie to a large extent in the area of economic and legal factors, and therefore a thorough study of such factors, and consideration of possible means of changing them, will be highly important.[11]

In 1965 this idea of the coastal zone as a multidimensional and holistic unit for study and management was still very new and (in the best sense)

truly subversive: it represented a decisive and challenging break from existing norms.[12] In the same way, the idea of ecosystem-oriented fisheries habitat studies had been advanced in deepwater ocean science of the previous two decades—most notably, in California, by the CalCOFI-inspired ecosystem research in Pacific waters.[13] Now the studies under Schaefer's direction pointed to the need for both science and public policy to adopt a similar approach to the coastal land and water zones as a complex environmental system interacting with human settlement and activities. Bringing interdisciplinary intellectual resources to bear on a systematic phenomenon, in this way, was no less radical an idea for ocean and coastal policy planning than the ecological approach to habitat had been in fisheries science.[14]

For our purposes, the California study that Schaefer headed is especially important because it offered a useful model for the approach to study and analysis of marine policy issues that would be taken by the Stratton Commission. For as the Schaefer commission at IMR had done, the Stratton Commission dealt in depth with distinctive segments of ocean policy; and in doing so, Stratton (like Schaefer) brought together in a common enterprise many experts from a variety of disciplines in social science as well as from law, marine sciences, and engineering to examine in interdisciplinary or multidisciplinary terms the full dimensions of each segment (fisheries, recreation, mining, etc.). And like the IMR report, the Stratton Commission Report kept at the forefront of all its recommendations the need for coordination, clarity of overarching objectives, and maximization of management-level integration for the governance of ocean resources and ocean space. It is not coincidental, either, that some of the major figures, including Schaefer himself, who were involved in the IMR study's directorate or advisory panels, were also actively involved in the work of the Stratton Commission.

None of this is meant to suggest that the successes of Stratton and his cohorts in seizing the moment in national ocean affairs were merely derivatory. My intention is, rather, to recall-as we consider the conditions of the Commission's achievements-that there was not only general impetus on several fronts in the 1960s to make U.S. ocean policy more coherent and effective; there was also a growing recognition in scientific and policy circles of the need to approach ocean (including coastal) policy issues in a more comprehensive and focused mode. Because the Schaefer IMR study was already out in the public domain, it was available to serve the Stratton commissioners and advisers as a model for its own work-and , at the very least, it indicates that the intellectual groundwork, and not only the political background, was already firmly established for the approach that the Stratton Commission mobilized so effectively in pursuing its mission.

That is to say, Stratton Commission's Report, in calling for "understanding of ecosystem dynamics," no less than in suggesting designs for "comprehensive [management] systems," reflected the strength and growing acceptance of new ideas that had already penetrated marine science debate as well as policy analysis discussion.[15] It was one of the Stratton Commission's major contributions to ocean policy that it brought these new modes of thinking into play in so effective a way at the highest level of the national policy process.

"Comprehensive Policy" and "Systems" (in the plural)

One of the most controversial reforms proposed by the Stratton Commission did not go to substantive policy at all, but rather was its proposal for a new National Ocean and Atmospheric Agency (NOAA). The new agency, intended to be an independent one that would assume supervision and coordination of numerous agencies formerly scattered throughout the government-but in addition would have some important managerial functions- was designed (as the Report argued) "to mobilize and impart energy to the total undertaking" of a plan for national action.[16] The list of functions that the Report recommended for assignment to NOAA was broad and revealed the serious intention to achieve a kind of comprehensiveness of management oversight and implementation that had never before been envisioned for ocean resources and problems. Among these functions were oceans exploration and support of basic science, development of marine fisheries and oversight of their management by a proposed set of regional interstate agencies formed by federal compact, promotion of marine education, and the administration

coordination for purposes of reducing of conflicts in multiple-use areas of resource management. In addition, the Report proposed that NOAA would provide directly essential services that included mapping and weather reporting to marine users and to the general public, and the development and oversight of a marine minerals program.

For all its emphasis on coordination and comprehensiveness of vision, policy concepts, and administration, the Stratton Commission recognized in explicit language the intractable realities of segmentation, declaring:

> It is impossible to deal with development and management issues in terms of marine resources as a whole, although general policy considerations must be accommodated.... There is no single national policy uniformly applicable to all resources, just as there is no single defense, economic, or foreign policy. Rather, there is only a body of experience and general objectives which guide decisions on specific issues at specific times.[17]

This feature of the Report is often forgotten when champions of greater centralization of power over ocean affairs hark back to the Stratton Commission as an advocate of an ideal that fell short of realization. The NOAA proposal, in its original form, is too easily conflated with the much more abstract idea of a "comprehensive policy." In fact, the organization of the Commission's studies and also its final report addressed issues in segments; the reality that separate sectors existed and had to be considered, to some degree, on their own individual terms (for fisheries, for recreation, for minerals, for scientific research, for defense, for international law, etc.) was not lost from sight or subordinated for cosmetic purposes to the rhetoric of concern with holistic issues.

As I have argued in a previous OGSG meeting, in revisiting the wide-ranging series of issues explored by the Commission, it is important to keep the realities of segmentation in mind. Some room for play at the joints—even zones of contradiction and a certain incoherence—will very likely need to be taken, now as in 1969, as a political requirement of success in achieving policy reform and adjustment. The ideal of "coherence" will not always be attainable; some of the problems before us in 1998 will have to be taken on their own terms, not only for political reasons but very likely because the optimal approach to policy, by one "objective" non-political standard or another, e.g., one dictated by scientific analysis, may indicate the desirability of segmented, single-sector solutions rather than a dogmatic subordination of sectoral policy goals to the imperatives of "comprehensiveness."[18]

To elevate comprehensiveness in the abstract to the status of the single controlling and determinative objective is an alluring option that will probably need to be resisted in several important segments of marine policy evaluation and reform. It may be found that the objective of attaining coherence will be much better served by accepting single-sector solutions when the evidence indicates their appropriateness, than by dashing headlong on a perhaps-quixotic course toward attaining comprehensive and wholly integrated policy.

When we consider, then, the best design of investigation for a Stratton Commission II, it seems to me important to accept that the single-sector approach is not necessarily obsolete or suboptimal-or *per se* deplorable. It is manifestly essential, however, that a new commission should take into account the need to attack head-on, as did the Stratton Commission, the problem of patently unnecessary (and damaging) administrative fragmentation of responsibility. And in light of the legacy of the 1970s-that great array of specialized legislation creating specialized agencies to oversee in a compartmentalized way specific areas of marine resources and issues (the Magnuson fisheries act, the Marine Mammal Protection Act, the Endangered Species Act, and the rest)-it seems important that the new commission should seek to identify the most promising avenues for more effective coordination, at a minimum, or outright administrative merger.

A final lesson to be drawn, in this context, from the Stratton Report and its approach is the desirability of a new commission's revisiting the question of an ecosystem design in shaping policy and administrative institutions. The Stratton Commission stressed the need for an ecosystem approach, but if revisited today each of its segment or sector reports

and recommendations would look quite different from a 1969 perspective since we have gained so much experience since then in attempting to make ecosystem ideas operational in administration. Unfortunately, it must be conceded, a great deal of "ecosystem management" design in the various agencies of government today amounts to little more than rhetorical re-packaging or outright obfuscation. Prof. Oliver Houck, among others, has concluded, for example, that ecosystem management systems have proved in the field to be "amorphous and unenforceable;" [19] and sometimes they seem to be justified by their champions in terms that amount to little more than a design for avoiding definitive management decisions and keeping "stakeholders" happy.

These issues which have arisen in ecosystem analysis and management indicate that the opportunity for a new commission to clarify the conceptual problems and point the way to policy solutions is all the more needed and capable of producing useful results. Similarly, one can anticipate that objectives of sustainability and biodiversity will need to be integrated fully into the foci of new sectoral studies as well as an overall report on policy, especially as they are mandated by the terms of the latest developments in international environmental law.

Looking Back: How the Commission Worked

One of the most interesting questions before a conference on prospects for a Stratton II concerns what aspects of the first commission's organization and mode of investigation ought to be emulated, and which if any rejected or modified. Without attempting to provide answers, it is worth setting forth that the staff was of exceptional quality-a factor no doubt more important than mere size-but the 15 commissioners had 15 professional staff and an additional ten support personnel. There was correspondence with 600 individuals in government, the academic institutions, and industry, in addition to the commission's hearing formal testimony of 126 witnesses. Monthly meetings were conducted; and a total of 19 plenary meetings, lasting two to four days, were held. In addition, special panels were established with assigned areas of responsibility. Without access to the records of hearings and exchanges of working papers, etc., it is difficult for the historian to judge effectiveness-except by reference to the final product in the Report, whose excellence on so many counts is legendary. The time permitted for preparation of the present work did not allow for archival research or more than preliminary interviewing, to probe some of these important questions. But a fuller analysis of the individual segment reports and recommendations could, I think, provide important insights into the ways in which the Stratton Commission's organization, formal procedures, and informal dynamics hold lessons for us today.

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[1]Author's note: I want to acknowledge the seminal importance of Edward Wenk, Jr., T*he Politics of the Ocean* (Seattle, 1972) as a source of information and interpretations for any retrospective study, such as this one, seeking to assess aspects of the origins, context, and effectiveness of the Stratton Commission, either on its own terms historically or as a case study offering lessons for the future. For a much longer-term view that provides essential historical perspective on both the commission and the larger governmental enterprise in science, technology and policy in which it played so important a role for ocean affairs, the classic study by A. Hunter Dupree, *Science in the Federal Government* (New York, 1957) remains invaluable; so too with respect to policy history and analysis are the various studies, over the years, by leading scholars in policy process and especially science policy and ocean policy, including, among others, Biliana Cicin-Sain, Robert Knecht, Don Price, Warren Wooster, John A. Knauss, Robert Friedheim, Jack Archer, Gerard Mangone, Robert Abel, and William T. Burke. Though not specifically cited in this conference version of the present study, their writings provide essential context and information for any study with purposes such as animate the present one and the conference for which it is prepared. It should be noted that some sections of the present conference paper incorporate materials from an earlier brief presentation made by the present author to the 1992 Honolulu meetings of the Ocean Governance Study Group.

[2]*Our Nation and the Sea: A Plan for National Action* (Washington, 1969).

[3] Wenk streses throughout his analysis in *Politics of the Ocean* the key importance of Vice President Humphrey's role, a view seconded in the statement prepared for this conference by John Knauss. At a later time, the fortuitous advantage of one member's having direct access to President Nixon's most influential adviser, Attorney General Mitchell, kicked in as a critical factor in getting the report prominently on the White House agenda and assuring a more favorable presidential reaction to its principal organizational recommendation that (by all indications) it would have received otherwise from the Oval Office.

In a widely cited analysis of ocean policy history, Robert Abel states: "Viewed in retrospect, it would be difficult to identify a more dynamic duo than Vice President Humphrey and Dr. Wenk" as evidenced in their role in the cabinet level marine council, a group that would be of decisive importance in anticipating issues, paving the way politically for the Stratton Commission, and complementing the efforts of the commissioners and the staffs and consultants that were responsible for the various segments of the Stratton study. Abel, "History of the U.S. Ocean Policy Program," in *Making Ocean Policy* (ed. F. W. Hoole *et al*., 1981) 17.

[4]In their study of the auto industry and pollution control, Krier and Ursin emphasize that in the dynamics of political and policy process leading to adoption of the smog control regulatory regime, it was the sudden advent of smog alerts at an unprecedented level that galvanized public opinion and overcame the "normal" process by which industry would stand firm and place the burden of proof so heavily on environmentalists that the legislation could be blocked. James Krier and Edmund Ursin, *Pollution and Policy: A Case Essay on California and Federal Experience with Motor Vehicle Air Pollution, 1940-1975* (Berkeley and Los Angeles, 1977).
Stonewalling also figured heavily in the oil industry's resistance to popular efforts to place offshore oil rigs under strict regulation, but the Santa Barbara oil spill disaster changed entirely the balance of power in the political arena almost overnight. On this and other aspects of change in legal process relevant to this conference's theme that characterized the 1960s and early 1970s, see Harry N. Scheiber, "Technology and American Legal Development, 1789-1986," in *Technology, The Economy, And Society: The American Experience*, ed. J. Colton and S. Bruchey (New York, 1987), pp. 83-125.

[5]The importance of these predecessor studies is stressed by both Ed Wenk and by John Knauss in their contributions to this symposium.

[6]Margaret Deacon's brilliant historical studies, as well as the major works by Susan Schlee, document the earlier episodes of upsurges of interest in oceanographic enterprises. See Deacon, *Scientists and the Sea, 1650-1900: A Study of Marine Science* (New York, 1971); Schlee, *Edge of an Unfamiliar World: A History of Oceanography* (New York, 1973).

[7]See Harry N. Scheiber, "Modern U.S. Pacific Oceanography and the Legacy of British and Northern European Science," in Stephen Fisher, ed, *Man and the Marine Environment* (Exeter Maritime Studies, No. 9. Exeter, U.K., 1994), 36-75.

[8]The defense industry interests played a part in the debate of ocean policy that was probably impelled in part by concern about a possible decline of contracts in other areas of military technology. A fuller discussion of this aspect of the debate will be reserved for a later revision of this paper.

[9]Scheiber, "Pacific Ocean Resources, Science and Law of the Sea; Wilbert M. Chapman and the Pacific Fisheries, 1945-70," *Ecology Law Quarterly*, 13 (1986) 381-534.

[10] Ibid.

[11] Milner B. Schaefer to Sen. Warren Magnuson, May 6,m 1964, copy in Wilbert M. Chapman Papers, University of Washington Libraries, quoted in Scheiber, "Success and Failure in Science-Policy Interactions: Cases from the History of California Coastal and Ocean Studies, 1945-1973," in National Research Council, *Improving Interactions between Coastal Science and Policy* (National Academy of Sciences, 1995), 107-8.

[12] Ibid. ("Success and Failure"), 108ff.

[13]On the emergence of ecosystem science, see Harry N. Scheiber, "From Science to Law to Politics: An Historical View of the Ecosystem Idea and Its Effect on Resource Management," *Ecology Law Quarterly*, 24: 631-652 (1997); and id., "Pacific Ocean Resources," supra note 9.

[14]"Success and Failure," cited n. 10 supra.

[15]Report, at pp. 15, 173.

[16]Report, p.—- . In this and the following paragraphs, I incorporate directly materials from my 1992 presentation to the Ocean Governance Study Group Symposium volume, *Ocean Governance: A New Vision-Analyses for Improved, Integrated Governance of Oceans and Coasts*, ed. Biliana Cicin-Sain (Newark, Delaware, 1992), 19-21.

[17]Report, p. 83.

[18]This is the place in policy evaluation in which we badly need a more rigorous approach to the uses of scientific information and analysis in relation to social and political analysis—a vexed topic which obtained a fresh look from an NAS-NRC Ocean Studies Board conference at Irvine on science, policy studies, and coastal management (papers published in NRC, *Improving Interactions*, cited n. 10 supra).

[19]Oliver A. Houck, "On the Law of Biodiversity and Ecosystem Management," *Minnesota Law Review*, 81: 869 (1997) (a study and critique of the U.S. Forest Service ecosystem and biodiversity programs as they have been applied in the field). See also Scheiber, "From Science to Law to Politics," cited note 11 supra.

THE GREAT OCEAN COMMISSIONS CORNERSTONES FOR REJUVENATING MARINE SCIENCE AND POLICY

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(Editors' Note: This is an outline of Ms. Katsouros' talk.)

I. Purpose of the Paper

A. To compare and contrast the roles and outcomes of a Year of the Ocean Commission with those of the Stratton Commission.

B. Concentrating on Marine Science and Policy

1. Discuss the many accomplishments of the late '60s and '70s

2. Point out the central role of the Stratton Commission

3. Compare the late '60s, its paradigms, planning environment, stakeholders, with those of the late '90s

4. Argue what it will take to make the first decade of the new millenium as productive as the '70s

II. Discussion of the Accomplishments of the Late '60s and '70s

A. Marine legislation and activities

1. 1966 Sea Grant program established

2. 1966 Marine Resouces and Engineering Development Act

3. 1970 Formation of NOAA

4. 1970 Beginning of IDOE and World Weather Program

5. 1972 Coastal Zone Management Act

6. 1972 Clean Water Act

7. 1972 Marine Protection, Research, and Sanctuaries Act

8. 1972 Marine Mammal Protection Act

9. 1973 Endangered Species Act

10. 1976 Magnuson Fishery Conservation and Management Act

B. Late 1960s paradigms

1. Marine resources "infinite"

2. Expand use and accelerate development

3. "Grow the economy"

C. Marine Resources and Engineering Development Act (1966)

"Develop, encourage, and maintain a coordinated, comprehensive, and long-range national program—to protect health and property and enhance commerce, transportation, and national security—and to increase utilization of these resources."

IV. Central Role of the Stratton Commission

A. Commission objectives

1. Maintain our expanding national economy

2. Obtain the needed resources from the marine environment

B. Composition of Commission

1. 15 members appointed by the President from Federal and State government, industry, universities, and laboratories

2. 4 advisory members from among the members in the Senate and House of Representatives

C. Commission report

1. Published *Our Nation and the Sea* in January, 1969

2. 126 recommendations in 17 categories

V. Comparison of the Late '60s with the Late '90s

Can we expect similar results/outcomes from a 1990s Ocean Commission?

A. Differences in stakeholders

1. 1960s
   a. Government (Federal and State)
   b. Industry
   c. Academia

2. 1990s
   a. Government (Federal, Regional, State, Local)
   b. Industry
   c. Academia
   d. Environmental Community

B. Differences in paradigms

1. 1960s
   a. Marine resources infinite
   b. Expand use and accelerate development
   c. Growth

2. 1990s
   a. Marine resources finite
   b. Balance use and conservation
   c. Sustainability

C. Differences in management paradigms

1. 1960s
   Co-manage oceanic and atmospheric sciences
2. 1990s
   Co-manage physical, chemical, geological, biological systems; i.e. Earth as a system

D. Differences in governance approaches

1. 1960s
   a. Federal government often viewed as the solution to almost any problem
   b. Federal budgets and roles were expanding
   c. Marine resource governance largely a Federal responsibility

2. 1990s
   a. Solutions to America's problems are often outside the Federal government's purview
   b. Federal budgets and roles are diminishing
   c. Marine resource governance is shared by many layers of government and stakeholders

VI. Discussion of Necessary Factors for a Productive First Decade of the New Millenium

THE STRATTON COMMISSION AND FUTURE DEVELOPMENT OF U.S. MANAGEMENT POLICY FOR ITS EEZ

◈ **Roger E. McManus** ◈

President, Center for Marine Conservation

Introduction

Over the last several months the Steering Group for the Year of the Ocean organized by the H. John Heinz III Center for Science, Economics and the Environment has been conducting a series of meetings and workshops to examine the state of U.S. marine resources and their management. The Group was comprised of a wide spectrum of ocean interests ranging from federal and state governments to the resource production and transportation industries, academia and the environmental community. Many of these interests were on opposing sides in past policy debates, but the Heinz Center process was remarkable in the shared sense of purpose by the participants to confront marine policy issues the United States faces in managing its Exclusive Economic Zone (EEZ). For legal and political reasons the Group was constrained from pursuing their work with the view to make formal recommendations, but the consensus on major themes emerging from their discussion will be evident from the upcoming release of their report and other venues for discussion of its content and the deliberations of the group.

Notwithstanding, the diversity of the group, all expressed concern about the significant challenges facing the country in managing the U.S. EEZ and its resources. There was recognition and support for the concept that the nation's economy, the quality of our marine environment, and the productivity of our marine resources are inextricably linked. There was skepticism expressed about the effectiveness of the current approaches to resource management, where neither management objectives nor the strategies to achieve them are well defined. There was concern about the adequacy of management structure and political will for establishing a more transparent and effective management process. The inadequacy of research funding, and efforts for public education about ocean issues was a frequent topic, and the need for increased attention to those areas was supported by the Group.

While analysis of the work of the Stratton Commission was not a significant topic for the Heinz Group, the Group did characterize its own efforts as a product for use by the new Commission that would be established by the Oceans Act that has passed the U.S. Senate and is currently being considered by the U.S. House of Representatives. Further, when a House Resources Committee staff member told the Group that the Committee leadership may want to constrain the scope of the work for the Commission to improving the existing government structure, members of the Group registered strong opposition to such constraints. The Group as a whole expressed the need to make it clear that the Commission should not be constrained in any way regarding the scope of its deliberations on U.S. marine resource management need and policy. As was clear from the testimony given by several members of the Heinz Group who testified at the last House Hearing on the Oceans Act, the Group favors maintaining the independence of the new Commission from any oversight by the Executive Branch.

Early in 1996, the Center for Marine Conservation (CMC) commissioned a paper from Michael Weber (Weber, 1996), a former CMC Vice President for Programs, to examine in part the potential for establishing a new Stratton-type oceans commission and other mechanisms for reforming U.S. marine policy for the EEZ on the occasion of the Year of the Ocean. This paper was subject to limited distribution in Congress and the Executive Branch, and its conclusions were the subject of presentations by Mr. Weber and others. Mr. Weber's conclusions echo

those of the Heinz Group. He strongly supported the need for a new effort to update the work of the Stratton Commission, recognizing the difficulty of achieving the political conditions for establishing a new Commission with needed authority and resources, and for ensuring the effectiveness of its work. This paper draws heavily on Mr. Weber's work.

In his introduction, Mr. Weber noted: "A survey of the last thirty years of ocean policy in the United States shows that changes in policy have been caused generally by external events, such as the Prince William Sound oil spill or overfishing by foreign fleets off New England. The principal and perhaps only, exception to this rule is the so-called Stratton Commission, whose 1969 report *Our Nation and the Sea* led to the creation of the National Oceanic and Atmospheric Administration (NOAA) and contributed greatly to the passage of the Coastal Zone Management Act." In the following I will emphasize that while some of the conditions that made success of the Stratton Commission possible are present for the proposed new Commission in the Oceans Act, others are lacking.

For example, while recent public polling suggests that the public is in strong favor of conserving marine resources and protecting the marine environment, we should be concerned about the depth of understanding and commitment by both the public and policy makers for a lengthy and possibly significant policy review. Evidence for such concern can be illustrated in two recent experiences. First, during the course of the Heinz Group's deliberations, in the International Year of the Ocean, while plans were proceeding feverishly for a National Ocean Conference (originally promoted as a White House Conference) in June, and Congress is preparing to pass major marine legislation in the Oceans Act, the White House chose to celebrate Earth Day with the President and Vice President of the United States working on a hiking trail in West Virginia. Whether consideration was given to making the White House venue for Earth Day on the Coast, I don't know.

Alone such an incident would be insignificant, but for many of us who have worked to elevate the interest of the Executive Office of the President (EOP) in ocean issues, it was an additional confirmation, from extensive experience, that these issues do not have high visibility in the Executive Office of the President. NOAA staff have complained that is the case in pursuing their issues in this Administration's environmental agenda. On the other hand, recent staff changes in the President's Council on Environmental Quality has increased dedicated staff time to marine environmental issues. One of the popular notions regarding the reasons for the success of the Stratton Commission was that its work enjoyed significant support from the White House. If that is a requirement, we need to work hard to convince the Clinton Administration that our issues are worthy of its concern and support.

Second, I was a guest on a recent radio talk show where I discussed the deliberations of the Heinz Group, and emphasized the problem that the United States of America had no plan for administration of the EEZ, and that we lacked a lead agency for its management comparable to lead agencies for public lands. One caller who identified himself as a commercial fisherman, and a marine lawyer for 20 years, argued that such an agency existed, the "National Oceanographic and Atmospheric Administration" (sic), and that NOAA essentially had omnibus legal authority for the EEZ, including that for minerals and energy development. This assertion of course is factually wrong, and indeed in practice NOAA regularly does not assert leadership in ocean policy within the Executive Office of the President.

Public understanding about the U.S. management regimes and needs is not optimum for informed citizen involvement in developing effective marine policy. This is troublesome in that strong Congressional support for the work of the Stratton Commission also seemed important to its success. Without a knowledgeable citizenry expressing their concern to their elected policy makers, it is questionable whether the needed level of support will be forthcoming from the 105th and 106th Congresses.

The Stratton Commission

As Weber notes in his paper: "[T]he work of the Stratton Commission and the White House Marine Sciences Council in the late 1960s was the culmination of a process begun in the late 1950s with the convening of the National Academy of Sciences Committee on

Oceanography (NASCO), which issued several reports on national interests and needs in ocean science, technology, and resource development. According to Wenk (1972 and 1995), these reports and the promotion of ocean interests in Congress by the chairman of NASCO fostered the development of a group of Senators and Congressmen who became advocates for the oceans in the 1960s, including Senators Magnuson, Hollings and Bartlett, and Congressmen Bonner, Lennoh, Rogers, and Hanna." "With the passage of the Marine Resources and Engineering Development Act of 1966, Congress established the Stratton Commission and the Marine Sciences Council - the former to resolve the issue of bureaucratic organization of Federal oceans efforts. The report of the Stratton Commission was eagerly awaited by a growing group of members of Congress -a factor that contributed greatly to the actual implementation of some of the Commission's major recommendations."

In examining what made the Stratton Commission successful and what would contribute to the success of future such efforts, Weber observed: "One theory of policy change described by Knecht, Cicin-Sain and Archer (1988) holds that change occurs when three streams of activity come together at the same time. In the first stream, problems come to the fore due to a crisis or poor performance by programs. Solutions to these problems, meanwhile, develop in a kind of primeval policy soup made up of conferences, hearings, conversation, etc. Solutions survive if they are technically feasible, suit dominant values and the prevailing national mood, can be funded, enjoy political support, and can respond to opposition. But these two streams will go nowhere without the energy of the political stream, which itself swings with the national mood, national elections, the composition of Congressional committees and interest group campaigns. All three streams can be influenced, but they all must flow together if change is to occur."

These "streams" came together for the Stratton Commission: a general lack of a federal administrative regime for the oceans, high level political support by the White House and the Congress for action, and solutions that survived in part in the ensuing political debate. The success of the Stratton Commission effort once it was initiated is widely attributed to its strong mandate, the energy and skill of its chair and staff, and the overall leadership of Vice President Humphrey in promoting proactive revision of U.S. marine policy to meet the emerging challenges to the nation.

In evaluating why subsequent efforts failed to substantially reform ocean policy, Weber (1996) identified several causes, including limits to the scope of deliberations in those efforts and the lack of top-level political support. These are issues that constrain the current effort to launch the proposed new Commission.

The Oceans Act

There are similarities and disturbing differences between the work of the Stratton Commission and the current situation that may greatly affect the success of a new Commission. There appears to be emerging consensus from the Heinz Center process and other fora that the challenges facing U.S. management of the EEZ exceed the capacity of our present policy and management regimes. That, coupled with public support, although its understanding and the depth of support could be strengthened, suggests the need to make a course adjustment after 30 years.

Fortunately there is a core group of Congressional leaders who parallel those that supported the work of the Stratton Commission. That group, however, needs to be strengthened in numbers and otherwise assisted in fulfilling its role.

Unfortunately, there is a great danger that a new Commission will not be established, or be established by the 105th Congress unwisely with limitations on the scope of its deliberations, or that it will be inadequately funded. A Commission that is not capable of addressing issues that have been clearly identified as part of the needed agenda for such work will not be the subject of investment by the growing and diverse oceans communities. Such a Commission will ultimately not receive the attention and support of its work needed to ensure it will be considered a source for major policy change.

In addition, the need for securing leadership from the Executive Branch is confounded by three

problems. First it is not clear that there is a strong interest in the Executive Office of the President for the substantive issues and challenges, and therefore the commitment to doing the work needed to support a comprehensive review of U.S. ocean policy and take needed action. While much effort was given, for example, in preparation of the national conference in June, it had the aura of event planning rather than as part of an overall strategy for policy reform.

Second, similar to the situation that called for strong leadership of Vice President Humphrey for the successful Marine Sciences Council, there is a strong need for Vice President Gore to assume such leadership to follow through on the promise of the Oceans Act. [Gore seems uniquely suited to the task. Ocean research and management is a highly technical exercise which is within the apparent personal interests of the Vice President, and the development and conservation of ocean resources promises exciting new opportunities for the economy and health and well-being of the American people. Unfortunately, the role of the Vice President in this effort may be impeded in the highly partisan, national political atmosphere from which we suffer at the end of the century. There is reticence by members of the 105th Congress to give such a potentially highly visible platform to a Democratic candidate for the Presidency. One solution would be to set up Executive Branch leadership in this effort by administrative action, but others worry that taking such an initiative before passage of the Oceans Act will threaten its passage. This is a clear case of partisan politics getting in the way of the national interest.

Third, while human population demands on ocean resources and assaults of pollution on the marine environment are increasing at a worrisome rate and level, there are strong political and philosophical issues that interfere with the further development of solutions and management regimes. In particular, the U.S. Department of State, and the Department of Defense are very concerned that the principles underlying the Law of the Sea and freedom of ocean navigation not be trammeled, or that operations important to national security not be compromised by practices that may restrict current practices for ocean navigation or use. Notwithstanding substantive resource management needs, the concerns of State and Defense often dominate high-level policy decisions, frequently behind closed doors and out of sight of public process. There is recurring debate on the application of U.S. domestic law to the EEZ and to U.S. operations on the high seas, including with respect to the National Environmental Policy Act and the Endangered Species Act. The recent decision by President Clinton to request the International Maritime Organization's cooperation in protecting right whales was important in this context in that it establishes priority for marine conservation in U.S. ocean policy, requiring navigational protocols for protecting the marine wildlife. I expect the Department of Defense to work to undermine the policy and to secure a defeat to the President's proposal to the IMO, but in any case it is clear that we as a nation have to resolve conflicting perspectives on navigation and defense if we are to make needed progress in establishing effective management regimes for our marine territory and resources. The creation of the Commission by the Oceans Act is a major opportunity to start a national conversation on those issues, but unless the White House uses its authority to bring State and Defense to the table significant progress will not be possible.

Federal Government Organization for EEZ Management

The most critical issue facing the Commission will be how the United States of America will effectively govern its EEZ, including identifying what changes are needed to ensure adequate administrative authority, financial resources, and political will to do the job. For years I have advocated for consolidation of marine management authorities in NOAA as a means to a more coordinated and effective management regime for the U.S. EEZ, but I have been swimming against the political current. While there is considerable merit in establishing a lead federal agency for EEZ management, with lead authority for management coordination and policy development, I no longer believe that effort can simply be achieved through an expanded and strengthened NOAA.

When NOAA was finally established in the Nixon Administration, it was weaker in execution than in original concept. The agency was charged with a major role in developing atmospheric science, and it has an excellent reputation for the quality of its scientific work. There is, however, regular concern

among its ocean constituents about the "wet side" of NOAA, and its capacity and will to step up to the plate as a resource management agency.

The scientific culture of NOAA has resulted in great administrative stability. As a non-government organization representative principally engaged in advocacy for strengthened conservation policy, I can relate that changes in administrations rarely result in significant policy changes or procedures within the agency since my experience starting with the Ford Administration. NOAA exhibits remarkable bureaucratic stability, and NOAA personnel are generally regarded as dedicated people, well qualified for their work, who produce quality products and services.

Some of the disappointments with NOAA's performance may be attributed to its placement within the Department of Commerce. With the notable exception of Secretary Brown, and more recently with the intercession of Secretary Daley regarding the recent right whale decision, Commerce leadership generally appears to be disengaged from the agency except when its efforts to carry out its stewardship responsibilities conflict with Departmental economic or political interests. NOAA's program and budget needs are seemingly not priorities in the Department and its overseers in the Office of Management and Budget with substantially different interests, and the bureaucratic gap further isolates the agency's policy concerns from visibility within the EOP.

Unfortunately too, the sources of NOAA's strengths may be the roots of its weaknesses. While NOAA was established and functions well as an agency to develop the science, it is increasingly called to perform stewardship and management responsibilities for ocean places and resources. Scientists are trained to be reluctant to come to closure on cause and effect, and on projecting policy in the face of a lack of information. Such qualities make for good science, but can lead to gridlock in developing and implementing management policy. NOAA struggles with making and implementing management decisions, and its leadership is extraordinarily sensitive to political pressure from Congress compared, for example, to those facing similar responsibilities in the Departments of the Interior and Agriculture, and the Environmental Protection Agency.

NOAA regularly operates in violation of administrative law. While mounting administrative responsibilities and the lack of needed staff and funding resources certainly contribute to this problem, the agency is consistently late in meeting legislative and administrative deadlines. The agency is averse to making specific decisions within specific time frames. Their response to controversy is often to unduly or illegally prolong process, and process is frequently reinvented in the face of controversy. The results are that decisions delayed, like justice, are direction denied for effective and reliable management regimes. And then, management decisions made are frequently revisited in the heat of political pressure.

Failure to run an administratively tight ship makes the agency a prime candidate for litigation, especially for those who see significant public relations benefit in taking the agency to court, notwithstanding there may be more traditional or better avenues for solving management problems. Perhaps the most troublesome result of the culture that has developed within the agency is a drift to a seeming preference to rely on litigation for political cover in carrying out statutory responsibilities. Through the years NOAA staff and leadership have made it clear that they would welcome more litigation on politically difficult issues. With litigation, the agency has an opportunity to absolve itself of responsibility for undertaking politically unpopular administrative processes or making unpopular decisions. Once in this mindset the appeal may become inescapable; the agency can avoid political blame and transfer it to a statute or to the statute's supporters, and it can then use the complex milieu of administrative law and litigation to provide greater flexibility to chart an agency course notwithstanding statutory direction or stewardship responsibility. Threatening a wayward agency with litigation loses its punitive and advocacy value if the agency welcomes intercession by the courts with the view to use that litigation to try to demonstrate that it is the demands of the law not the agency that is at fault. The checks and balances of our system of government are considerably eroded when adherence to law loses relevance.

After supporting expansion and consolidation of NOAA to fill a need for better leadership in ocean management, I have concluded that this course will be an impediment to the goal of establishing the needed capacity to govern our EEZ and proactively manage

its resources to meet the challenges of the next century. The new Commission should have the authority to carefully examine this issue. And, if upon review it concurs that a lead ocean agency is needed, I would argue that agency should essentially be recreated from current authorities, which are scattered among a number of agencies in addition to NOAA, to one that is explicitly given as its prime directive to provide for stewardship of the nation's marine resources, using, of course, the best scientific information available for making its decisions. This may from one perspective be a reorganization based on the current NOAA, but a new mandate for future leadership is required unless we are satisfied with the current direction.

Management Strategies for the U.S. EEZ

As noted above, the United States lacks, and in the author's opinion, needs a plan for its EEZ. Currently the EEZ is managed as what is in modern terms considered a commons (although the post-Hardin concept of what constitutes a commons is in stark contrast with the high degree of social organization used to manage commons resources in the 18th century (Hanna, 1990)). Under the current management regime, selected management functions for the EEZ have been dealt to a variety of agencies with inadequate provision for resolution of conflicts. There is no formal coordination and leadership of executive branch management actions, and no overall framework for conducting general policy or resolving conflicts (other than the overarching foreign policy and defense concerns noted above that are aired in the National Security Council).

Increasingly, uses are being proposed for the EEZ and its resources for which no agency has adequate authority to control. In recent testimony before the House of Representatives (McManus, 1998), I noted, for example, the lack of adequate authority to address the development of pharmaceuticals from the ocean, products that may become the single most economically valuable resources taken from the ocean.

Under current growth rates human population may almost double by mid-next century, with more people living on or near the coasts than are alive today. The pressures on the coastal and marine environment will be enormous, and choices for meeting the needs of people and trying to conserve marine biological diversity will be critical to the future of humanity, and the biosphere. For those concerned with protection and conservation of nature, and the well-being of people, the course is clear. We need to both increase production and provision for direct human needs, and protection for nature, and it is unlikely these needs will be met by happenstance.

To fulfill its promise the Commission created by the Oceans Act will have to address the need for a new governance framework. I predict there will be a surprising coalition of competing interests supporting that work, but I worry that the recognition for the need for reform is outpacing the interest or commitment of our political leaders.

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THE NEED TO RE-CONSIDER U.S. COASTAL POLICY

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The recent "Stratton Roundtable" discussion in Washington, D.C. (May 1, 1998), in which we participated, was focused almost exclusively upon ocean (EEZ) policy and issues. While a comprehensive reexamination of the many significant U.S. ocean policy issues and problems is certainly warranted, we believe it is also critical to recognize the need to re-consider U.S. coastal policies, programs, issues, and problems, which are not to be subsumed under the broad rubric of "ocean" policy. Consequently, we would endorse the establishment of an independent national commission with sufficient expertise and resources whose mandate would include a re-examination of coastal and ocean laws, policies and programs, with specific emphasis upon the complex interactions involving the land-coast-ocean ecosystem.

In the United States, we are almost 25 years into implementation of the federal-state-local coastal zone management program, which now includes participation by 32 coastal states and territories. More than $1 billion in federal dollars and nearly an equal amount of state dollars have been expended to support this effort. Generally, and despite the lack of "hard" evaluative evidence, coastal management programs are thought to be successful, and, in fact, to serve as some kind of model for coastal management internationally. It is apparent that, whatever else one might say about the U.S. coastal management experience, this unique program has become "institutionalized" if not bureaucratized as it has reached middle-age.

Despite this success, our concern is that serious environmental and natural resource management problems persist in the coastal areas of the United States and must be considered anew, perhaps from very different viewpoints than have prevailed in recent decades, because, to put the matter as clearly as we can, our current policies have not solved these problems, with potentially disastrous consequences for coastal areas and resources.

It is not difficult to compile a list of these problems and consequences. To illustrate, we offer several major issues and problems that seem to be intractable in terms of existing environmental and coastal policies. First, because of its ubiquity and the seriousness of its effects, is the problem of non-point source pollution, especially in coastal areas and waters. Although in 1990 the Congress established the so-called "6217" program to require coastal states to develop strategies to deal with coastal non-point source pollution, the program has been beset with difficulties, controversy, and lack of funding. Eight years after its inception, the program has failed to achieve the expectations of its proponents. But, we hazard to say, "the technical" means to address non-point source pollution are not particularly difficult to devise or perhaps even very costly to implement, in societal terms, when the magnitude of its adverse effects are considered.

The difficulties are largely matters of policy, law, and politics. For example, and for reasons we will not explore here, the legal authority to address non-point source pollution under the Clean Water Act (CWA) is extremely limited; this is not to say that there is no authority to do so under the CWA. But, for the federal government to assert sufficient authority under the Constitution to deal with the problems of non-point source pollution would result in a massive shift of control over land and water uses from state and local governments to the federal. No one has proposed such a direct and major re-structuring of political and legal authority in the United States, and we would be horrified at any such prospect. On the other hand, states and local governments possess all the legal authority necessary to address this problem — the

most serious water pollution problem the nation must confront. The difficulties lie in the areas of their willingness and capacity to do so. Therefore, in our opinion, a major task of any re-examination of U.S. coastal policy will be to devise a strategy to bring this wealth of state and local authority into play, so to speak. We won't anticipate the outcome of such a re-examination, but we strongly believe that this issue is equally as important as any strictly "ocean" policy issue one might suggest as worthy of attention in any major policy review.

An important second example concerns wetlands protection. Here, the federal government claims substantial authority under the CWA to manage activities affecting wetlands. Yet, the complexity and ambiguity of the section 404 program of the CWA have rendered it an ineffectual program to protect wetlands. In some respects, it has become a program to license their destruction. The consistency provisions of the Coastal Zone Management Act (CZMA) provide the means for states to supplement federal authority under the CWA to protect coastal wetlands. Yet this consistency authority, as important as it may be, is re-active (that is, it won't support a positive, pro-active policy or program) and is subject to review and nullification by the Secretary of Commerce. Any study of national coastal policy must address the adequacy of, and propose means to strengthen, federal, state, and local authority and capacity to protect wetlands.

A third issue of great importance in any re-consideration of national coastal policy involves "updating" or modernizing federal laws and programs, such as the CZMA, which were enacted in an era when we were first becoming aware of the findings of modern ecological science. Although we believe that the CZMA was an innovative piece of legislation, and essentially sound environmentally and politically in its state- and local government-based approach to managing and protecting coastal areas and resources, it does not embody a consistent ecosystem-focused view of coastal management. For example, the inland boundaries of the "coastal zone" of the states, as defined by the CZMA, vary widely from state to state because the CZMA permits almost unfettered discretion in federal and state managers to determine such boundaries. In no state do they include sufficient space to incorporate areas such as watersheds and drainage areas where human activities and ecological processes affect coastal lands, waters, and resources. This lack of ecosystem management perspective in the CZMA, as well as in the CWA and other federal and state laws, demands attention in any re-consideration of U.S. coastal policy.

We could easily add to this list of coastal problems and issues demanding and not receiving attention. They are not trivial or merely involve filling in the gaps of current policy. On the contrary, addressing them requires some basic re-thinking of existing coastal law, policies, and programs within a more comprehensive re-examination of coastal-ocean governance and of the extensive linkages among landside activities and the health of the oceans.

Finally, we would like to suggest that, although a modern "ocean" policy for the United States may require the expansion of federal agency authority, such as in the EEZ, "coastal" policy does not. We would argue that the strategy adopted in the CZMA points us in the right direction in devising coastal policy — greater reliance upon state and local government authority, greater involvement of local communities and citizens in decisions affecting the environment and allocating and protecting natural resources, and a more generous provision of federal assistance and funds to build state and local capacity. And it may be that this "coastal " model is relevant to certain EEZ resource management issues. This minor heresy might be worth some attention.

OUR OCEAN FUTURE*
(Executive Summary)

Presented by Charles A. Bookman

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The United States is surrounded by one of the largest, richest, and most diverse marine territories of any nation. From the Arctic Ocean bordering Alaska to the Atlantic, Caribbean, and Pacific oceans framing the mainland, Americans enjoy and prosper from an abundance of marine resources and activities, including productive fisheries, global trade, coastal recreation, mineral and energy production, and diverse marine ecosystems. But today these resources and activities face an array of threats, which at best may result in lost opportunities and at worst can cause irreparable damage. Regrettably, the environmental quality of marine areas and resources, and the economic value of vital ocean and coastal industries such as trade, tourism, and fishing (and the communities that depend on these activities), will be in jeopardy unless effective measures are taken immediately to safeguard, protect, and restore America's oceans and coasts.

After consulting with 200 ocean and coastal leaders from industry, government, academia, and environmental organizations, The Heinz Center Steering Group for the Year of the Ocean has concluded that there is an urgent need for a systematic and comprehensive review of ocean and coastal policies and programs. Unless action is taken now, significant benefits to the economy and quality of life will be lost, and the United States will fall behind other nations in using and conserving the oceans and their resources. An integrated vision, and a plan for achieving it, must be developed for U.S. marine areas, resources, and activities. A restructuring of national, regional, and local mechanisms for managing oceans and coasts may be necessary, along with new investments in science, education, and management.

On the positive side, a great diversity of stakeholders, including all levels of government, are interested in helping to develop and implement solutions. Members of the Steering Group believe that an independent commission mandated by the U.S. Congress and supported by the Executive Branch of the U.S. Government offers a means to rethink the nation's stake in the ocean and decide how to address the related challenges and opportunities. The commission would be charged with making recommendations to rejuvenate the nation's ocean and coastal policies and programs and realign them for the future.

Ocean Issues Facing the Nation

The preeminent challenge for the United States is to achieve integrated management that balances the use of ocean resources with the conservation of those resources. Enormous economic and environmental benefits would result. This challenge can be met if the nation can overcome the obstacles that have blocked progress in the past. The three principal obstacles are the following:

The nation has underinvested in the physical and technological infrastructure necessary for the efficient use of the oceans and coasts. Elements of this infrastructure include ports and waterways, research laboratories and facilities, and marine services.

The national and international institutions and mechanisms for governing and managing ocean and coastal areas and resources are often fragmented and have conflicting mandates. Insufficient effort has been devoted to developing and applying the knowledge necessary for wise management.

**** The Heinz Center, 1998. Our Ocean Future. Washington, D.C., John H. Heinz III Center for Science, Economics and the Environment.***

The Steering Group defined the dimensions of these obstacles and explored potential solutions in three national meetings convened to focus on the following broad issues: managing the U.S. coasts for economic and environmental prosperity, protecting and restoring fisheries and other living marine resources, and advancing and applying ocean science and technology for the use and conservation of the marine environment.

Managing the Coasts for Economic and Environmental Prosperity

Every American is affected by the oceans. As vast as they are, the oceans can also be harmed by humans. Changes in oceanic conditions in the far Pacific can determine whether the next growing season for Midwestern farmers will be wet or dry. Conversely, agricultural practices, sewage processing, automobile emissions, and other human activities generate by-products that contain nitrogen or other nutrient elements, which eventually find their way into the ocean. Excess nutrients in coastal waters can trigger harmful blooms of marine organisms that adversely affect coastal water quality and fishery resources. Every year, some Americans have to change vacation plans because of beach closures, or endure "fish scares" in the seafood marketplace, because of broad-based concerns about environmental quality and public health.

The United States is by far the world's largest marketplace. American factories and stores depend on imported goods. Approximately 40 percent of the total value of U.S. foreign trade (and a much larger share by weight, including half of the petroleum that fuels the economy) is carried by ship. These goods and products are funneled through ports, which provide an essential link between land and sea. Yet the economic importance of ports is increasingly transparent to the consumer, who does not always appreciate the need to ensure the efficiency and safety of marine transportation. Many other activities, ranging from beachfront development to ocean-dependent industries, also have economic ramifications. All of these vital activities depend on the nation's capability to manage marine activities, conserve and protect coastal and ocean resources, and, ultimately, understand the sea.

To meet the challenge of protecting and conserving the coastal environment, the United States will need to manage the oceans and coasts in new ways. The economic and other consequences of coastal storms and erosion need to be reduced, and sustainable economic growth needs to be achieved in marine recreation, marine resource development, global trade, and other activities. Progress in these areas increasingly lies beyond direct federal control. A rich experience base is emerging on partnership approaches that build on the roles and capabilities of the private sector; the knowledge base provided by scientific researchers; and the conservation and economic development tools of local, state, and federal governments. Solutions and innovations today often require the participation of all stakeholders, including every level of government. The process of learning to achieve progress through cooperation more routinely and more effectively will be a major undertaking, with important implications for governing institutions at every level.

Protecting and Restoring Fisheries and Other Living Marine Resources

The nation also faces a difficult challenge in developing a management regime that ensures sustainable fisheries and fishing communities while also protecting and nurturing marine biodiversity. Many U.S. fish stocks are still overutilized despite some successful restoration efforts. Although the commitment to conservation has been strengthened in recent legislation, a great deal of work remains to be done to ensure that this resolve is honored in practice. Fishery managers today need to muster the resources and political will to identify and protect essential fish habitat, address the problems of overfishing and excess fishing capacity, minimize bycatch, address the future of aquaculture and its potential impacts on the marine environment, and apply management techniques that work across jurisdictions and conserve ecosystem values such as the protection of biodiversity.

Advancing and Applying Ocean Science and Technology

Advances in ocean science and technology can be applied to gain important new knowledge that will help build a sustainable future. With new technologies and observing systems, new levels of accuracy are

becoming possible in the prediction of natural disasters and climate change. With new knowledge of plate tectonics, scientists have begun to understand the evolution of the Earth and the implications for predicting earthquakes and the distribution of mineral resources. The recent identification of exotic life forms around deep-sea hydrothermal vents suggests that the oceans still harbor many undiscovered treasures, perhaps including clues to the origins of life. The growing understanding of the complexities, fragility, and resilience of ocean ecosystems positions humanity to use the living resources of the sea without adversely affecting their sustainability. But to realize the full potential of ocean science, new investments in research, education, facilities, and international collaboration will be required.

Moving Forward

Americans care deeply about the oceans and coasts. The Year of the Ocean, 1998, provides a unique opportunity to reflect on, and chart, a new and more effective course for managing them. Essential roles in this endeavor are already being performed by industry, government agencies at all levels, research and educational institutions, and nongovern-mental organizations. Buoyed by strong public interest, all are poised to continue to work together toward America's new ocean future. The best chance for achieving their shared vision lies in the establishment of an independent com-mission composed of the nation's ocean leaders, who can recommend the most economically and environmentally beneficial directions for U.S. ocean policy and programs in the next century.

THE "OCEAN COMMUNITY" THEN & NOW

◈ **John R. Botzum** ◈

Editor, Nautilus Press Inc.

In its ninth year of existence, 1967, the newsletter, *Ocean Science News*, declared that the 1970s would be "the decade of the ocean" and that federal spending on ocean matters would rise "much at the same rate that the space budget did in the first half of the 1960s." The writer of those words was then-editor E.W.S. Hull, a World War II combat pilot with a classical education and a bent toward writing about things philosophical and oceanic. The author of this paper is the current editor of that publication, OSN (or popularly the "blue sheet"), which now is in its 40th year.

The publication itself had been founded during an earlier period of enthusiasm when the booming aerospace companies looked at the oceans and decided that ocean space could become as profitable for them as outer space. *Ocean Science News* spent much of its earliest years reporting on the new underwater submersibles which would explore the three-quarters of the planet Earth which was less well known than the backside of the moon.

The hope of profits never came to fruition for the metal benders in the '60s, but looking toward the '70s, *OSN* could continue to be optimistic about the future of the oceans, forecasting that again private industry would lead the way toward the development of ocean resources, particularly in "food from the sea (aquaculture not commercial fishing), drugs from the sea, and offshore petroleum." And ocean mining would surely follow the lead of offshore oil which had gotten started in the Gulf of Mexico some 15 years earlier.

But problems in the oceans were already evident, and their existence forecast a coming change in the optimism about the future of the oceans for the profitmakers. Remember, this was the time of mercury-laden tuna fish.

Those problems were regarded as minor, however. The publication continued to talk hopefully about the then aborning Stratton Commission which would recommend in 1968 "national goals in the ocean and the general means by which they are to be attained."

By the end of 1969, *OSN* Editor Hull announced he would take a partial leave of absence to attend the new University of Rhode Island Master of Marine Affairs program -the subject matter of which was marine geography, food & marine resource economics, oceanography, and basic ocean engineering. In the second semester the program would cover marine policy affairs, international sea law, geological oceanography, and estuarine oceanography.

As Editor Hull departed for Rhode Island, he could promise that the '70s, in contrast to the '60s, would be "bountiful and saltily wet" compared to the '60s which had produced little more than "volumes of dialogue", i.e. the "organizational phase" for the dynamic ocean community of the future.

That the ocean publication was not alone in its optimism is evidenced by the November, 1969 conference on "Oceanography - the Challenge to Industry & Investment," held by McGraw-Hill, the publisher of Business Week Magazine. The cost to attend the affair in New York City at the Overseas Press Club: $400. Presumably it would be well worth the cost to get a head start on ocean futures.

So, born with the aid of such unlikely mid-wives as Spiro Agnew, the Vice President of the U.S. under Richard Nixon, and Maurice Stans, his Secretary of Commerce, the new ocean era had begun with the Stratton Commission, the formation of the Natl. Oceanic & Atmospheric Administration, and the creation of the Natl. Advisory Committee on Oceans & Atmosphere. Needless to remind students of bureaucracy, there were also plenty of other

commissions, boards, and committees in on the aborning, including Natl. Academy of Science and Bureau of the Budget efforts.

Skipping ahead to today's effort almost 30 years later to repeat the Stratton Commission experience and all it entailed, including a commission and perhaps a council, we find an entirely different atmosphere within which a new ocean era (or really the first such era?) must operate.

For better or for worse (we have no intention of examining in detail the results of almost 30 years of ocean/coastal organization and reorganization), the ocean community today is mature, and consequently lacking in the verve and risk-taking we associate with youth -which surely was present 25-30 years ago in the ocean community. Remember some of the dreams of that time, underwater hotels, recreational submersibles, offshore nuclear power plants, an ocean cure for cancer, etc., etc.

Moreover, there were important events to come, which helped drive the nation's interest in the oceans in the '70s: the formative years of NOAA were just ahead, the U.N. Law of the Sea Conference was to begin in 1973; and there were the federal bureaucratic relationships among ocean-related agencies yet to be established. There were already important concerns about how NOAA and the Environmental Protection Agency would fit together in terms of their mutual interest in the coasts and oceans. In the bureaucracy there's nothing like a turf war to capture one's attention.

Because, as some observers realized at the beginning, and more understand now, the oceans are too big to put in one agency, or for which one man can be in charge. Land, sea, and air constitute the planet: should we have a czar for each? If the ocean is sick in one place, it is well in another. If it possesses resources easily accessible to humans in one place, they are almost impossible to gain in another. If the ocean is friendly at one time, it is the enemy of humans in another time. With the oceans, the meaning is in the detail.

At one of those early, and exciting, symposia held by the Univ. of Rhode Island, an economist, a stranger to the ocean community and all its complexities, stated that he didn't understand how a group of people (the ocean community) could be talking about the oceans this or that. It's everywhere, he explained; why, you might as well be talking about the air and form an air community, he suggested in exasperation.

Also, we the ocean community have caused many of our own problems. One example: today's overfishing goes back to the U.N. decision some 40-50 years ago to promote the use of bigger and more efficient fishing vessels in order to feed the world.

Today, it seems to me, the major issue for the ocean community is whether to preserve the oceans or to try to do good work in them for the benefit and profit of all humans.

Finally, we should recognize the dependence which the U.S. ocean community in particular has on the whims of Congress, on the needs of the politician to cater to his constituencies. We are reminded that despite all the enthusiasm for matters oceanic in 1970, the Congress saw fit to kill the Natl. Council on Marine Resources & Engineering, a perfectly respectable federal body, if somewhat dull, which a Democratic congresswoman from the state of Washington (of all places) felt was a waste of the taxpayer's money. Rep. Julia Butler Hansen looked down on the executive secretary of the council, who was appearing before her appropriations subcommittee, and declared the council's work "gobbledygook."

Even now as we celebrate "Stratton-revisited," the details of what actually will be accomplished or is intended to be accomplished is not at all clear.

The latest version of this effort has just passed the House fisheries subcommittee. While containing all the "gobbledygook" of the original Hollings bill in the Senate, it includes a reference to the need to settle the counter-productive themes of the Natl. Marine Fisheries Service, namely "the relationship between the fisheries development and fisheries conservation responsibilities of NMFS." This has been a favorite topic of subcommittee chairman Jim Saxton (R-NJ) and its presence in the bill behooves all the planners now at work on a new "Stratton" to get to the details and leave the generalities to those who don't really give a damn about the oceans; they are just in the business for self-gain, whether they are truly evil or just stupid.

OCEAN AND COASTAL TRENDS, 1969-1998

◈ **Daniel J. Basta *et al.*** ◈

National Ocean Service, NOAA

Introduction

This material outlines selected facts and trends on coastal and ocean topics. It is provided as background for the May 1, 1998 meeting of former Stratton Commission members. Where possible, information is compared between the periods of the late 60s and the late 90s. In some cases data are only shown for current or near-current conditions. These facts will be augmented, refined, and incorporated into a more comprehensive paper on coastal and ocean conditions in anticipation of a late summer/early fall meeting on ocean issues and policy.

Dredging

From the US Army Corps of Engineers Dredging and Navigation Branch

- Over the last 30 years, the amount of material dredged from U.S. ports and waterways by the US Army Corps of Engineers and its contractors has ranged from a high of 392 million cubic yards in 1970 to a low of 244 million cubic yards in 1992.

- While year to year volumes can fluctuate significantly, the long-term trend over the last 30 years has been a gradual decrease in the amount of material dredged by the US Army Corps of Engineers nationwide.

- Over the five year period from 1968 to 1972, "new work" dredging was about 425 million cubic yards. Over the most recent five year period from 1993 to 1997, the figure was about 177 million cubic yards.

- The share of all dredging that is maintenance dredging has fluctuated year to year but has slowly increased over the last 30 years It currently accounts for about 85 to 90% of all US Army Corps of Engineers dredging.

Waterborne Commerce

From the US Army Corps of Engineers Waterborne Commerce Statistics

- The tonnage of U.S. waterborne commerce grew from 1.4 million tons in 1968 to over 2.2 millions tons in 1995, a 60% increase.

- Foreign cargo tonnage now exceeds domestic tonnage.

- Import tonnage has exceeded export tonnage consistently over the 30 year period.

- Petroleum and its related products have led all major commodity groups in tonnage consistently over the period (averaging about 875 million tons per year between 1976 and 1995). Crude materials is the second leading group with less than half as much tonnage.

Saltwater Recreational Fishing

From the U.S. Fish and Wildlife Service's Survey of Hunting, Fishing and Wildlife Associated Recreation

- Between 1955 and 1970, the number of Americans, age 12 years old and older, that participated in saltwater recreational fishing more than doubled from 4.6 million to 9.5 million. The same was true for the number of days which increased from 58.6 million to 113.7 million.

- Between 1955 and 1970, the amount spent by Americans for saltwater recreational fishing increased about 71 percent when measured in 1990 constant dollars (from $2.4 billion to $4.1 billion).

- Between 1970 and 1985, the number of Americans, age 12 years old and older, that participated in saltwater recreational fishing increased 36 percent (from 9.5 million to 12.9 million), while the number of days they fished increased about 50 percent (from 113.7 million to 171.0 million).

- Between 1970 and 1985, the amount spent by Americans for saltwater recreational fishing more than doubled when measured in 1990 constant dollars (from $4.1 billion to $8.7 billion).

- In 1991, the U.S. Fish and Wildlife Service changed their survey methodology thereby ending the ability to compare the most recent estimates with past estimates. The new methodology significantly reduces the estimates for saltwater recreational fishing. However, comparable data are now available for 1991 and 1996.

- Between 1991 and 1996, the number of Americans, age 16 years old and older, that participated in saltwater recreational fishing increased 5.6 percent (from 8.9 million to 9.4 million), while the number of days fished increased 37 percent (from 75 million to 103 million).

- Between 1991 and 1996, the amount spent by Americans for saltwater recreational fishing increased 62 percent (from $5.0 billion to $8.1 billion).

From NOAA's National Marine Fisheries Service, Marine Recreational Fishing Statistics Survey,

Note: The NMFS-MRFSS estimates exclude Alaska, Hawaii and Texas but do include foreign visitors that fish. In addition, for some years, Pacific region estimates are not available and when they are, in some years the State of Washington was not included. Also, methodologies for estimating trips and catch changed in 1986. Party/headboat estimates are done separately for the Southeast from North Carolina through Texas. Thus it is difficult to patch together much in the way of long-term trends for catch and effort at the National level. Below are some conclusions based on rough compilations of information for the 1986 to 1996 period for the Atlantic and Gulf of Mexico regions and from 1985 to 1996 for the Pacific region.

Catch

- Between 1986 and 1996, there has been a significant decline in total catch (by weight of harvest and total numbers) for every region of the Nation.

- In the North Atlantic, catch by weight declined 74 percent and catch by number declined 53 percent.

- In the Mid-Atlantic, catch by weight declined 59 percent and catch by number declined 44 percent.

- In the S. Atlantic, catch by weight declined 18 percent and catch by number declined 14 percent.

- In the Gulf of Mexico, excluding Texas, catch by weight declined 33 percent and catch by number declined 18 percent.

- In the Pacific, 1986 estimates were not available so we calculated the changes between 1985 and 1996. Catch by weight declined 16 percent and catch by number declined 21 percent.

Effort

- Fishing effort, measured in number of trips, declined in every region except the South Atlantic.

- In the North Atlantic, effort declined 9.7 percent.

- In the Mid-Atlantic, effort declined 12.4 percent.

- In the S. Atlantic, effort increased 12.9 percent.

- In the Gulf of Mexico, effort declined 14.3 percent.

- In the Pacific, effort declined 21 percent.

- Between 1986 and 1996, there have been significant declines in both catch and effort from party/headboats from North Carolina through Texas. Effort declined 31 percent, catch by weight declined 40 percent, and catch by number of fish declined 52 percent.

For all other types of marine recreation there is little information available on a National basis. From the 1994-1995 National Survey on Recreation and the Environment, a few estimates were made for activities

in the marine environment. Estimates below are based on a 1995 U.S. population of approximately 200 million Americans age 16 years old or older.

- 45 million (22.5 %) visited an ocean, sound, or bay beach and about half of them (22 million) went swimming.
- 2.6 million (1.3 %) went surfing.
- 14.5 million (7.2%) went snorkeling/scuba diving.
- 9 million (4.5%) went boating in the Nation's oceans, sounds, and bays.

Beach Closings

From: Natural Resources Defense Council, Inc. "Testing the Waters -1997"

- During 1996, at U.S. ocean, bay, and Great Lakes beaches, there were at least 2,596 individual closings and advisories, 16 extended (6-12 weeks) closings and advisories, and 20 permanent (over 12 weeks) closings and advisories. Including the days of extended closings, the total comes to over 3,685 closings and advisories.
- Since 1988, there have been over 18,590 closings and advisories and 56 extended (6-12 weeks) closings and advisories.
- Approximately 83 percent of beach closings and advisories in 1996 were based on monitoring that detected bacteria levels exceeding beach water quality standards. An estimated 13 percent were in response to a known pollution event (without solely relying on monitoring results) and 4 percent were precautionary beach closures due to rain that carried pollution to swimming waters.
- Major pollution sources responsible for 1996 beach closings and advisories included:
- Polluted runoff from non-urban areas-over 486 closings/advisories
- Sewer spill and overflows-over 459 closings/advisories
- Urban stormwater runoff-over 407 closings/advisories. Combined sewer overflows-over 275 closing/advisories
- Almost every coastal and Great Lakes state reported having at least one beach where stormwater drains are on or near bathing beaches.

Health Risks

From: Natural Resources Defense Council, Inc. "Testing the Waters -1997"

- Toxic algal blooms such as *Pfiesteria piscicida*, which were discovered in North Carolina in 1991, have been found for the past six years to be associated with fish kills in North Carolina coastal and estuarine waters.

Eutrophication

From NOAA's National Estuarine Eutrophication Survey

NOAA has made a preliminary assessment of the conditions and trends of eutrophication symptoms in 137 of our nation's coastal waterbodies. Information was collected regarding the concentration, spatial coverage and timing (duration, months of occurrence, frequency) of extreme conditions of 16 water quality parameters that are associated with eutrophication. The results show that there are problems in many of our nation's estuaries and that most problems occur during the summer months, however, the expression of the problem is different among estuaries of the different regions. These results show:

- Extreme levels (>60 ug/l) of *Chlorophyll a*, a measure of algal biomass that can lead to depletion of oxygen in bottom waters, are observed in 22 of 137 of our nation's estuaries, usually in the spring and summer months.
- Hypoxia and anoxia, conditions of low dissolved oxygen that can kill fish and/or make estuaries unsuitable for fish habitation, are presently observed in a total of 72 estuaries, usually in the summer time.
- Blooms of toxic "red tide" organisms that are responsible for episodes of, for instance, paralytic and amnesic shellfish poisoning, occur in 61 of our nation's 137 estuaries, usually in the summer time.
- Between 1970 and 1995, *Chl a* concentrations trends increased in 24 of our nation's estuaries and

half of the increasing trends are observed in estuaries of the Gulf of Mexico.

• Between 1970 and 1995, toxic bloom occurrences increased in frequency in three estuaries and have decreased in two estuaries.

• Between 1970 and 1995, the spatial extent of hypoxic occurrences increased in 11 estuaries, while for 12 estuaries spatial coverage has decreased.

Agriculture

From the USGS Pesticide Use Data Base, USDA Situations and Outlook Report, and the U.S. Census of Agriculture (USDOC).

• In 1968, approximately 22 million pounds of pesticides were applied to agricultural lands in coastal watersheds of the U.S. Over 37 million pounds are estimated to have been applied in 1992.

• In 1968, approximately 9 million pounds of insecticides, primarily the persistent and highly accumulative organochlorines such as DDT and Toxaphene were applied to agricultural lands in coastal watersheds. In 1992, less than 7 million pounds of insecticides were applied, the majority of which were the less persistent and less accumulative organophos- phorus and carbamate compounds.

• In 1968, herbicides accounted for approximately 48 percent of total agricultural pesticide application. Beginning in the 1970's, the use of a group of newer herbicides including alachlor, atrazine and metolachlor dramatically increased the agricultural use of this class of pesticide. In 1992, herbicides accounted for over 76 percent of total application.

• The number of farms in the U.S. has decreased from 2.3 million in 1974 to 1.9 million in 1992 according to the Census of Agriculture published by DOC. At the same time, the average size of farms has increased from 315 acres in 1974 to 531 acres in 1992.

Point and Nonpoint Sources

From NOAA's National Coastal Pollutant Discharge Inventory

• In 1991 there were approximately 2,800 major and 17,000 minor point source facilities in the Nation's coastal watersheds.

• In 1972, the total annualized cost of water pollution control in the U.S. including point and nonpoint sources and drinking water was approximately $10 billion. In 1995, that amount had increased to $50 billion.

• In 1972, the total annual cost of environmental protection was estimated at $26 billion (0.87% of the GNP). In 1995, the total cost of environmental protection was estimated at $131 billion (2.53% of the GNP).

Fish Kills

From NOAA's Fish Kills in Coastal Waters , 1980-1989

• Between 1980 and 1989, the number of annual fish kill events record by coastal states increased from about 280 to 450, due in part to better monitoring of the events. The number of fish killed in these events, however, decreased from 550 million in 1980 to less than 50 million in 1989.

Shellfish

From the National Shellfish Register

• In 1971, there were a total of 14 million acres of classified shellfish growing waters, 10 million (73 percent) of which were approved for harvest, and 3.2 million (23 percent) closed due to human health risks. In 1995, there was a total of 21 million acres of classified shellfish growing waters, 15 million (69 percent) of which were approved for harvest, with 13 percent (2.8 million acres) closed to harvest due to human health concerns.

• In 1995, the major pollution sources contributing to shellfish harvest included urban runoff, wildlife, upstream sources, and individual wastewater treatment systems (e.g., septic systems).

Contamination of the Marine Environment

From NOAA's National Status and Trends Program, Mussel Watch Program

• Results from annual collections and chemical analyses of mussels and oysters from sites located

throughout the marine coast of the United States show decreasing trends, on a national scale, for chemicals such as chlorinated hydrocarbons (e.g., DDT and cPCBs), tributyl tin (antifoulant), and trace elements (cadmium and arsenic), whose use has been banned or greatly decreased. Concentrations of most other chemicals are neither increasing or decreasing.

Superfund Sites

From the US EPA Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)

- The US EPA has identified almost 8000 potential superfund sites in the 31 states (including Washington, DC) that border the nation's coasts.

Toxic Releases

From the US EPA Toxic Release Inventory

- Over 1.6 billion pounds of toxic material were released on-site at facilities in coastal states in 1995.

Oil Spills

From the US Coast Guard Pollution Incident Reporting System

- The number of oil spills reported to the US Coast Guard decreased by about 30% from the early 70s to the late 80s. However, from the late 80s to the early 90s, numbers of spills reported returned to prior levels (about 9000 per year nationwide).

- On average, about one-half of reported spills (and spill volume) occur seaward of the coastal baseline.

- The median size spill reported to the US Coast Guard decreased from about 15 gallons in 1974 to about two gallons in 1993.

- National spill volumes fluctuate widely depending on the occurrence or nonoccurrence of very large catastrophic events (like the EXXON VALDEZ). There has, however, been a trend towards lower spill volumes over the period from the early 70s to the early 90s.

Oil Spill Response

From the US Coast Guard "US Oil Spill Response Equipment at a Glance" report produced by the National Strike Force Coordination Center

- There are almost six million feet of containment, protective, and fire oil spill response boom stored around the country.

- There are almost five million barrels of storage available in approximately 320 vessels moored around the country.

- The almost 1400 skimmers in the U.S. have a total effective daily recovery capacity of almost 2.8 million barrels.

Hazards

From the Insurance Institute for Property Loss Reduction report "Coastal Exposure and Community Protection, Hurricane Andrew's Legacy"

- The total value of insured coastal property exposures increased from $1.86 trillion in 1988 to $3.15 trillion in 1993, an increase of 69%.

- Property exposures in all Gulf of Mexico and Atlantic Coast states (except Louisiana) more than doubled in value from 1980-1993.

- From 1980-1993, the value of insured residential exposures increased by 166%; commercial exposures went up 193%.

Population Summary

From the U.S. Bureau of the Census & National Planning Association, Inc.

- The population in coastal counties has increased from 110 million in 1970 to 138 million people in 1994. This is an increase or 28 million or 26%.

- The states with highest rate of population increase between 1970 and 1994 include: Alaska (117%), Florida (Gulf - 108%), Florida (Atlantic -105%), Texas (70%), New Hampshire (62%), and Washington (61%).

- Coastal areas are the most developed in the nation. This narrow fringe-comprising 17% of the

contiguous U.S. land area-is home to more than 53% of the nation's population. Further, this coastal population is increasing by 3,600 people per day, giving a projected total increase of 27 million people between now and 2015.

• Coastal areas are crowded and becoming more so every day. More than 139 million people-about 53% of the national total-reside along the narrow coastal fringes. This population is expected to increase by an average of 3,600 people per day, reaching 165 million by the year 2015. This rate of growth is faster than that for the nation as a whole.

• Coastal areas are becoming more crowded every year in the United States. In 1970, an average of 218 people were living on each square mile of coastal land (excluding that in Alaska). This population density increased to 273 persons per square mile by 1994, and is expected to reach 327 by 2015. Population densities are highest along the East Coast, especially in the Northeast.

• The population on the coast outnumbers the population of the nation's vast noncoastal interior by over 16 million people. The noncoastal population, numbering about 122 million, is distributed across the majority of the national land area.

• The coast includes the nation's most populous cities. In fact, 14 of the 20 largest cities are located in the coastal zone. The population in seven of these cities exceeds one million people.

• Coastal counties lead in many demographic indicators. During the last decade, 17 of the 20 fastest growing counties were located along the coast. In addition, the coast accounts for 19 of the 20 most densely populated counties in the country. Coastal counties are also undergoing more development than noncoastal areas, as they include 16 of the 20 counties with the largest number of new housing units under construction. With 18 of the 20 leading counties in per capita income located along the coast, these counties are also among the nation's wealthiest (Bureau of the Census, 1994a).

• Many areas along the coast have grown rapidly from a small population base in the past few decades. Rapid population growth has occurred since 1970 in vacation and retirement communities in Florida, especially along its western coast. Rapid rates of growth have also occurred in "exurban" counties such as Prince William (VA), Stafford (VA) and Calvert (MD), located along the Washington, DC metropolitan area's outer fringe. Dare (NC), Dorchester and Berkeley (SC) and Virginia Beach (VA) Counties typify southeastern counties where economic development and relocating retirees are fueling rapid population growth.

Population Trends

From the U.S. Bureau of the Census

• Coastal population growth includes both a movement toward the shore and the expansion of a large population base. Coastal population grew rapidly in the 1960s and 1980s. In the 1960s, coastal population soared by 16%, from 95 million people to over 110 million; in the 1980s, the population grew another 11% (14 million). Population increases during the 1990s and between 2000 and 2010 are projected to increase by about 9% (12 to 13 million people) in each decade.

• The coastal portion of the U.S. population has been, and will continue to be, relatively stable. It has averaged between 53% and 54% of the national population total since 1960. This proportion is expected to remain the same by 2015. Currently, 53.2% of the U.S. population resides in coastal counties.

Urban Population

From the U.S. Bureau of the Census

• About 84% of the U.S. coastal county population resided in urban areas in 1990.

• The coastal county urban population has increased from 89 million in 1970 to 112 million in 1990. The urban population was only 58 million in 1950. Consequently, the population residing in urban areas almost doubled between 1950 and 1990.

• States that have the highest percentage of their coastal population residing in urban areas include: Illinois (99%), California (95%), New Jersey (90%), Hawaii (89%), and New York (88%).

• States that have the lowest percentage of their coastal population residing in urban areas include:

Maine (45%), North Carolina (49%), South Carolina (54%), New Hampshire (54%), Georgia (56%), and Mississippi (58%).

- The largest urban populations in 1990 were located in: California (26.4 million), New York (16.2 million), Florida (12.7 million), Michigan (8.3 million), and New Jersey (7.7 million).

- The states with low urban populations in 1990 include: Minnesota (242,000), Alaska (449,000), Mississippi (509,000), Alabama (642,000), and Delaware (669,000).

Urban Land Area

From the U.S. Bureau of the Census

- Coastal counties have 41,175 square miles of urban land. This represents 8% of the U.S. coastal county land area (excluding Alaska).

- 84% of the coastal county population lives on 8% of the coastal county land area.

- The states with the greatest percentage of coastal land classified as urban include: Illinois (80%-dominated by Cook County), New Jersey (34%), Massachusetts (31%), Rhode Island (29%), and Connecticut (26%).

- States with the most coastal land classified as urban include: California (6791 square miles), Florida (5,018 square miles), New York (2,964 square miles), and New Jersey (2,406 square miles).

- Excluding Alaska, states with the least coastal urban land include: Minnesota (180 square miles), Delaware (209 square miles), Rhode Island (298 square miles), and Mississippi (308 square miles).

- The states with lowest percentage of coastal land classified as urban (excluding Alaska) include: Minnesota (2%), Oregon (2%), North Carolina (3%), Georgia (3%), and Maine (3%).

- Urban land in coastal counties increased by almost 33 percent (more than 10,000 square miles) between 1970 and 1990.

- States that had the largest increase in urban land area between 1970 and 1990 include: California (3,036 square miles), Florida (2,945 square miles), New York (1,971 square miles), Texas (1,421 square miles), New Jersey (1,341 square miles), and Michigan (1,021 square miles).

Land in Farms

From the U.S. Bureau of the Census

- In 1992, 27% of the coastal county land area was in farms. This was a decrease from 31% in 1982. (Both statements exclude Alaska.)

- Coastal farmland decreased from 158,000 square miles in 1982 to 138,000 square miles in 1992.

- States that had the largest decrease in farmland include: Florida (-3,356 square miles), California (-3,170 square miles), Texas (-1,973 square miles), New York (-1,507 square miles), Michigan (-1,179 square miles), and South Carolina (-1,037 square miles).

- States with the most coastal farmland include: Texas (27,511 m2), California (20,603 square miles), Florida (15,49 square miles), and Michigan (13,444 square miles).

Seasonal Housing

From the U.S. Bureau of the Census

- About 1.7 million seasonal homes-approximately 2,500 homes per county-are situated along the coast.

- The number of seasonal homes in coastal counties increased from about 746,000 units in 1970 to 1,689,000 units in 1990. This represents an increase of 943,000 vacation homes in 20 years.

- The heaviest concentration of seasonal housing lies along the Northeast Coast, particularly on the barrier islands. In 1997, about 484,000 seasonal homes (e.g., single-family homes, cottages, condominiums) are located along the northeastern seaboard. More than one-fifth of these seasonal dwellings are concentrated along the New Jersey shore. Massachusetts (18%), New York (17%) and Maine (16%) also account for large shares of second homes along the Northeast Coast.

Housing

From the U.S. Bureau of the Census

- Between 1970 and 1994, more than 18.9 million homes were constructed along the nation's coast. Almost 60% of this total (11.3 million homes) were single family dwellings. The remaining 40% (7.6 million homes) were townhomes, condominiums, apartments, duplexes, etc.-multi-unit dwellings.

- The most dramatic growth since 1970 has occurred in Florida and California, where an estimated 7.6 million housing units were authorized for construction. Nearly 40% of all new housing construction along the U.S. coast occurs in these two states.

- As coastal areas become more crowded, sprawling suburban and exurban patterns often characterize development. In addition to the 5,800 housing units in multi-unit buildings that are built every week, about 8,700 new single-family homes are constructed along the coast. Single-family housing developments frequently include large homes on large lots. For example, almost one-third of all new home construction is for houses with more than 2,400 sq. ft of floor area (Bureau of the Census, 1994b). Further, the median lot size in the United States is about 17,000 sq. ft.

Manufacturing

(Note: data for all counties in coastal states-not just coastal counties)

From the U.S. Bureau of the Census

- About 85% of all manufacturing establishments and employees are located in coastal states. California leads in the number of manufacturing establishments and workers.

- California leads all coastal states in the value of manufacturing production, accounting for $132 billion in 1987-about 11 percent of the national total. New York ($80 billion), Ohio ($72 billion), Texas ($64 billion), and Illinois ($63 billion) followed.

Employment

(Note: data for all counties in coastal states-not just coastal counties)

From the U.S. Bureau of the Census

- Coastal states account for about 81 percent of all federal, state, and local employees in the United States. California employs the greatest number of public employees at all levels. It accounts for 13.8 million federal, state, and local employees. About 84% of the workers are employed at the state and local level.

Income

(Note: data for all counties in coastal states-not just coastal counties)

From the U.S. Bureau of the Census

- The median household income in coastal states increased from about $9,700 1969 to $35,000 in 1995. Household income in coastal states is slightly higher than in the interior US.

- The largest rate of increase in household income between 1969 and 1995 occurred in the South. The median household income increased by more than 300% in Mississippi, Virginia, Georgia, and North Carolina.

Water Use

(Note: data for all counties in coastal states-not just coastal counties)

From the U.S. Geological Survey

- Water withdrawals in coastal states have increased only slightly from a total of 276 billion gallons per day in 1985 to about 277 billion gallons per day in 1995.

- Withdrawals in coastal states account for a little more than two-thirds of total U.S. withdrawals

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Appendix 1

The Marine Resources and Engineering Development Act of 1966

Appendix 1

The Marine Resources and Engineering Development Act of 1966

Public Law 89–454

89th Congress, S. 944

June 17, 1966

An Act

To provide for a comprehensive, long-range, and coordinated national program in marine science, to establish a National Council on Marine Resources and Engineering Development, and a Commission on Marine Science, Engineering and Resources, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Marine Resources and Engineering Development Act of 1966".

Marine Resources and Engineering Development Act of 1966.

DECLARATION OF POLICY AND OBJECTIVES

SEC. 2. (a) It is hereby declared to be the policy of the United States to develop, encourage, and maintain a coordinated, comprehensive, and long-range national program in marine science for the benefit of mankind to assist in protection of health and property, enhancement of commerce, transportation, and national security, rehabilitation of our commercial fisheries, and increased utilization of these and other resources.

80 STAT. 203.

(b) The marine science activities of the United States should be conducted so as to contribute to the following objectives:

80 STAT. 204.

(1) The accelerated development of the resources of the marine environment.

(2) The expansion of human knowledge of the marine environment.

(3) The encouragement of private investment enterprise in exploration, technological development, marine commerce, and economic utilization of the resources of the marine environment.

(4) The preservation of the role of the United States as a leader in marine science and resource development.

(5) The advancement of educational and training in marine science.

(6) The development and improvement of the capabilities, performance, use, and efficiency of vehicles, equipment, and instruments for use in exploration, research, surveys, the recovery of resources, and the transmission of energy in the marine environment.

(7) The effective utilization of the scientific and engineering resources of the Nation, with close cooperation among all interested agencies, public and private, in order to avoid unnecessary duplication of effort, facilities, and equipment, or waste.

(8) The cooperation by the United States with other nations and groups of nations and international organizations in marine science activities when such cooperation is in the national interest.

THE NATIONAL COUNCIL ON MARINE RESOURCES AND ENGINEERING DEVELOPMENT

SEC. 3. (a) There is hereby established, in the Executive Office of the President, the National Council on Marine Resources and Engineering Development (hereinafter called the "Council") which shall be composed of—

(1) The Vice President, who shall be Chairman of the Council.
(2) The Secretary of State.
(3) The Secretary of the Navy.
(4) The Secretary of the Interior.
(5) The Secretary of Commerce.
(6) The Chairman of the Atomic Energy Commission.
(7) The Director of the National Science Foundation.
(8) The Secretary of Health, Education, and Welfare.
(9) The Secretary of the Treasury.

(b) The President may name to the Council such other officers and officials as he deems advisable.

(c) The President shall from time to time designate one of the members of the Council to preside over meetings of the Council during the absence, disability, or unavailability of the Chairman.

(d) Each member of the Council, except those designated pursuant to subsection (b), may designate any officer of his department or agency appointed with the advice and consent of the Senate to serve on the Council as his alternate in his unavoidable absence.

(e) The Council may employ a staff to be headed by a civilian executive secretary who shall be appointed by the President and shall receive compensation at a rate established by the President at not to exceed that of level II of the Federal Executive Salary Schedule. The executive secretary, subject to the direction of the Council, is authorized to appoint and fix the compensation of such personnel, including not more than seven persons who may be appointed without regard to civil service laws or the Classification Act of 1949 and compensated at not to exceed the highest rate of grade 18 of the General Schedule of the Classification Act of 1949, as amended, as may be necessary to perform such duties as may be prescribed by the President.

78 Stat. 416.
5 USC 2211.
80 STAT. 204.
80 STAT. 205.
63 Stat. 954.
5 USC 1071 note.
79 Stat. 1111.
5 USC 1113.

(f) The provisions of this Act with respect to the Council shall expire one hundred and twenty days after the submission of the final report of the Commission pursuant to section 5(h).

RESPONSIBILITIES

SEC. 4. (a) In conformity with the provisions of section 2 of this Act, it shall be the duty of the President with the advice and assistance of the Council to—

(1) survey all significant marine science activities, including the policies, plans, programs, and accomplishments of all depart-

ments and agencies of the United States engaged in such activities;

(2) develop a comprehensive program of marine science activities, including, but not limited to, exploration, description and prediction of the marine environment, exploitation and conservation of the resources of the marine environment, marine engineering, studies of air-sea interaction, transmission of energy, and communications, to be conducted by departments and agencies of the United States, independently or in cooperation with such non-Federal organizations as States, institutions and industry;

(3) designate and fix responsibility for the conduct of the foregoing marine science activities by departments and agencies of the United States;

(4) insure cooperation and resolve differences arising among departments and agencies of the United States with respect to marine science activities under this Act, including differences as to whether a particular project is a marine science activity;

(5) undertake a comprehensive study, by contract or otherwise, of the legal problems arising out of the management, use, development, recovery, and control of the resources of the marine environment;

(6) establish long-range studies of the potential benefits to the United States economy, security, health, and welfare to be gained from marine resources, engineering, and science, and the costs involved in obtaining such benefits; and

(7) review annually all marine science activities conducted by departments and agencies of the United States in light of the policies, plans, programs, and priorities developed pursuant to this Act.

(b) In the planning and conduct of a coordinated Federal program the President and the Council shall utilize such staff, interagency, and non-Government advisory arrangements as they may find necessary and appropriate and shall consult with departments and agencies concerned with marine science activities and solicit the views of non-Federal organizations and individuals with capabilities in marine sciences.

COMMISSION ON MARINE SCIENCE, ENGINEERING, AND RESOURCES

SEC. 5. (a) The President shall establish a Commission on Marine Science, Engineering, and Resources (in this Act referred to as the "Commission"). The Commission shall be composed of fifteen members appointed by the President, including individuals drawn from Federal and State governments, industry, universities, laboratories and other institutions engaged in marine scientific or technological pursuits, but not more than five members shall be from the Federal Government. In addition the Commission shall have four advisory members appointed by the President from among the Members of the Senate and the House of Representatives. Such advisory members shall not participate, except in an advisory capacity, in the

80 STAT. 205.
80 STAT. 206.

formulation of the findings and recommendations of the Commission. The President shall select a Chairman and Vice Chairman from among such fifteen members. The Vice Chairman shall act as Chairman in the latter's absence.

(b) The Commission shall make a comprehensive investigation and study of all aspects of marine science in order to recommend an overall plan for an adequate national oceanographic program that will meet the present and future national needs. The Commission shall undertake a review of existing and planned marine science activities of the United States in order to assess their adequacy in meeting the objectives set forth under section 2(b), including but not limited to the following:

(1) Review the known and contemplated needs for natural resources from the marine environment to maintain our expanding national economy.

(2) Review the surveys, applied research programs, and ocean engineering projects required to obtain the needed resources from the marine environment.

(3) Review the existing national research programs to insure realistic and adequate support for basic oceanographic research that will enhance human welfare and scientific knowledge.

(4) Review the existing oceanographic and ocean engineering programs, including education and technical training, to determine which programs are required to advance our national oceanographic competence and stature and which are not adequately supported.

(5) Analyze the findings of the above reviews, including the economic factors involved, and recommend an adequate national marine science program that will meet the present and future national needs without unnecessary duplication of effort.

(6) Recommend a Governmental organizational plan with estimated cost.

(c) Members of the Commission appointed from outside the Government shall each receive $100 per diem when engaged in the actual performance of duties of the Commission and reimbursement of travel expenses, including per diem in lieu of subsistence, as authorized in section 5 of the Administrative Expenses Act of 1946, as amended (5 U.S.C. 73b–2), for persons employed intermittently. Members of the Commission appointed from within the Government shall serve without additional compensation to that received for their services to the Government but shall be reimbursed for travel expenses, including per diem in lieu of subsistence, as authorized in the Act of June 9, 1949, as amended (5 U.S.C. 835–842).

60 Stat. 808; 75 Stat. 339, 340.

63 Stat. 166.

(d) The Commission shall appoint and fix the compensation of such personnel as it deems advisable in accordance with the civil service laws and the Classification Act of 1949, as amended. In addition, the Commission may secure temporary and intermittent services to the same extent as is authorized for the departments by section 15 of the Administrative Expenses Act of 1946 (60 Stat. 810) but at rates not to exceed $100 per diem for individuals.

63 Stat. 954.

5 USC 1071 note.

5 USC 55a.

(e) The Chairman of the Commission shall be responsible for (1) the assignment of duties and responsibilities among such personnel and their continuing supervision, and (2) the use and expenditures of funds available to the Commission. In carrying out the provisions of this subsection, the Chairman shall be governed by the general policies of the Commission with respect to the work to be accomplished by it and the timing thereof. 80 STAT. 206. 80 STAT. 207.

(f) Financial and administrative services (including those related to budgeting, accounting, financial reporting, personnel, and procurement) may be provided the Commission by the General Services Administration, for which payment shall be made in advance, or by reimbursement from funds of the Commission in such amounts as may be agreed upon by the Chairman of the Commission and the Administrator of General Services: *Provided*, That the regulations of the General Services Administration for the collection of indebtedness of personnel resulting from erroneous payments (5 U.S.C. 46d) shall apply to the collection of erroneous payments made to or on behalf of a Commission employee, and regulations of said Administrator for the administrative control of funds (31 U.S.C. 665(g)) shall apply to appropriations of the Commission: *And provided further*, That the Commission shall not be required to prescribe such regulations. 68 Stat. 482. 64 Stat. 767.

(g) The Commission is authorized to secure directly from any executive department, agency, or independent instrumentality of the Government any information it deems necessary to carry out its functions under this Act; and each such department, agency, and instrumentality is authorized to cooperate with the Commission and, to the extent permitted by law, to furnish such information to the Commission, upon request made by the Chairman.

(h) The Commission shall submit to the President, via the Council, and to the Congress not later than eighteen months after the establishment of the Commission as provided in subsection (a) of this section, a final report of its findings and recommendations. The Commission shall cease to exist thirty days after it has submitted its final report. Report to President and Congress.

INTERNATIONAL COOPERATION

SEC. 6. The Council, under the foreign policy guidance of the President and as he may request, shall coordinate a program of international cooperation in work done pursuant to this Act, pursuant to agreements made by the President with the advice and consent of the Senate.

REPORTS

SEC. 7. (a) The President shall transmit to the Congress in January of each year a report, which shall include (1) a comprehensive description of the activities and the accomplishments of all agencies and departments of the United States in the field of marine science during the preceding fiscal year, and (2) an evaluation of such activities and accomplishments in terms of the objectives set forth pursuant to this Act.

(b) Reports made under this section shall contain such recommendations for legislation as the President may consider necessary or desirable for the attainment of the objectives of this Act, and shall contain an estimate of funding requirements of each agency and department of the United States for marine science activities during the succeeding fiscal year.

80 STAT. 207.

80 STAT. 208.

DEFINITIONS

SEC. 8. For the purposes of this Act the term "marine science" shall be deemed to apply to oceanographic and scientific endeavors and disciplines, and engineering and technology in and with relation to the marine environment; and the term "marine environment" shall be deemed to include (a) the oceans, (b) the Continental Shelf of the United States, (c) the Great Lakes, (d) seabed and subsoil of the submarine areas adjacent to the coasts of the United States to the depth of two hundred meters, or beyond that limit, to where the depths of the superjacent waters admit of the exploitation of the natural resources of such areas, (e) the seabed and subsoil of similar submarine areas adjacent to the coasts of islands which comprise United States territory, and (f) the resources thereof.

AUTHORIZATION

SEC. 9. There are hereby authorized to be appropriated such sums as may be necessary to carry out this Act, but sums appropriated for any one fiscal year shall not exceed $1,500,000.

Approved June 17, 1966.

LEGISLATIVE HISTORY:
HOUSE REPORTS: No. 1025 (Comm. on Merchant Marine & Fisheries) and No. 1548 (Comm. of Conference).
SENATE REPORT No. 528 (Comm. on Commerce).
CONGRESSIONAL RECORD:
Vol. 111 (1965): Aug. 5, considered and passed Senate.
Sept. 20, considered and passed House, amended.
Vol. 112 (1966): May 26, House agreed to conference report.
June 2, Senate agreed to conference report.

Appendix 2

Comparison of Congressional Oceans Act Bills

Appendix 2

Comparison of Congressoinal Ocean Act Bills

Comparison of Senate and House Versions of the Oceans Act of 1997

Purpose of Act- to develop and implement a coordinated, comprehensive, and long-range national policy with respect to ocean and coastal activities .

	Senate (S1213 as passed 11/13/97)	**House of Representatives** (HR2547 no House vote)	
	Commission on Ocean Policy		
Responsibilities	• Evaluate and make recommendations for a comprehensive national ocean policy	• Evaluate and make recommendations for a comprehensive national ocean policy • Provide report at least every five years on progress in meeting purposes of the Act	

Membership	• **16 Members Appointed by President:**
	  • 4 President's choice
	  • 4 from list of 8 submitted by Senate Majority leader in consultation with Chair of Commerce, Science and Transportation Committee
	  • 4 from list of 8 submitted by House Speaker in consultation with Chair of House Committee on Resources
	  • 2 from a list of 4 submitted by Senate Minority leader in consultation with the Ranking Member of Commerce, Science and Transportation Committee
	  • 2 from a list of 4 submitted by the House Minority leader in consultation with the Ranking Member of the House Committee on Resources
	• **4 Member Advisory Committee:**
	  • **1 appointed by Speaker of the House, House Minority Leader, Senate Majority Leader, and Senate Minority Leader**
		• 15 Members Appointed by the President in consultation with Congress
		• 4 Member Advisory Committee from Congress, appointed by Congressional Leadership - 1 appointed by Speaker of the House, House Minority Leader, Senate Majority Leader, and Senate Minority Leader
			• **16 Members Appointed by President:**
			  • 4 President's choice
			  • 4 from list of 8 submitted by Senate Majority leader in consultation with Chair of Commerce, Science and Transportation Committee
			  • 4 from list of 8 submitted by House Speaker in consultation with Chair of House Committee on Resources
			  • 2 from a list of 4 submitted by Senate Minority leader in consultation with the Ranking Member of Commerce, Science and Transportation Committee
			  • 2 from a list of 4 submitted by the House Minority leader in consultation with the Ranking Member of the House Committee on Resources
			• **4 Member Advisory Committee:**
			  • **1 appointed by Speaker of the House, House Minority Leader, Senate Majority Leader, and Senate Minority Leader**

Comparison of Senate vs. House Versions of the Oceans Act of 1997 (continued)

	Senate (S1213 as passed 11/13/97)	House of Representatives (HR2547 no House vote)	
	Commission on Ocean Policy		
Leadership	Chairman selected by the President after consultation with Majority and Minority Leaders of the Senate and the House of Representatives	Chairman elected by Commission Members	
Staff	Executive Director - appointed by Chairman Staff can be detailed from Federal agencies Consultants	Director - appointed by Chairman Agency staff Consultants	Director - appointed by Chairman Agency staff Consultants
Funding	Up to $6M authorized for appropriation for FY98/99 to be expended until Commission has ceased to exist	$6M authorized for appropriation for FY98/99 and additional funding for 10 FY's as needed	
Report	18 months after commission is established	18 months after forming commission	
Start-up	90 days after enactment; first meeting within 30 days of establishment	90 days after enactment	
Sunset	Commission disbands 30 days after report	No sunset date specified	

Comparison of Senate vs. House Versions of the Oceans Act of 1997 (continued)

	Senate (S1213 as passed 11/13/97)	House of Representatives (HR2547 no House vote)	House of Representatives (Saxton bill no House vote)
	National Ocean Council		
Responsibilities	• Coordinate development of an implementation plan for national ocean policy • Assist Commission in completing report to the President and Congress • Improve coordination among Federal agencies regarding ocean and coastal activities • Assist President in preparing first Biennial Report	**No Council is Proposed in House Legislation**	
Membership	Heads of 12 Federal Departments and Agencies involved in ocean and coastal issues and other Federal officials as appropriate		
Leadership	Chairman Appointed by the President from membership		
Staff	• Executive Secretary - appointed by Chairman of Council • Staff can be detailed from Federal agencies		
Funding	None authorized		
Start-up	Not specified		
Sunset	Council disbands one year after Commission has submitted its final report		

Comparison of Senate vs. House Versions of the Oceans Act of 1997 (continued)

	Senate (S1213 as passed 11/13/97)	House of Representatives (HR2547 no House vote)	House of Representatives (Saxton bill no House vote)
	The President		
Report	Beginning in January 1999, and biennially there after, submit a report to Congress summarizing agency activities, budgets and accomplishments of the previous two years related to ocean and coastal issues		
Budget Coordination	• Each year provide budget guidance to Federal agencies and departments involved in ocean and coastal activities • Each agency will identify its ocean and coastal activities in its annual appropriations request		

Appendix 3

Description of Dialogues on National Ocean Policy

1998

DIALOGUES ON NATIONAL OCEAN POLICY

A series of discussions and analyses aimed at enhancing ocean and coastal policy in the United States

Background

In the past few years, and especially during the 1998 International Year of the Ocean, there has been growing realization that concerted efforts must be made to reexamine national ocean policy in the United States, to assess how well we are managing our oceans and coasts, and to provide a vision for the governance of these resources of great value to the American people into the 21st century and beyond. Examples of renewed interest in the reexamination of national ocean policy include the Oceans Act of 1997 (pending in Congress, which would create a national ocean policy commission and a national ocean council), efforts by an inter-agency federal group to assess federal ocean policy in conjunction with the Year of the Ocean, discussions among stakeholder groups being organized by the Heinz Center on particular areas of ocean policy, NOAA's work on defining Coastal Stewardship, and major initiatives by ocean interests, such as Seaweb and the Center for Marine Conservation, in drawing attention to issues of resouce depletion and ocean conservation.

The Dialogues on National Ocean Policy

This collaborative effort among all major ocean interests-- governmental, non-governmental, industry, and academia-- is aimed at identifying major problems and opportunities in national ocean policy, with a view to developing policy options for improved management of the ocean and coastal resources of the United States to the limits of national jurisdiction, the U.S. Exclusive Economic Zone.

The effort, initially being organized by academic and governmental partners (the Center for the Study of Marine Policy, the Ocean Governance Study Group, and the National Ocean Service, NOAA), will invite the collaboration of all relevant groups-- in government (federal, state, and local levels), in the non-governmental sector, industry sector, and in academia, in the common search for improved governance of the nation's oceans and coasts.

Nature of the Dialogues

By "Dialogues," we mean a range of activities aimed at exploring, identifying, discussing, and fostering communication on: the current status of national ocean policy, trends that will affect national ocean policy in the future, and options for policy improvement. This will include:

- The conduct of discussions on aspects of national ocean policy (e.g., assessing past actions and progress made, identifying forces and trends that will influence national ocean policy, communicating the perspectives of different ocean interests on national ocean policy);

- Policy analyses and analytical studies on various aspects of national ocean policy;

(continues)

Organized by the Center for the Study of Marine Policy, the Ocean Governance Study Group, and the National Ocean Service, NOAA, in collaboration with other governmental and non-governmental partners

- Dissemination of information on ongoing developments in national ocean policy via a newsletter, white papers, videos, and a specially dedicated web site.

Stratton Roundtable
This roundtable, to be held in Washington, D.C. on May 1, 1998, will focus on the lessons learned in the Stratton Commission's review of national ocean policy which was conducted between 1966 and 1969 (the last time a comprehensive examination of ocean and coastal activities took place). Former members of the Commission and its staff will meet with a small group of academics, congressional staff, ocean interests, and other participants to review and assess the way in which the Commission conducted its work with a view toward providing recommendations for the (expected) new ocean policy commission. To foster informal discussion, this meeting will necessarily be small and involve only about 20 participants. The outputs of the meeting-- perspectives papers and a video with interviews with the former members and staff of the Stratton Commission, will be widely available.

The Present National Ocean Policy Context: Forces for Change
This dialogue will focus on understanding the implications for U.S. ocean policy of the very significant changes that have occurred in the last 30 years including such factors as the environmental movement, the elevation of energy concerns to national and international agendas, the growth in the management capacity of coastal states, the passage and implementation of a dozen federal coastal and ocean laws, the adoption of a wide range of global agreements on oceans and coasts. The meeting will also identify important developments in ocean and coastal policy, and will examine and analyze trends that are likely to influence national ocean policy in the future. Such trends might include those derived from technological and industry-driven innovations, changes in the international governance framework, demographic pressures on the coast, changes in ocean industries (e.g., fisheries depletion, growth in tourism worldwide), the actions of non-governmental organizations. Papers analyzing past changes and future trends will be invited.

Information Exchange on National Ocean Policy
A series of information products will be prepared to facilitate the exchange of information among various ocean groups, government, industry, and academia, e.g.:

- A periodic bulletin, *Ocean Governance Network News*, will include sections on developments in ocean policy in Congress, the Administration, state level, NGOs, industry, international, and will include an Opinion—exchange of views section;

- A bibliography on major works on national ocean policy;

- Issue papers on various aspects of national ocean policy;

- Results of roundtables, dialogues, and discussions.

March 1998

For further information, please contact Professors Biliana Cicin-Sain and Robert W. Knecht, Co-Directors, Center for the Study of Marine Policy, Graduate College of Marine Studies, University of Delaware, Newark, Delaware 19716; (302) 831-8086 (phone), fax (302) 831-3668, email: bcs@udel.edu

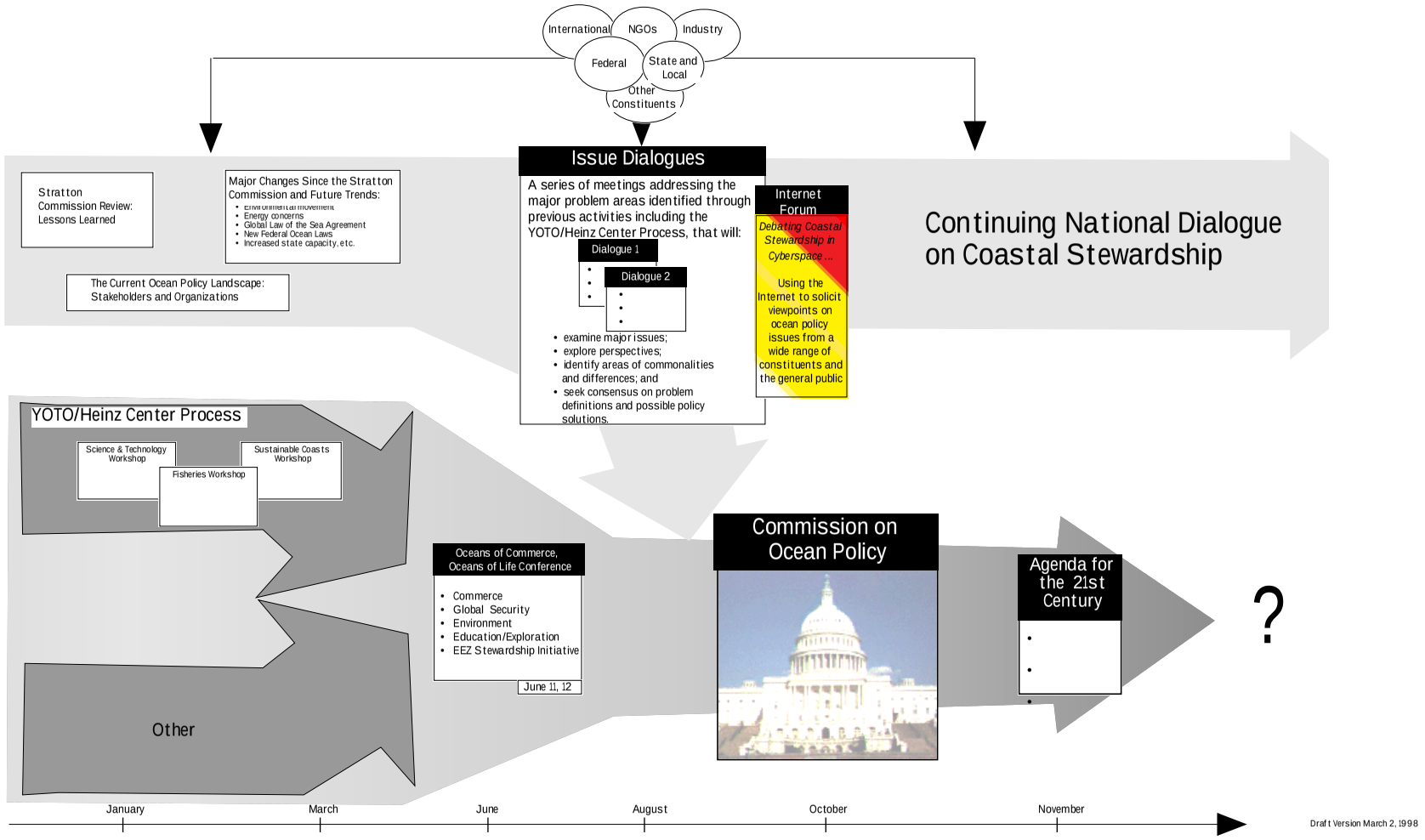
See also National Ocean Service, NOAA, "Creating a National Dialogue on Coastal Stewardship," Dr. Nancy Foster, Assistant Administrator for Ocean Services and Coastal Zone Management, National Ocean Service, NOAA, 1315 East West Highway, Silver Spring, Maryland 20910, (301) 713-3074

Appendix 4

Flow Chart on Dialogues on National Ocean Policy

Appendix 4

Flow Chart on Dialogues on National Ocean Policy



Appendix 5

Draft Announcement of Workshops on "The Present Context of National Ocean Policy and Future Trends" (Fall 1998)

Draft Announcement
Fall 1998 Workshops on

The Present Context of Ocean and Coastal Policy and Future Trends

Organized by:

the Center for the Study of Marine Policy,
the National Ocean Service, NOAA and the Ocean Governance Study Group,
in collaboration with other governmental and non-governmental partners

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Two workshops are planned for Fall 1998 to: 1) examine major changes that have taken place in U.S. ocean and coastal policy in the past thirty years and to 2) assess future trends which are likely to significantly influence U.S. policy. One workshop will be held in Washington, D.C. in mid-September during the Coast Week celebrations (and will involve national-level decisionmakers and interest groups), the other will be held on October 31 to November 1 at the University of California, Berkeley, and will involve members of the Ocean Governance Study Group and Pacific coast decisionmakers and interest groups.

The two workshops will focus on understanding the implications for U.S. ocean and coastal policy of the very significant changes that have occurred in the last 30 years including such factors as the environmental movement, the elevation of energy concerns to national and international agendas, the growth in the management capacity of coastal states, the passage and implementation of a dozen federal coastal and ocean laws, the adoption of a wide range of global agreements on oceans and coasts.

The workshops will also identify important developments in ocean and coastal policy, and will examine and analyze trends that are likely to influence national ocean and coastal policy in the future. Such trends might include those due to demographic pressures on the coast, those derived from technological and industry-driven innovations, changes in the international and domestic governance frameworks, changes in ocean industries (e.g., growth in tourism worldwide), changes arising from the actions of non-governmental organizations.

Short papers analyzing past changes and future trends are invited in the following categories:

1. PAST CHANGES: CHANGES IN FACTORS RELATED TO OR AFFECTING U.S. OCEAN POLICY IN THE PAST THIRTY YEARS

Socio-political changes

—rise in the environmental movement

—proliferation of new interest groups on oceans and coasts

—growth in demographic pressures on the coastal zone

—increases in ocean uses and conflicts

—socio-political changes in the general population especially regarding the role of women and minorities

Policy changes

—enactment and implementation of major environmental management laws

—enactment and implementation of a dozen major federal laws on oceans and coasts

—emergence of energy use and energy supply as a major national and global concern

—enactment and implementation of numerous state-level laws and policies regarding coastal and ocean space, resources, and uses

—establishment of the U.S. Exclusive Economic Zone in 1983 and subsequent failure to follow through with a plan for EEZ governance, for priority-setting, or for conflict resolution

—experimentation with various forms of interstate collaboration for regional ocean and coastal management

Changes in scientific and management capacity and in management approaches

—growth in U.S. marine science and marine policy capacity, including growth in education and research programs in the ocean sciences, policy, law, and management

—growth in the number of federal programs dealing with oceans and coasts and in the capacity of federal agencies to manage these resources

—growth in the capacity of coastal states and territories to plan for and manage their coastal zones

—changes in conceptual frameworks and management approaches to ocean and coastal resources, e.g.:

  introduction of novel management concepts such as optimum yield in fisheries management, optimum sustainable population in marine mammal management

  growth in the application of market-based approaches to resource management

  emergence of concept of ecosystem management and of watershed planning

—increased participation by a variety of stakeholders (private sector, environmental interests, academia, state and local governments) in decisions about ocean and coastal resources

—increased attention paid to the special rights and issues associated with indigenous peoples in resource management, particularly in the Pacific region

Continuing problems in ocean and coastal policy despite many efforts

—continued conflicts and problems among ocean and coastal interests and government agencies and the absence of appropriate institutional mechanisms for resolving conflicts and providing an overall ocean/coastal governance framework

—attendant increases in litigation and legal action on ocean and coastal issues

—continued problems of resource depletion, particularly in fisheries

—difficulties faced by major ocean industries (offshore oil and gas, fisheries, aquaculture), due, in part, to problems in policy frameworks

—relative successes in managing point sources of marine pollution, but growing inability to affect nonpoint sources

—lack of recognition of the economic importance of tourism and recreation, and the dependence of tourism on clean water, good coastal management practices, and renourished beaches

—lack of consideration of the potential for sea level rise and other climate-induced effects in the coastal zone

—absence of a competitive port system, able to handle and anticipate technological changes taking place in the shipping industry

—problems in the policy framework for the exploitation of hard mineral resources, such as sand resources

—absence of a national approach to the conservation of marine biodiversity and the wise application of marine biotechnology

Internationally-driven changes

—major changes in the international legal and policy framework for ocean governance (e.g., Law of the Sea Convention, Earth Summit, Agenda 21, Climate Change Convention, Biological Diversity Convention, Global Program of Action for the Control of Land-Based Sources of Marine Pollution, Agreement on Straddling and Highly Migratory Fish Stocks, etc.)

—increased focus on global environmental issues (such as biodiversity, climate change)

—adoption of the sustainable development paradigm at the global level

—adoption of the concept of integrated coastal and ocean management as a central organizing framework in all the major international agreements and prescriptions emanating from the Earth Summit

—increased attention on needs of developing nations; growth in North/South tensions

—reduction in East-West tensions and attendant changes in the role of the U.S. Navy

—growth in regional economic blocs, and emergence of important international trade versus environment conflicts

2. FUTURE TRENDS: TRENDS LIKELY TO AFFECT U.S. NATIONAL OCEAN POLICY INTO THE NEXT CENTURY

Population pressures and resource depletion

—continued demographic influx in coastal areas

—global decline in fisheries

—community impacts of fisheries depletion

—depletion of biodiversity and need for increased protection and management

—regulatory problems and environmental problems in establishing aquaculture as a major ocean use

—degradation of coastal waters due to nonpoint sources of pollution

—continued loss of key coastal and marine habitats

—enhanced methodologies for assessing ecosystem health and for restoring degraded habitats

Industry- and technology-driven

—changes in shipping technology (e.g., fast ships) and attendant restructuring of U.S. ports

—offshore oil industry— expansion of development in deeper waters; problems of platform dismantling; accommodating to state/community concerns

—worldwide growth in tourism as the world's largest industry, attendant rise in coastal tourism

—growth in marine biotechnology industry, raising problems of access to marine organisms in various ocean zones and equitable sharing of benefits

Internationally-driven

—adoption of integrated coastal and ocean management as the major organizing framework in many international agreements (Agenda 21, Climate Change Convention, Biodiversity Convention, plan to control land-based sources of marine pollution, international coral reef initiative, etc.)

—recognition of the effects of climate change, especially sea level rise and increased erosion in coastal areas and the possibility of increased storm intensity and frequency of occurrence.

—increased attention to land-based sources of marine pollution as a part of the 1995 global program of action.

Driven by problems in the U.S. ocean and coastal policy framework

—problems arising from the absence of a coherent national framework for harmonizing government (federal, state, local) actions, and private sector actions in ocean and coastal areas

For more information, please contact Professors Biliana Cicin-Sain and Robert W. Knecht, Center for the Study of Marine Policy, University of Delaware, Newark, Delaware 19716, Telephone (302) 831-8086, Fax (302) 831-3668. In Washington, D.C. Telephone (202) 986-1548, Fax (202) 986-1549.

Appendix 6

Information on the Ocean Governance Study Group

The Ocean Governance Study Group

The Ocean Governance Study Group (OGSG) was created in 1991 to re-examine the status of ocean governance in the United States and to develop management options for achieving responsible stewardship of our oceans and coasts. The Study Group is composed of 31 ocean policy experts from around the country; is led by an eight-person Steering Committee; and works in cooperation with ocean policy specialists in Congress, the Administration, state governments, regional organizations, national interest groups representing industry and environmental concerns, international advisors, and other interested individuals **(The Ocean Governance Network).**

The basic premise of the Study Group is that to achieve full benefits for the American public from its oceans and coasts and to protect the choices of future generations, we must develop a new vision of ocean governance — a vision which looks at our ocean as a whole and not solely at its discrete parts. As other nations around the world, the U.S. must move toward more integrated, multi-purpose, and area-based management of its ocean and coasts. The emphasis of the Group is on governance - the collective array of strategies, policies, and practices of national, state, and local governments, non-governmental organizations, and the private sector to guide the use of ocean and coastal resources and space under national jurisdiction, to the edge of the 200-mile Exclusive Economic Zone.

In loose alliance, the scientists in the Study Group are involved in:

preparing analytical studies of current and past governance practice, implications of forthcoming trends, and development of policy options;

monitoring developments in national and international ocean policy and disseminating such information to the Ocean Governance Network;

convening workshops, conferences, and working groups to discuss issues in U.S. ocean policy;

publishing analytical studies and results of workshops, conferences, and working group discussions.

The objective of the Group is to produce practical policy recommendations in the near- and medium-term guided by a long-range vision. The initial work program of the Study Group is outlined in its 1992 report Ocean Governance: A New Vision.

The Ocean Governance Study Group invites policy makers, state and federal ocean and coastal managers, other scientists, and business and environmental groups to join in the collective search for improved governance of the nation's oceans and coasts.

The Ocean Governance Study Group is led by an eight-person Steering committee:

Biliana-Cicin-Sain and Robert W. Knecht, University of Delaware;

David D. Caron and Harry N. Scheiber, University of California at Berkeley;

Jon M. Van Dyke and M. Casey Jarman, University of Hawaii;

Jack H. Archer and Richard Delaney, University of Massachusetts, Boston.

The Center for the Study of Marine Policy at the University of Delaware has served as the Secretariat of The Ocean Governance Study Group since its inception in 1991, with the financial support of the Delaware Sea Grant College Program. The work of The Ocean Governance Study Group has been primarily supported by the institutions represented on the Steering Committee, the following Sea Grant Programs: California, Delaware, Florida, Hawaii, Louisiana, Maine, Massachusetts, Mississippi-Alabama, North Carolina, Oregon, Rhode Island, Texas, and Washington, and NOAA's Office of Ocean and Coastal Resource Management.

For Further Information

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The Ocean Governance Study Group

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The Ocean Governance Network

The OGSG works with ocean policy specialists in Congress, the Administration, state governments, regional organizations, national interest groups representing industry and environmental concerns, international advisors, and other interested individuals in identifying policy options on ways of improving governance of coastal and ocean resources in the United States.

The Ocean Governance Study Group

PUBLICATIONS

IMPLICATIONS OF ENTRY INTO FORCE OF THE LAW OF THE SEA CONVENTION FOR U.S. OCEAN GOVERNANCE

Edited by Biliana Cicin-Sain and Katherine A. Leccese (1995). This report presents summaries of the analyses presented at the January 1995 Conference of the Ocean Governance Study Group held at the University of Hawaii, Honolulu, addressing issues related to implications of entry into force of the Law of the Sea, including the question of conforming federal laws with the provisions of the Convention and how the actions of coastal states in their offshore zones may or may not be consistent with the Convention.

The volume includes discussion of the following topics: The Law of the Sea Treaty and the United States: Reflections Given the Small Likelihood of Ratification in 1995; The Case for Universal Acceptance and Implementation of the 1982 Convention on the Law of the Sea; The State Department Perspective on the Entry into Force of the Law of the Sea Convention for Fisheries: Consolidating Gains and Enabling Future Progress; The Law of the Sea Convention as a Comprehensive, Framework Convention for Sustainable Ocean Use; Protection of the Ocean Environment: Competing Views of the Implementation Process; Implications of Ratification on U.S. Fisheries Management; The Draft Convention on Straddling and Highly Migratory Fish Stocks-Concepts and Main Issues; At the Crossroads of UNCLOS and UNCED: The United Nations Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks; Improving International Management of Straddling and Highly Migratory Fish Stock; The Precautionary Principle and the Law of the Sea Convention; The Division of America's Offshore Zones as Between Nation and State; U.S. Claims to Maritime Jurisdictions: Too Much or Not Enough; Present Status of Ocean Minerals Development, Seabed Mining Provisions of the Law of the Sea; The Changing Political Context of Deep Seabed Mining; Hawaii's Claim to Archipelagic Waters, Ocean Governance Issues in the Territory of Guam: Conflict and Resolution; Sustainable Use of Marine and Coastal Resources Under UNCLOS and UNCED; Initiating Integrated Coastal Area Management for Bulgaria's Black Sea Coast; Summary of the Discussion by the Group on Trade and the Environment; Marine Fisheries Management and Law of the Sea: Summary of Discussion of Current Issues.

MOVING AHEAD ON OCEAN GOVERNANCE

Edited by Biliana Cicin-Sain and Lori L. Denno (1994) (two volumes). This report presents summaries of the analyses presented at the April 1994 Conference of the Ocean Governance Study Group held at the University of Delaware, Lewes, addressing issues related to sustainable development of the U.S. Ocean.

The volume includes discussion of the following topics: A Framework for a National Ocean Strategy; The Clinton Administration's View of Sustainable Development; NOAA's Office of Sustainable Development and Intergovernmental Affairs; Formulation of a National Ocean Strategy for the United States A Proposal for an Initiative by the National Research Council; A Consensual Approach to a National Ocean Strategy, How Far Can It Go?; The Precautionary Approach in International Agreements on the Marine Environment; Implications for U.S. Coastal States of Potential U.S. Accession to the 1982 U.N. Convention on the Law of the Sea; The New Economic World Order Pacific Perspectives; Ocean Management Policies and the Shift of Power to Subnational Units Examples from the United States; Privatization in Fisheries Lessons from Experiences in the U.S. and Canada; Non-point Source Pollution Top Down or Bottom Up Controls; Integration and Implementation An Assessment of Article 6217 of the 1990 Coastal Zone Act Re-authorization Amendments.

ISSUES IN OCEAN GOVERNANCE

Edited by Harry Scheiber and David Caron (1993). This report presents summaries of the analyses presented at the January 1993 Conference of the Ocean Governance Study Group held at the University of California, Berkeley, addressing issues related to the changing international context of ocean governance, governing ocean space, intergovernmental relations in ocean governance, and case studies of multiple use conflicts.

The volume includes discussion of the following topics: A Framework for Multiple-Use Ocean Governance for the United States; Implications of the Earth Summit for Ocean Governance; International Influences on the Goals and

Principles of National Ocean Governance; Initiatives Affecting Ocean Governance in the Arctic; Ocean Governance and the North Sea; The Roles of Science in U.S. Marine Policy; Incidental Take and Commercial Fisheries Legislative and Regulatory Interaction; Federalism and Offshore Oil; Marine Use Conflicts: The Case of Aquaculture; The Florida Keys National Marine Sanctuary; Reflections on the Political Implications of Current Ocean Governance Discussions in the U.S.: A Call To Action.

OCEAN GOVERNANCE: A NEW VISION

Edited by Biliana Cicin-Sain (1992). This initial report of the Ocean Governance Study Group makes a case for the need for a fundamental re-examination of U.S. ocean policy, describes a number of problems and opportunities facing U.S. ocean policy, sets forth a broad research agenda for ocean governance, and describes the scope, purposes and ongoing work of the Ocean Governance Study Group.

The volume includes discussion of the following topics: Research Agenda on Ocean Governance; Implications of the Earth Summit for Ocean and Coastal Governance; Subjective Principles for a Constitution for the U.S. Oceans; Learning from Other Nations; Caveats on "Integration" in Ocean and Coastal Management; Free Trade and Ocean Governance.

SPECIAL ISSUES IN INTERNATIONAL JOURNALS

The work conducted by the Group is also published in the major journals in the field in cooperation with the journal Editors.

OCEAN DEVELOPMENT AND INTERNATIONAL LAW (1993)

Implications of the Earth Summit for Ocean and Coastal Governance, *Biliana Cicin-Sain and Robert W. Knecht* (U. of Delaware)

Ocean Policy, Multi-Use Management and the Cumulative Impact of Piecemeal Change. The Case of the United States Outer Continental Shelf, *Lawrence Juda* (U. of Rhode Island)

Towards an Arctic Environmental Regime, *David Caron* (U. of California at Berkeley)

U.S. Coastal States and the International Law of the Sea A Commentary, *Jon L. Jacobson* (U. of Oregon)

OCEAN AND COASTAL MANAGEMENT (1994) Special Issue Edited By Kem Lowry

Federalism and Offshore Oil, *Charles Lester* (U. of Colorado)

Controversies in Ocean Governance: Dredging in Oakland Harbor, *Robert Kagan* (U. of California at Berkeley)

Implications of the Trade-Environment Controversy, *Richard McLaughlin* (U. of Mississippi)

International Aspects of Coastal Zone Management, *Ronald Barston* (London School of Economics)

COASTAL MANAGEMENT (1994)

Congress, Reform, and Oceans Policy, *Joan Bondareff* (U.S. Congress)

The Monterey Bay National Marine Sanctuary: A Model for Ocean Management, James-Rote (NOAA)

Governance and Adaptive Management for Estuarine Ecosystems: The Case of Chesapeake Bay," *Tim Hennessey* (U. of Rhode Island)

Essay: Emerging International Goals and principles and Their Influence on National Ocean Governance, *Robert W. Knecht* (U. of Delaware)

The Role of Science in U.S. Marine Policy: A Review Essay, *Richard Hildreth* (U. of Oregon)

Essay: A National Ocean Governance Strategy in the United States is Needed Now, *Biliana Cicin-Sain* (U. of Delaware)

OCEAN AND COASTAL MANAGEMENT (1996, 1997)

The Rio Principles and Our Responsibilites of Ocean Stewardship, *Jon Van Dyke* (U. of Hawaii)

Ocean Management in the U.S.: The Growing Power of Subnational Units, *Marc Hershman* (U. of Washington)

Ocean Management by Coastal States: The Oregon Case," *Robert Bailey* (State of Oregon)

Reforming the Offshore Oil and Gas Program," *Charles Lester* (U. of Colorado)

Appendix 7

Biographical Information on Roundtable Participants

BIOGRAPHICAL INFORMATION ON PARTICIPANTS OF THE STRATTON ROUNDTABLE

Lewis M. Alexander is Emeritus Professor of Geography and Marine Affairs at the University of Rhode Island. He founded the Geography Department at Rhode Island in 1960; this was later transformed into the Department of Marine Affairs. He also established the Law of the Sea Institute, and then served as Director of the Center for Ocean Management Studies. In 1968-69, Professor Alexander was Deputy Director of the Stratton Commission, and he later served for three years as the Geographer of the State Department. He is the author of a number of books, monographs and articles.

Jack H. Archer is a professor in the Environmental, Coastal and Ocean Sciences Department at the University of Massachusetts, Boston. He is also an adjunct professor at the Vermont Law School. He holds a JD from the University of California, Hastings School of Law and a Ll.M from the University of Washington. Previously, he served on the staff of the Merchant Marine and Fisheries Committee in the U.S. House of Representatives and the NOAA Office of the General Counsel. He is the author of many publications, including a major book on the public trust doctrine.

Stephanie Bailenson is a coral reef ecologist currently serving as a Knauss Sea Grant Fellow on the U.S. Senate Subcommittee on Oceans and Fisheries. Prior to receiving the fellowship, Ms. Bailenson spent 3-l/2 years looking at the impacts of sewage outfalls in coral reef and coastal areas.

Dr. James Baker is Administrator of the National Oceanic and Atmospheric Administration (NOAA) and Under Secretary for Oceans and Atmosphere at the U.S. Department of Commerce. In this position, he is responsible for the National Weather Service; the National Environmental Satellite Data and Information Service; the National Marine Fisheries Service; the National Ocean Service; and NOAA's Office of Oceanic and Atmospheric Research. He serves as the United States Commissioner to the International Whaling Commission. He is the author of the book *Planet Earth—The View from Space*, published by Harvard University Press in 1990, and he has written more than 80 articles on climate, oceanography, and space technology issues. He is a fellow of the American Meteorological Society and of the American Association for the Advancement of Science. He has served on numerous advisory committees for the Administration, the National Academy of Sciences, and various international bodies.

Daniel J. Basta is founder and currently the Chief of NOAA's Strategic Environmental Assessments (SEA) Division. Creating the concepts and programs of the SEA Division and helping them grow and evolve has been the primary focus of Dan's 17 years at NOAA. Dan's experience prior to joining NOAA includes positions at Resources for the Future in Washington, DC, the Environmental Studies Board of the National Academy of Sciences, and Johns Hopkins University. Before returning to graduate school to focus on environmental/natural resource management, Dan worked as an engineer in the aerospace industry. Dan has a BS in Industrial Engineering from Hofstra University ('69) and an MS in engineering and policy sciences from the State University of New York at Stony Brook ('75).

Charles A. Bookman is currently a Visiting Fellow and project manager at the H. John Heinz III Center for Science, Economics and the Environment. Previously, he was Director of the Marine Board of the National Research Council. Mr. Bookman holds a master's degree in marine affairs from the University of Rhode Island, and a bachelor's degree from Columbia University. He is an affiliate member of the Society of Naval Architects and Marine Engineers, and a member and past director of the Marine Technology Society.

Jack Botzum has been the senior editor of Nautilus Press for the past thirty or so years and has provided the ocean and coastal community with timely information an all aspects of national ocean and coastal policy in such newsletters as *Ocean Science News and Coastal Zone Management.*

Biliana Cicin-Sain is Professor of Marine Policy in the Graduate College of Marine Studies at the University of Delaware where she also holds joint appointments in the Department of Political Science and in the School of Urban Affairs and Public Policy. Professor Cicin-Sain serves as Co-Director of the Center for the Study of Marine Policy and as Editor-in-Chief of *Ocean and Coastal Management*, an international journal devoted to the analysis of all aspects of ocean and coastal management. She chairs the Secretariat of the Ocean Governance Study Group and has written many articles and books on integrated coastal and ocean management**.** Among her many advisory positions, she is a member of the Marine Board and past member of the Ocean Studies Board, National Research Council, member of the Department of Interior's Scientific Committee on the Outer Continental Shelf and a consultant to the United Nations and the World Bank. She completed a PhD. in Political Science at UCLA and was a postdoctoral fellow at Harvard University.

Penelope (Penny) D. Dalton is a Professional Staff Member for the Senate Oceans and Fisheries Subcommittee. Dalton, who advises Commerce Committee Democrats on oceans and atmospheric issues, staffed the Sustainable Fisheries Act, an update of the Magnuson Fishery Conservation and Management Act. Besides the fisheries legislation, Dalton worked on a successful Coast Guard reauthorization. During the 105th Congress, Dalton is monitoring the implementation of the Sustainable Fishery Act and the Coast Guard reauthorization. Dalton has worked on a range of successful legislation since she joined the panel staff in 1987. She came to the panel from her post at the University of Maryland where she was responsible for identifying long term university goals related to estuarine and marine resources. Dalton also served two years in the Peace Corps in Kenya. Penny holds a BS *(cum laude)* from Dickinson College and attended the Rosenstiel School of Marine and Atmospheric Science, University of Miami and the University of Maryland Chesapeake Biological Laboratory.

Richard Delaney is the Director of the Urban Harbors Institute. The Institute was founded in 1989 at the University of Massachusetts, Boston. It is a public policy and scientific research institute dedicated to public service, research and education. The Institute conducts multidisciplinary research on urban harbor planning issues ranging from water quality and coastal resource protection to harbor management and port planning. Previously, Mr. Delaney served as President of the Coastal States Organization and as Director of the Massachusetts coastal zone management program.

Sylvia Earle is known around the world as a distinguished oceanographer, marine biologist, author, lecturer, and scientific consultant. Dr. Earle is currently the "voice for the oceans" for SeaWeb, the co-founder and Director of Deep Ocean Engineering, Inc., Chairman of Deep Ocean Exploration and Research, and a Research Associate at the Smithsonian Institution. Formerly Chief Scientist of the National Oceanic and Atmospheric Administration, she presently serves on the board of Dresser Industries, Inc., Oryx Energy, Inc., and various non-profit organizations including the World Resources Institute, the Center for Marine Conservation, the Natural Resources Defense Council, the World Wildlife Fund, the Woods Hole Oceanographic Institution, and the Divers Alert Network. Dr. Earle holds a B.S. from Florida State University and an M.A. and Ph.D. from Duke University and has eight honorary doctorates. The author of more than 100 scientific, technical and popular publications (including the 1995 book *Sea Change*, published by G.P. Putnam Sons), and the mother of three grown children, Sylvia Earle lives in Oakland, California and oceans everywhere.

Tim Eichenberg is Program Counsel for the Center for Marine Conservation in Washington D.C. and co-chairs the Clean Water Network, a coalition of more than 1000 organizations working to reauthorize the Clean Water Act. Prior to coming to CMC, he served as Legal Counsel to the California Coastal Commission, and Staff Counsel at the Marine Law Institute at the University of Maine School of Law. He has taught environmental law, coastal law, and federal wildlife law at the University of Maine and Golden Gate University Law Schools, and has lectured on the Clean Water Act at the Environmental Law Institute, the Washington College of Law at American University, and the Graduate College of Marine Studies at the University of Delaware. He was a Post-Doctoral Fellow in Marine Policy at the Woods Hole Oceanographic Institution, is a graduate of the Washington University School of Law and Earlham

College, and is a member of the Bar in California and the District of Columbia.

Nancy Foster, Ph.D., was recently appointed the Assistant Administrator for Ocean Services and Coastal Zone Management. Prior to that she served as the Deputy Assistant Administrator for the National Marine Fisheries Service (NMFS) in the National Oceanic and Atmospheric Administration, U.S. Department of Commerce. She also served as the Acting Assistant Administrator for Fisheries from January through October 1993. She began her career with the National Oceanic and Atmospheric Administration in 1977, first with the Office of Research and Development, followed by 9 years as the Deputy Director then Director of the National Marine Sanctuary Program and the National Estuarine Research Reserve Program. Most recently, Dr. Foster's focus at the National Marine Fisheries Service has been on the successful completion of the first comprehensive evaluation and reorganization of the agency since 1972. Her conservation accomplishments were recognized by award of the Department of Commerce Bronze Medal (1991) for outstanding contributions in advancing NOAA's mission through the establishment of the NOAA Restoration Center and two Department of Commerce Bronze Medals (1992). In l993, she received the highest wards of the Department of Commerce—the Gold Medal—for leadership in providing stewardship of the Nation's living marine resources while Director of the NMFS Office of Protected Species.

Susan Garbini is currently a Senior Staff Officer with the Marine Board at the National Research Council (NRC) in Washington, D.C. A policy analyst, historian, and writer, Ms. Garbini joined the Marine Board in 1989, and has directed studies on diverse technical and scientific subjects including marine and ocean technology and policy, resource development, environmental protection, and coastal management. Prior to joining the Marine Board, Ms. Garbini was employed on a consulting basis by the World Resources Institute, the Carnegie Institution of Washington, and for the Office of Energy and Marine Geology at the U.S. Geological Survey as a science writer and editor and policy analyst on projects involving natural resources issues. Ms. Garbini was coordinator of the Secretariat to the Office of International Nuclear Programs at the Department of Energy (DOE) and worked for Roy F. Weston, Inc. as a Senior Policy Analyst on the Technical Support Team to DOE's Office of Civilian Radioactive Waste Management. Ms. Garbini has a B.A. in History from the University of California, Berkeley; an M.A. in History of Science and Technology from the University of California, Davis, and a Master of Philosophy degree in Public Policy (Science and Natural Resources Policy) from George Washington University in Washington, D.C.

Mary Hope Katsouros is currently Senior Fellow and Vice President for Programs at the H. John Heinz III Center for Science, Economics and the Environment. Previously, she served for many years as the Director of the Ocean Studies Board, National Academy of Sciences, National Research Council. In 1995 the National Academy of Sciences awarded her an internal grant to study the role of ecosystem management in developing sustainable marine fisheries. She has directed the publication of over 45 National Research Council papers and studies on ocean and coastal resource issues. Positions held include advisor to the Department of State for Law of the Sea issues, and U.S. delegate to the Third U.N. Law of the Sea Conference. Ms. Katsouros received her BA from the George Washington University and her JD from the Georgetown University Center of Law. In 1996, the American Geophysical Union recognized her contributions to the Ocean Sciences with its prestigious Ocean Sciences Award.

Thomas R. Kitsos is currently Special Assistant to the Assistant Secretary for Lands and Minerals Management, U.S. Department of the Interior. For many years Dr. Kitsos was the Chief Professional Staff Member at the Merchant Marine and Fisheries Committee and played a major role in the enactment and revision of major Federal ocean and coastal laws in the 70s and 80s. He holds a Ph.D in political science from the University of Colorado.

John A. Knauss is a former Dean of School of Oceanography at the University of Rhode Island. He served as a member of the Stratton Commission, chairing the panel on environmental monitoring, management and development of the coastal zone. He served as NOAA Administrator and is currently working on a book about the role of technology in

ocean policy, dividing his time between California and Rhode Island.

Robert W. Knecht is Professor of Marine Policy in the Graduate College of Marine Studies at the University of Delaware. He is also Co-Director of the Center for the Study of Marine Policy and holds joint appointments in the School of Urban Affairs and Public Policy and in the Department of Political Science. From 1972 to 1980, as NOAA Assistant Administrator for Coastal Zone Management, he directed the initial implementation of the Federal Coastal Zone Management Program. He has written many articles on national ocean policy.

Samuel A. Lawrence served as the Stratton Commission's Executive Director. He came to the Commission from the U.S. Bureau of the Budget, where he had staff responsibilities in reference to maritime, economic development, and atmospheric science matters. He subsequently served as Administrative Vice President, Cornell University, and as NOAA's Assistant Administrator for Management and Budget (1979-84). Currently he is an administrative officer at the University of Maryland, College Park. Dr. Lawrence has written two books on U.S. merchant shipping policies and holds a Ph.D. in political science.

Chris Mann is a Minority Legislative Staff member for the House Committee on Resources. He holds a B.S. from the University of Illinois and has attended the Graduate School of Oceanography at the University of Rhode Island. He was awarded the Dean John A. Knauss Marine Policy Fellowship in 1990.

Anthony MacDonald currently serves as the Executive Director of the Coastal States Organization (CSO) in Washington, DC. Since 1970, CSO has represented the interests of Governors of the coastal and Great Lakes states, and US Territories and Commonwealths on matters relating to coastal resource management, development and protection. Prior to joining CSO, Tony was the Special Counsel and Director of Environmental Affairs for the American Association of Port Authorities, where among his other responsibilities he served as a delegate for the International Association of Ports and Harbors to the London Convention on Dumping at Sea. His other professional experience includes real estate and environmental litigation in Washington, DC and New York City, and the Washington legislative representative for the Mayor of the City of New York. Mr. MacDonald is a graduate of Middlebury College in Vermont and the Fordham University School of Law in New York City.

Roger McManus is the President, Chief Executive and Chief Operating officer of the Center for Marine Conservation (CMC) in Washington, DC, a position he has held since 1984. CMC is a private, marine conservation and education charity which conducts a variety of programs for conserving coastal and marine habitats, preventing marine pollution, managing fisheries, protecting endangered species and other marine life, and educating citizens and students. Mr. McManus previously served as Vice President for Programs and as Endangered Species Program Coordinator at CMC. Prior to his work at CMC, he held positions with the Council on Environmental Quality, the Endangered Species Scientific Authority, and the US Fish and Wildlife Service. Mr. McManus is a graduate of the University of Arizona and Northern Arizona University.

Barbara Jeanne Polo is the Political Director of American Oceans Campaign, and Director of its Washington DC office. AOC is a national nonprofit organization dedicated to protecting and restoring coastal and marine ecosystems through policy advocacy, public awareness building and local actions. AOC's efforts are focused on improving coastal and ocean water quality and sustaining healthy fish populations. Prior to joining AOC in 1996, Ms. Polo worked as an environmental protection specialist in the Wetlands Division of the Environmental Protection Agency; as professional legislative staff for the Merchant Marine and Fisheries Committee in the House of Representatives under Chairmen Gerry Studds and Walter Jones; and as a research assistant for the Institute for Environmental Negotiation. She was awarded a Dean John A. Knauss Marine Policy Legislative Fellowship in 1992. She earned a Master of Urban and Environmental Planning degree from the University of Virginia.

John Rayfield is legislative staff for the House Subcommittee on Fisheries Conservation, Wildlife, and Oceans. He has been centrally involved with the 1998 Oceans Act.

Jacqueline Savitz is the Executive Director of the Coast Alliance, an organization that workds with an Alliance of over 300 groups around the country to protect the coasts from pollution and development. Issues of interest to the Coast Alliance include nonpoint source pollution, clean-up and prevention of contaminated sediments, and discouraging development of sensitive coastal areas that are prone to flooding and storm damage. Prior to her position with Coast Alliance, Jacqueline worked as an environmental policy analyst with the Environmental Working Group in Washington, DC. There her focus was on the public health effects of water pollution and air pollution. Jacqueline first worked as an environmental advocate with the Chesapeake Bay Foundation, in Annapolis, Maryland, where she served for nearly five years as an environmental scientist, focusing on toxic contamination issues. Jacqueline earned her master's degree in environmental science with emphasis in toxicology from the University of Maryland. She earned her bachelor's degree in marine science and biology from the University of Miami, in Florida.

Dan Sayre is Editor-in-Chief of Island Press, a leading publisher of books about the environment for professionals, students, and general readers. Prior to joining Island Press, he spent eleven years with John Wiley and Sons, Inc., most recently as senior editor for environmental engineering, design and management. He received his BA in History from Yale University.

Harry N. Scheiber is the Stefan Riesenfeld Professor of Law and History in the Boalt Hall School of Law, University of California, Berkeley. He holds a B.A. from Columbia and M.A. and Ph.D. degrees from Cornell. His writing on the history of ocean resources includes works on the relationship of scientific developments to management, on fisheries, and on the policy process in domestic management in Pacific Rim cooperation and rivalries. He is a member of the steering committee of the Ocean Governance Study Group.

Robert Stewart is President of the National Ocean Industries Association. He joined the association in 1987 to direct its government affairs program. He held the positions of Vice President and Executive Vice President before assuming his current position in 1990. NOIA is the only national trade association representing all segments of the offshore industry with an interest in the exploration and production of hydrocarbon resources on the nation's Outer Continental Shelf. Mr. Stewart began his career in the petroleum industry as a regional attorney with responsibilities for a seven state petroleum marketing region. He served in the United States Air Force as a Staff Judge Advocate, leaving the military in 1964 with the rank of Captain. He holds a bachelor of arts degree from the University of Iowa and Juris Doctor from the university's college of law.

Carolyn A. Thoroughgood received her Bachelor of Science degree (1965) from the University of Delaware and her Master's (1966) and Doctor of Philosophy (1968) degrees from the University of Maryland. Dr. Thoroughgood has been Dean of the Graduate College of Marine Studies and Director of the Delaware Sea Grant College Program, University of Delaware, since 1985. Prior to her appointment as Dean, she served as Acting Dean and Associate Dean. She was Executive Director of the Delaware Sea Grant College Program, September 1978 - August 1984 and Associate Director for Planning and Operations, September 1976 - August 1978. She also served as the Director, Marine Advisory Service, Delaware Sea Grant College Program. Dr. Thoroughgood's research interests are in the fields of nutritional biochemistry and seafood science and technology. She has published broadly in both scientific journals and general audience literature. She is an active member of several professional societies and organizations and serves on numerous University councils and committees. She is listed in the American Men and Women of Science and is a member of Sigma Xi and Omicron Nu. Her service to the national marine community often requires congressional testimony and staff assistance to key legislative committees.

John R. Twiss, Jr., Executive Director of the Marine Mammal Commission since 1974, came to the Commission from the National Science Foundation. There he worked in the polar regions, served as senior NSF Representative aboard the Eltanin on Southern Ocean research cruises, and helped establish the International Decade of Ocean Exploration program. In the late 60s, he was Vice President of EPC Laboratories, manufacturers of seismic profiling equipment and other oceanographic instruments. A graduate of Yale, he is Chairman of

the Board of the Student Conservation Association and serves on a number of other boards.

Eli Weissman received his B.S. in Environmental Studies from the University of Vermont in 1994, certification in Environmental Management from the University of Washington's Graduate School of Business in 1996, and M.M.A. in Marine Affairs from the University of Washington in 1997. Mr. Weissman is currently a National Sea Grant Fellow working on marine and environmental issues for Congressman Frank Pallone of New Jersey.

Edward Wenk, Jr. served as Director of the National Council on Marine Resources and Engineering Development, the Vice-Presidential level ocean council set up under the Marine Resources and Engineering Development Act of 1966. In this position Dr. Wenk played a key role in promoting comprehensive national ocean policy. A long time professor at the University of Washington, he is the author of *The Politics of the Ocean* (1972) which chronicles the political dynamics present in the late 1960s and the interplay between the White House, Congress, and ocean interests during that time. Professor Wenk has written a number of books and other works on the future of the oceans.

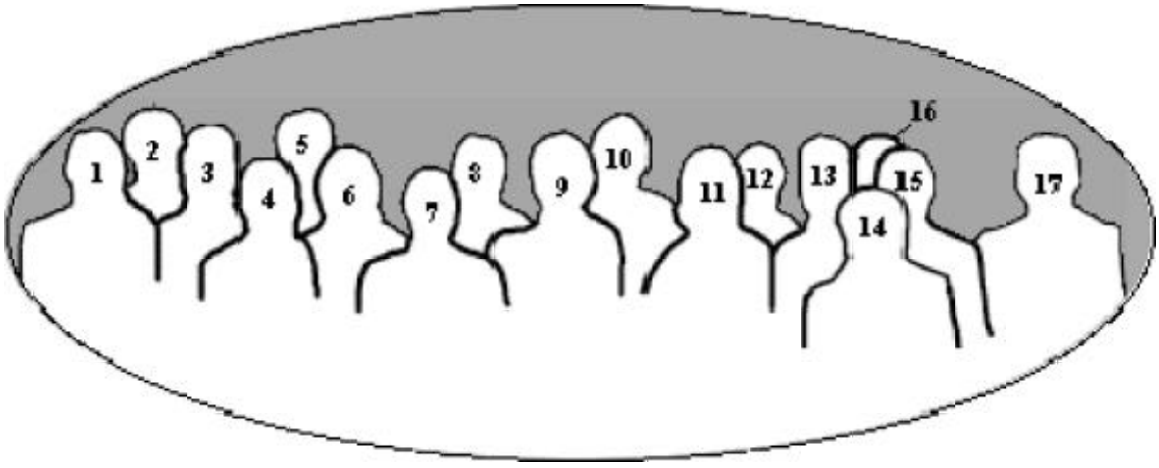
Stanley Wilson received his Ph D from the Johns Hopkins University in 1972 and since then has served in three different federal agencies: first in ONR as Program Manager for Physical Oceanography, then in NASA as Head of the Oceans Program, and finally in NOAA—initially as Assistant Administrator for the National Ocean Service from 1992 until 1997, and most recently as Deputy Chief Scientist. Dr. Wilson was responsible for initiating the development of US planning for the Year of the Ocean.

Robert White was a member of the Stratton Commission and Chair of the panel on marine science. He subsequently became the President of the National Academy of Engineering, National Research Council. He is currently President of the Washington Advisory Group, LLC, a science, technology and enterprise consulting firm, and is a Senior Fellow at the University Corporation for Atmospheric Research and at the H. John Heinz III Center for Science, Economics and the Environment. Dr. White was the Carl T. Compton Lecturer at the Massachusetts Institute of Technology for the 1995-1996 academic year, and President of the National Academy of Engineering from 1983 until his retirement in June 1995. Dr. White established one of the first corporations devoted to environmental science and services and served under five presidents, from 1963 to 1977, first as Chief of the Weather Bureau, and finally as the first Administrator of NOAA in 1970. Dr. White holds a BA in geology from Harvard University and M.S. and Sc.D. degrees in meteorology from the Massachusetts Institute of Technology. He holds honorary degrees from many universities and is a a member of the French Legion of Honor and Academies of Engineering in Japan and Australia.

Sally Yozell is the Deputy Assistant Secretary for Oceans and Atmosphere of the Department of Commerce's National Oceanic and Atmospheric Administration (NOAA). As NOAA's Deputy Assistant Secretary, she is a principal policy advisor on matters concerning marine fishery management, environmental research and coastal ecosystem conservation. She participates in the development of the $2 billion annual budget for NOAA. Ms. Yozell joined NOAA in September 1993 where she served as Director of Legislative Affairs until 1996. She worked previously in the office of Senator John Kerry where she was Deputy Legislative Director and environmental Legislative Specialist. She earned a Bachelor of Arts in Political Science from the University of Vermont and a Master's degree in Public Administration from Harvard University's John F. Kennedy School of Government.

Photo on Front Cover

Members of Stratton Commission (1969)



1. Leon Jaworski
2. Taylor Pryor
3. John Knauss
4. James Crutchfield
5. George Reedy
6. Robert White
7. Jacob Blaustein
8. John Perry
9. Hubert Humphrey*
10. Charles Baird
11. Julius Stratton, Chair
12. David Adams
13. Richard Geyer
14. Frank DiLuzio
15. George Sullivan
16. Carl Auerbach
17. Alton Lennon**

* Vice President and Chair of Marine Science Council

** Congressional Advisor from U.S. House of Representatives

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