Oceanic and Atmospheric Policy Issues of the 1980's
The Role of the NOAA Organic Act

March 13 & 14, 1980
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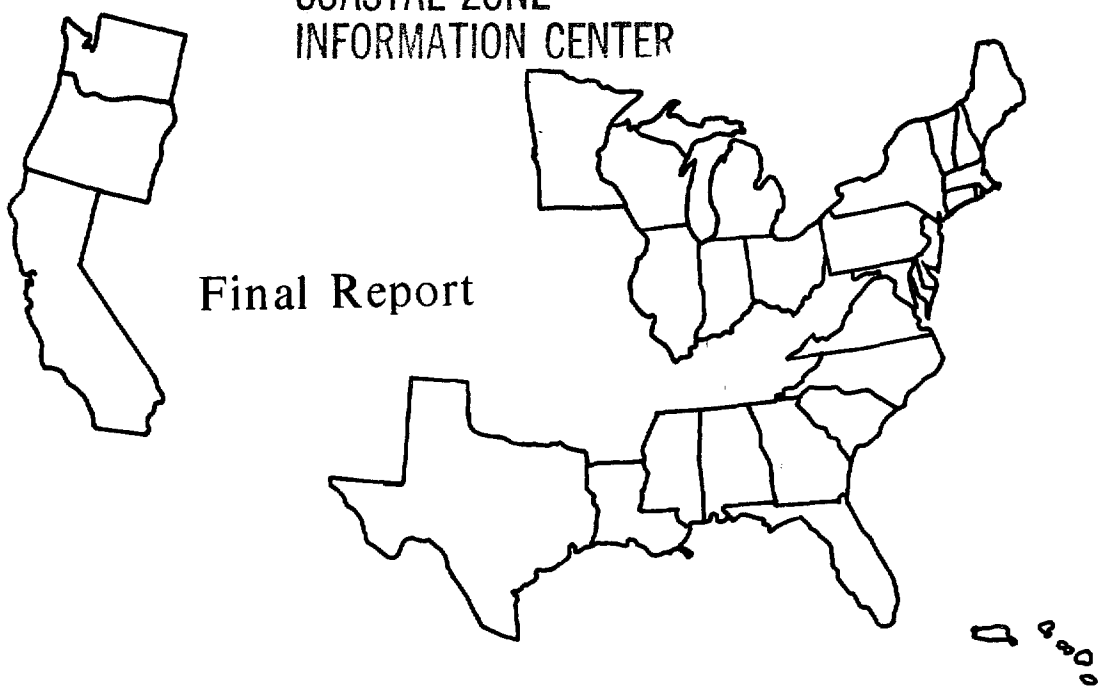

Final Report

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FORWARD

The Coastal States Organization Workshop on the NOAA Organic Act had as its purpose the stimulation of discussion on policy alternatives and organizational options to better carry out the proper management of the coastal, oceans and atmospheric resources of this nation. To achieve this purpose the Coastal States Organization (CSO) assembled over one hundred fifty experts and interested participants to enter into dialogue on NOAA's future and its responsibilities.

I commend the leadership of the CSO for dealing with this important legislative issue. As Project Chairman of this workshop, I wish to thank all of the program participants who took time to share their ideas, exchange information and make recommendations. For implementing the myriad of complex details regarding the workshop, credit is given to CSO staff assistant, Ms. Cindy Marston.

This document contains a tabulation of the Survey which was developed by CSO to coincide with the workshop agenda. This report also contains speech texts and panel remarks made by some of the program participants (written submission of remarks and speeches was invited, but optional).

Workshop participants were invited to answer any or all of the Survey questions they felt comfortable in answering; not all participants returned completed Surveys. For these reasons the totals for each question will vary.

The Coastal States Organization feels that the workshop and this Final Report will help bring into focus the opinions of those concerned with the proper management of our oceans and atmosphere as they relate to the role and need for the NOAA Organic Act.

James F. Ross
CSO Project Chairman
Oceanic and Atmospheric Policy Issues of the 1980's Workshop
The Role of the NOAA Organic Act

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SURVEY QUESTIONS

Panel No. 1

ORGANIZATIONAL ALTERNATIVES FOR NOAA

1. Is there a need for a clearly defined national ocean and atmospheric policy?
   57 Yes
   3 No

2. Should the next decade see increased concentration on utilization of resources?
   53 Yes
   7 No

3. If so, should oceanic and atmospheric utilization and conservation interests be equally balanced?
   49 Yes
   6 No

4. Does the division of responsibility for administering ocean and coastal programs among numerous Federal agencies, in your opinion:

   44 a. interfere with the effective management and protection of ocean uses and resources
   14 b. better insure effective management and protection of resources

5. If your answer to Question 4 was a, which of the following might best solve the problem of interference?

   27 a. establishment of a lead agency
   6 b. establishment of a Federal coordination council
   19 c. establishment of clear legislative demarcation of authorities between agencies
   8 d. none of these will solve the problem

6. If your answer to Question 4 was b, would establishment of a lead agency reduce protection of resources and effective management?
   7 Yes
   16 No

7. In 1979 the President proposed a reorganization plan which would have merged NOAA with the Department of Interior and the Forest Service of the US Department of Agriculture into a new Department of Natural Resources. Other proposals have also been suggested. Do you favor:

   21 a. a Department of Natural Resources
   26 b. a Department of Oceans and Atmosphere
   3 c. a Department of the Environment
   15 d. none of the above

8. Rank the following alternatives for NOAA in the order of your preference (1-most preferred, 5-least preferred).

scale 1	2	3	4	5	
18	17	2	4	5	a. an independent oceanic and atmospheric entity
4	12	16	16	2	b. a strengthened but not autonomous NOAA in the Department of Commerce
1	7	18	9	12	c. an autonomous NOAA within the Department of Commerce
9	2	9	13	18	d. simple codification of the status quo
22	12	4	5	7	e. a three phase process of 1) strengthening NOAA within the Department of Commerce, 2) establishing NOAA as an independent agency, and 3) considering NOAA as the foundation of a larger oceanic and atmospheric entity

9. How do you envision NOAA in ten years?

8 a. as an oceanic and atmospheric agency as presently constituted
15 b. as a larger agency or department with greater responsibilities that are presently located in other agencies
3 c. too large to maintain both oceanic and atmospheric components in one agency
6 d. divided into resource components and absorbed by other agencies or departments
32 e. the principal oceanic and atmospheric agency

10. Which of the following do you consider to be significant reasons for passing a NOAA Organic Act? (You may check more than one, all, or none.)

49 a. an organic act would provide an opportunity for the Congress to express its collective view of what the functions and goals of NOAA should be. (There has been no such unified statement since 1970, when NOAA was created by a Presidential reorganization plan)
41 b. an organic act would restate the various and diverse legislative acts under which NOAA now operates in a comprehensive, consolidated form so that government officials and the public alike will have an easier and clearer reference to the functions and responsibilities of NOAA
38 c. it could assign and describe those functions now performed by NOAA but not expressly mandated to it by the Congress
34 d. it could clarify and define with greater precision those present authorities of NOAA which now appear to overlap the authorities of other State and Federal agencies
32 e. it could affirm the coordinating role now assigned to NOAA by certain legislative and executive orders
39 f. it could simplify, condense, and make more effective the authorization and oversight functions of Congress by permitting program descriptions, program analysis, and authorization requests to reflect the broader and interrelated functions of NOAA in a comprehensive manner
25 g. it could provide for administrative responsibilities for NOAA's programs (such as its capital funds, personnel services, reimbursement activities, and international programs)
43 h. it could be a step toward, and express the intent of Congress for, strengthening NOAA as the principal civilian Federal agency for assessing, developing and executing national policy for the oceans and atmosphere

11. Organic legislation may prescribe organization and specific components of NOAA or it may leave general the organizational framework of NOAA. Which of the following do you favor?

7 a. specific naming and definition of assistant administrators, program elements and components
34 b. naming of some administrative units, but allowing flexibility in the other units
15 c. total flexibility with no specification of program units

12. Should organic legislation deal specifically with codification of such programs as fishery management, habitat protection, sea grant, etc.?

26 Yes
30 No

13. In organic legislation, should NOAA Assistant Administrators be appointed by the President with the advice and consent of the Senate?

22 Yes
30 No

If no, should the Assistant Administrators be appointed by the Secretary of Commerce?

7 Yes
24 No

If no, should the Assistant Administrators be appointed by the Administrator of NOAA?

23 Yes
5 No

Should the Assistant Administrators be career employees?

26 Yes
21 No

14. Over the past several years NOAA has been given an increased amount of regulatory and enforcement responsibilities. Organic legislation could modify NOAA's responsibilities. Which of the following do you favor?

12 a. a shift toward and expansion of regulation and enforcement without sacrificing service and research
0 b. a shift toward and expansion of regulation and enforcement at the expense of service and research
17 c. concentration on basic research to understand the processes behind regulation and enforcement
15 d. concentration on services without assuming an increased role in regulation, enforcement, or basic research
4 e. retention of status quo
13 f. regulation and enforcement should not be a responsibility of NOAA

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SURVEY QUESTIONS

Panel No. 2

RESEARCH AND DEVELOPMENT WITHIN NOAA

1. Do you feel that NOAA should explore research to identify user needs for provision of oceanic and atmospheric services?

   54 Yes
   1 No

2. In addition to providing research directly supporting basic and specialized meteorological services, should NOAA:

   37 a. also conduct basic research in support of its other missions
   10 b. conduct undirected basic atmospheric research
   14 c. insure that all research is directly related to services

3. Should NOAA develop new ocean technology only in response to specific NOAA related research programs?

   20 Yes
   35 No

4. Should NOAA increase funding for basic research in:

   41 Yes 6 No • microscale meteorology (such as basic research leading to weather modification)
   47 Yes 2 No • air-sea interaction (toward improving weather predictions)
   30 Yes 18 No • chemical reactions of polluting materials (toward sewage treatment application)
   24 Yes 22 No • the composition and effects of drilling muds

   If yes to any of the above, should basic research be increased at the expense of other programs?

   11 Yes
   35 No

5. Currently NOAA Research and Development contracts some research to private university and research groups while conducting other research within NOAA itself. With which of the following do you agree:

   25 a. most research and development should be contracted out; little should be done by NOAA scientists themselves
   11 b. some research should be contracted out, but most research and development should be conducted within NOAA
   30 c. it is important that present in-house research capabilities be retained
   2 d. essentially all research and development should be done in-house and NOAA's research and development should be strengthened accordingly

6. Fisheries research and development responsibilities within NOAA should (check one or more):

3 a. be decreased
3 b. remain at current levels
10 c. be increased within current budgetary allowances
21 d. be increased with additional funding and manpower allocations
14 e. be consolidated in R & D
19 f. remain within NMFS
13 g. all Federal research on living marine resources should be included in NOAA

7. At present oceanic and atmospheric research and development programs are assigned to a number of agencies. Do you favor consolidation of these programs within NOAA?

26 Yes
28 No

8. If such programs are not consolidated, should their function be coordinated by a single lead agency?

46 Yes
7 No

9. How may NOAA effectively transfer technology from research and development to operational programs?

18 a. through coordination at the Assistant Administrator level
25 b. through increased coordination at the level of major program elements
24 c. through specific and coordinated programs headed by the Office of Research and Development working in liaison with other main line components
19 d. through scientific meetings and presentation of scientific papers
22 e. through informal contacts among members of the scientific community and operational staff

10. On a scale of 1-5 rank the relationship which should exist between management and research? (where 1 = total management, 5 = total research - circle the number)

	scale			
management.....				.....research
1	2	3	4	5
0	10	27	11	2

11. Should areas where NOAA°s Research and Development (R & D) responsibilities are unclear (i.e. weather modification or solar-terrestial research) be mentioned specifically in organic legislation?

36 Yes
18 No

12. Should all research and development programs of NOAA be consolidated under the Assistant Administrator for Research and Development?

basic		applied	
39	Yes	27	Yes
14	No	26	No

12. NOAA depends on the availability of university and college trained scientists. Should NOAA (check one or more):

24 a. have some responsibility for ensuring the general well being of relevant academic training
36 b. play a stronger role in supporting academic research
7 c. have no responsibility for academic training or research

13. To improve the relationship of NOAA with the academic community, a number of options have been suggested. (Indicate your preference- 1 = should be done, 5 = should not be done)

1	5	
35	11	a. increase of temporary appointments of university scientists to research and service programs
27	19	b. joint NOAA - university institutes or centers
41	4	c. expand use of NOAA grants and contracts to universities' research projects
24	8	d. NOAA supported atmospheric research through NCAR and university faculty
18	24	e. develop specialized institutes for specialized functions (such as Goddard Institute for Space Studies for NASA)
38	7	f. use of cooperative extension service (such as agriculture experiment stations) in association with university departments of atmosphere or marine sciences
32	9	g. utilize state water research centers in association with universities for research by faculty and students
26	18	h. extend the sea grant program to apply to atmospheric research

14. The following questions concern the Sea Grant program of NOAA:

What should be the balance of the following within NOAA's Sea Grant Program? (Give percentages totaling 100%)

	3%	5%	7%	10%	15%	20%	25%	30%	33%	35%	40%	50%	55%	57%	60%	65%	75%	90%	100%
• research				2		3	5	6		2	4	14	2	2	4	1	1	1	
• advisory service			1	3	5	17	6	8	2	1	4	2							1
• marine education	1	2	1	10	9	11	6	3			3	1			1				
• specific coastal zone issues work	2	5		9	6	10	5	2		1		1			1				

Should Sea Grant be used as a "reserve" of ocean specialists?
27 Yes
18 No

Should Sea Grant increase its marine advisory program at the expense of its research programs?
12 Yes
37 No

Should Sea Grant continue a management system which would allow it to be responsive to critical national needs (e.g. research on drilling muds)?
39 Yes
10 No

15. (continued)

Should Sea Grant seek funding to enlarge its international program?

17 Yes
31 No

If yes, should the international program be enlarged at the expense of other programs?

2 Yes
29 No

Should Sea Grant continue to support the major NOAA research effort in aquaculture?

37 Yes
12 No

Should Sea Grant seek funding to continue developing its efforts in marine education?

45 Yes
6 No

Does the international program within NOAA's Sea Grant Office make duplicate the AID international program?

21 Yes
11 No

Does Sea Grant have a useful role to play in international affairs?

27 Yes
18 No

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SURVEY QUESTIONS

Panel No. 3

MARINE AND ATMOSPHERIC SERVICES

1. In providing weather and hydrological services, NOAA's current policy is to serve the general public and certain broad segments of the economy (especially: aviation, marine, agriculture, and forestry/fire weather) with standard products broadly applicable to these user groups. Services tailored to the individual needs of specific users are not provided as that is considered the province of the private sector. With which one of the following do you most agree?

   31 a. the current policy above is correct
   11 b. NOAA's role should be expanded to provide tailored products if NOAA can provide the services at less cost than the private sector
   6 c. NOAA's role should be reduced to provide warnings for public safety only
   8 d. NOAA's role should be redirected by elimination of all specialized services

2. Should NOAA play a lead role in coordinating public education in:
   a. marine science, b. meteorological science?
   39 Yes 17 No a. marine science
   36 Yes 17 No b. meteorological science

   If not a lead role, should NOAA nevertheless increase its support of marine and meteorological public education?
   26 Yes
   6 No

3. Most radio and TV stations promptly broadcast weather and flood warnings issued by NOAA. A small minority do not. It has been suggested that the media should be required by law or regulation to promptly broadcast all warnings. How do you feel about a mandatory requirement?

   14 a. not needed
   26 b. should be adopted
   11 c. desirable but impractical
   7 d. neither needed or desirable

4. Under current policy, NOAA meteorologists are not permitted to appear routinely on commerical television. This is considered to be the province of the private sector. Do you agree with this policy?
   45 Yes
   10 No

5. What do you think NOAA's policy should be with respect to charging fees to the users of its services and products?
   15 a. charge only for communications media (i.e. telecommunication lines, printing, etc.) except where work is done on a reimbursable basis
   24 b. charge total out-of-pocket costs to specialized users, private meteorologists, and others where non-public users can be identified

5. (continued)

16 c. charge specialized users and private meteorologists pro-rata costs of data gathering, processing, and general analysis
3 d. recover all costs by charging all users pro-rata costs
3 e. to cover costs of improvements and facility replacement
5 f. no charge should be assessed for any services

6. Should a state or group of states be required to contribute funds for a particular federally provided specialized service which benefits that state and groups of states? (e.g. flood warnings, hurricanes, agricultural service)

12 Yes
34 No

7. Should meteorologists be required by Federal law to become professionally certified or licensed before being allowed to provide weather services to the public?

34 Yes
19 No

8. Is NOAA's public educational effort in the area of weather adequate?

12 Yes
32 No

9. NOAA has a lead responsibility for civilian meteorological services which is defined by Office of Management and Budget (OMB) Circular A-62. Should NOAA have a similar lead responsibility for oceanographic services?

42 Yes
5 No

10. One of NOAA's principal missions is to provide nautical charts and related navigational information to insure the safety of navigation in the nation°s coastal and oceanic waters. However, there is no similar systematic nautical charting coverage for inland waterways and lakes except for the Great Lakes. Which of the following actions do you favor?

24 a. expand program to include coverage of inland waterways and lakes given additional funding
2 b. extend coverage to these areas even if additional funding is not improved by transferring resources used for coastal and oceanic area coverage
17 c. continue the status quo
8 d. nautical charting coverage for inland waterways and lakes (except for the Great Lakes) should be the responsibility for another agency

11. Which of the following responsibilities do you feel could best be handled by the a. Federal government, b. by the private sector, or c. shared responsibility?

a. 44 b. ___ c. 3	• establish and maintain national geodetic reference networks
a. 42 b. ___ c. 8	• provide nautical chart coverage adequate for the safety of marine commerce, defense, and recreation
a. 32 b. 4 c. 14	• provide marine maps adequate for effective coastal zone and continental shelf management decisions and adjuciation of legal questions
a. 38 b. 3 c. 7	• provide marine maps adequate for effective safety and efficiency of civil and military aviation
a. 11 b. 6 c. 33	• fulfill national needs in ocean engineering and technology
a. 22 b. 7 c. 20	• establish techniques and reference standards by which oceanographic instrument performance can be assessed
a. 8 b. 14 c. 27	• perform laboratory and field leasing and calibration of oceanographic instruments for all users
a. 17 b. 6 c. 23	• collect and disseminate instrument performance and deterioration data as a means of acquiring statistically significant samples on which to base design criteria

12. Aeronautical and nautical chart prices are computed to recover certain costs and specified by law. The law requires that the cost of reproduction, printing, and paper be recovered. This results in periodic price increases thereby possibly discouraging users from purchasing important updating editions. Should the Federal government, in the interest of aviation and marine safety, absorb a larger percentage of charting costs so that more users will buy these essential updating products?

12 Yes
40 No

13. Who should be responsible for the primary maintenance and operation of environmental data and information archival centers?

2 private sector
42 NOAA
8 other Federal agency
4 no one, no National Center necessary

14. Do you feel that there should be national standards for the collection and archival of environmental data:

12 from operational activities only
37 from operational activities and scientific experiments
2 none required

15. Responsibilities for precipitation and river guaging, river and flood forecasting, and water resources management are variously assigned to NOAA, US Geological Survey, Army Corps of Engineers, and Soil Conservation Service, among others. Do you think the organization of the various activities and the coordination between the several agencies is:

12 generally adequate and correct
25 in need of significantly improved coordination but not by reorganization
12 in need of basic reorganization

16. Should meteorological services of specific value to a state or section of the country be provided by:

12 Federal government - at no cost
20 Federal government - on a cost-shared basis
1 States themselves
3 private meteorologists
20 some mixture of all three elements

17. Should NOAA be given responsibility to educate the public on weather prediction capabilities and uses in addition to severe weather phenomena education?

33 Yes
16 No

18. Should NOAA interpret or assist in interpretation of specialized weather forecasts (i.e. agricultural, aviation) in addition to data collection?

34 Yes
15 No

19. There is a question whether state or Regional Service Offices are needed to augment NOAA's climatic data and information services which are now centrally organized. With which of the following do you most agree:

7 state or regional offices are not needed
5 state offices are needed and should be funded and operated by the states in cooperation with NOAA
17 state offices are needed and should be jointly funded and operated (approximately 50/50) by the states and NOAA
12 NOAA should fund and operate regional offices

20. What should NOAA's role be in providing services to other regulatory agencies (e.g. amount of responsibilities in support of EPA for air pollution, BLM for OCS leasing)?

1 provide no assistance to other regulatory agencies
46 NOAA provide environmental and economic information for other agencies to carry out regulatory and management roles
8 NOAA assume responsibility for research regulation and management for any programs affecting oceans and atmosphere

21. Do you favor increasing the extent to which the private sector provides weather services?

33 Yes
14 No

22. Should the private sector eventually assume all responsibility for weather services?

22 Yes
51 No

23. Which of the following responsibilities do you feel could best be handled by the a. Federal government, b. state government, c. private sector, d. shared responsibility?

				• specialized services	
a. 27	b.	c. 7	d. 16	aviation	
a. 23	b.	c. 4	d. 23	marine	
a. 11	b. 3	c. 9	d. 27	agriculture	
a. 1	b.	c. 30	d. 18	business & industry	
a. 4	b.	c. 26	d. 19	radio & TV	
a. 48	b. 1	c.	d.	military	
				• collecting and processing weather data	
a. 28	b. 2	c. 1	d. 18	observing current weather	
a. 18	b. 2	c. 6	d. 24	communicating data	
a. 19	b.	c. 3	d. 27	preparing analysis, forecasts	
a. 31	b. 1	c. 1	d. 15	issuing & disseminating warnings & forecasts	
a. 38	b. 1	c. 1	d. 9	archiving weather information	

24. What should be the respective roles of NOAA and other Federal agencies in providing weather services?

17 NWS would coordinate (if NOAA should be the sole Federal weather service) and other agencies would go to NOAA for these services
19 NOAA should be the primary agency and provide a specified level of services; other agencies should develop their own arrangements for services beyond this level
16 same as a except that the military is allowed to provide its own weather services
0 NOAA provides no specialized weather services to other Federal agencies, they must contract or establish their own

25. Many of human impacts on meteorological conditions and climates (e.g. air pollution, impacts on amounts of precipitation, acid rain, land clearing on temperature, wind, precipitation) affect local microclimates. Much basic monitoring and research are necessary to evaluate these impacts and to attempt eventual management of these problems. A lead function to coordinate and promote a monitoring and research program to determine human impacts on microclimates should be handled by:

14 NOAA
2 other Federal agency
37 cooperatively by NOAA with Federal, State and academic participants
2 by states
1 by other interests

26. Weather services generally fall into three basic categories, as listed below. Rate each of the three categories according to the following: 1-should be NOAA's responsibility exclusively, 2-NOAA should coordinate, 3-remain as is, 4-not important in NOAA°s mission, or 5-should not be done by NOAA.

1	2	3	4	5	
37	12	1			a. disaster warnings
21	8	17	1	3	b. public forecasts
3	9	9		12	c. economic benefit services of use in production and distribution of specialized services

1	2	3	4	5	
8	14	9		6	aviation
4	15	7	1	8	agriculture
	8	6	5	18	construction
9	14	6		6	marine operations
3	4	9	2	17	military
3	9	4	1	17	oil and gas development

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SURVEY QUESTIONS

Panel No. 4

ATMOSPHERIC RESPONSIBILITIES

1. Should NOAA's efforts in monitoring the thermal characteristics of the oceans be increased?
   44 Yes
   4 No

2. Climate research requires global ocean temperature observations. NOAA through its satellite and ships-of-opportunity programs provides limited monitoring of ocean surface temperatures. Should NOAA ocean monitoring programs be expanded?
   46 Yes
   8 No

   If answer is no, should NOAA°s responsibility be limited to:

   2 a. coastal zones only
   1 b. Atlantic and Pacific only
   1 c. Northern hemisphere oceans
   4 d. all oceans

3. What should NOAA's role in weather modification be?

   14 a. to conduct Research and Development but not operative work
   30 b. to conduct R & D with some mission oriented operations
   5 c. to license and oversee operational activities but not R & D
   3 d. NOAA should not have a role in weather modification

4. Should NOAA support intergovernmental programs (Federal-State efforts on cost-sharing basis) related to weather modification?
   38 Yes
   10 No

5. Should NOAA support intergovernmental programs related to climate:

   37 a. research
   24 b. input assessment
   37 c. data and information dissemination

6. To what extent should NOAA be involved in climate impact assessment?

   11 a. only involved in supplying needed climate data to other mission agencies and groups
   7 b. only to supply climate information and work on methodologies
   22 c. to conduct various demonstration studies in key climate sensitive areas (agriculture, energy, water, etc.)
   4 d. work only on high priority climate affected areas that are directly related to Department of Commerce responsibilities

7. To what extent should NOAA support out-of-house climate research?

 0 a. not at all
 25 b. to a greater extent than at present
 6 c. as it presently does
 15 d. only when relevant to NOAA°s assigned responsibilities

8. NOAA, as the national meteorological organization, considers it extremely important that it take a major role in evaluating the sources, transport, transformation and final deposition of acidic materials since an important part of the acid rain problem is an atmospheric one. Do you agree?

 40 Yes
 4 No

9. What specifically do you see as NOAA's future role in solving the acid rain question?

 14 a. providing collection sites for precipitation chemistry measurements
 15 b. evaluating the transport and transformation of acid forming materials using various meteorological-chemical models
 14 c. continuing background measurement of rain acidity in remote areas of the world
 15 d. studying the importance of cloud water chemistry in acid rain formation and the chemistry of the aerosols that contribute to cloud formation
 13 e. determinating the importance of natural sources of acidity versus man-made sources
 9 f. determinating acidic deposition during non-precipitating periods
 34 g. all of the above

10. Which of the following current NOAA activities do you feel are important to its mission in providing solutions to the acid rain problem?

 12 a. collection and analysis of precipitation chemistry in cooperation with EPA at WMO regional and baseline sites
 12 b. special studies at NOAA baseline sites to assess the global spread of acid rain
 5 c. support for university activities in various areas of precipitation chemistry studies
 8 d. use of air trajectories to establish sources of acid rain
 3 e. studies concerning aerosol and gas measurements that may have an effect on the acidity of precipitation
 3 f. urban acid rain studies
 34 g. all of the above

11. Recently the President announced that NOAA would manage all operational civilian remote sensing activities from space. Do you consider these activities to be of:
 28 a. high desirability
 14 b. medium desirability
 5 c. low desirability

12. The President recently approved the joint management by NOAA, DOD, and NASA of any future satellite systems designed to monitor oceanic conditions. These three agencies have proposed the National Oceanic Satellite System (NOSS) as a five year operational demonstration of the capability to obtain and use satellite-derived data on ocean surface temperatures; wave heights; surface currents; surface winds, ocean color characteristics that are indicative of chlorophyll content, sediment dispersion, some types of water pollution; ice coverage; and some information on sea surface topographic which is indicative of deep ocean circulation patterns and large scale topographic features such as sea mounts and submarine canyons.

What other (if any) data would you like to be able to receive from an operational oceanic satellite remote sensing system?

data: Surf pressure; Cloud cover; Upper mixed layer heat transport; Coastal bays and near shore data; Land surface temperatures; Sea surface temperatures and Current data where possible.

13. How important to you is the time factor in receiving and processing satellite data or receiving processed data and information? Date required within:

	Atmospheric Systems	Land Systems	Oceanic Systems
a. 3 to 6 hours	13	4	6
b. 6 to 24 hours	2	6	5
c. 1 day to 1 week	5	4	7
d. longer than 1 week	5	12	9

14. Contained within the Presidents Decision (PD/NSC-54) assigning the management responsibility for civilian satellites to NOAA was the mandate that the private sector be involved to the greatest extent possible. The private sector can best be involved in the civilian satellite system by:

27 a. developing the market for data and derived information
8 b. owning and operating the entire system for a profit
1 c. owning and operating the space segment for a profit
5 d. owning and operating the ground segment for a profit
12 e. joint management with the government
27 f. participating in the design and policy decisions affecting the operational systems

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SURVEY QUESTIONS

Panel No. 6

OCEAN RESOURCES - NONLIVING

1. Which of these roles do you view as consistent with NOAA's mission (check 1 or more)?
   - 29 a. long term studies on natural, unpolluted marine areas in order to distinguish natural variations from pollution caused changes
   - 17 b. assessment of the social and economic consequences of marine pollution
   - 23 c. research toward better methods of identifying potential pollutants
   - 15 d. determination of the potential impact of pollution on marine recreation
   - 27 e. research and monitoring of the pollution assimulative capacity of ocean waters (e.g. dumping, industrial waste disposal, municipal sewage outfalls)
   - 22 f. identification of critical habitats for living marine resources
   - 19 g. improvement of techniques for assessing oil spill damage
   - 20 h. lead agency in development and coordination of a consistent program across the Federal government to allow for comparison and combination of research and monitoring of ocean pollution
   - 19 i. lead agency for development of a coordinated Federal program to improve technology to detect and measure ocean pollutant levels
   - 26 j. all of the above

2. How can multiple use of ocean space best be provided for?
   - 32 a. strong federal ocean focus
   - 15 b. interagency consulting procedures
   - 18 c. interagency coordinating bodies
   - 2 d. ad hoc arrangements based on particular conflict situations

3. In your opinion should Federal policy toward coastal areas and the outer continental shelf be directed more toward development or toward conservation and protection? (circle the number you consider appropriate)

	scale			
protection				development
1	2	3	4	5
1	12	27	10	5

4. Rank the relationship which should exist between management and research (i.e. what should NOAA's role be in each?) on a scale of 1 to 5 (where 1 is essentially all management, and 5 is essentially all research) - write the appropriate number for each category:

	scale			
management				research
1	2	3	4	5
0	1	10	4	1

scale					
1	2	3	4	5	
1	11	28	4	2	a. marine fisheries
2	10	28	3	2	b. anadromous fish
1	4	31	6	2	c. other living resources
0	10	21	8	4	d. habitat protection
2	11	14	15	3	e. marine minerals
1	8	16	14	8	f. ocean dumping
1	4	17	15	9	g. ocean pollution
1	2	11	16	17	h. physical oceanography
1	3	14	20	8	i. atmosphere
3	13	19	6	5	j. marine mammals and endangered species

5. Which ocean energy sources do you feel are most promising from a scientific and economic standpoint?

41 a. ocean thermal energy conversion
11 b. ocean biomass
19 c. wave energy
16 d. salinity gradients
13 e. ocean wind energy
5 f. other
0 g. none

6. Should NOAA's research efforts in physical oceanography be:

32 a. increased
3 b. reduced
14 c. remain unchanged

7. Is additional legislation needed to provide for research concerning long term effects of marine emergencies?

21 Yes
18 No

8. Since the most important single cause of marine pollution is the combined effects of coastal land use practices, should NOAA have any input into controlling such things as:

28 a. physical modification of upland and ocastal habitats
26 b. urban and agricultural upstream runoffs
26 c. atmospheric inputs to coastal areas
37 d. siting of facilities in coastal areas (facilities, each of which have low level inputs, but whose impacts accumulate as development increases)

9. The eventual solution to the problems of marine pollution lies in strengthening current regulations that prevent ocean disposal of certain key contaminants.

26 Agree
25 Disagree

10. Monitoring accumulation of pollutants in the marine environment must be undertaken before formulating specific programs of research, in order to develop statistical bases of data.

34 Agree
16 Disagree

11. Should NOAA favor the continuation of use of specific ocean areas for waste disposal when its findings in some cases are indicative of little or no environmental damage?

40 Yes
14 No

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SURVEY QUESTIONS

Panel No. 7

MANAGEMENT AND PROTECTION OF LIVING RENEWABLE RESOURCES

1. The NMFS (DOC/NOAA) has historically, and still continues to maintain a comprehensive research program with emphasis on fisheries research in support of managing and conserving our living marine resources. Do you favor continuing such a research program with NMFS?

49 Yes
2 No

Should the research program be:

14 a. maintained at its current level
4 b. decreased
25 c. increased
6 d. redirected

2. NMFS (DOC/NOAA) currently has sufficient statutory mandates to carry out its research programs.

37 Agree
6 Disagree

3. Rate what you consider to be the overall quality of NMFS research:

2 a. excellent
25 b. good
18 c. fair
1 d. poor

4. Do you feel that NMFS has clearly defined and prioritized its research programs?

7 Yes
35 No

5. Do you feel that NMFS research contributes to its mission?

40 Yes
4 No

6. Is the research program conducted by NMFS responsive to statutory mandates such as FCMA?

32 Yes
10 No

7. Fisheries research by NMFS generally falls into the categories below. Rate the role of a. applied research and b. basic research for each of the categories below according to the following: 1-appropriate NMFS mission, 2-not appropriate to NMFS mission, 3-shared mission of NMFS and other Federal, state, private, and academic research elements.

	scale						
	1	2	3		1	2	3	
a.	18	2	16	b.	13	2	20	Fisheries oceanography
a.	11	5	18	b.	10	6	19	Fisheries engineering
a.	15	1	19	b.	12	1	24	Resource assessment
a.	14	1	20	b.	13	1	20	Ecosystems/multispecies analysis
a.	8	4	21	b.	8	4	23	Habitat protection
a.	7	5	23	b.	8	6	21	Aquaculture
a.	17	4	14	b.	15	5	15	Marine mammals
a.	14	5	16	b.	14	5	16	Endangered species
a.	6	5	23	b.	7	3	23	Estuarine ecology
a.	6	4	25	b.	5	7	22	Contaminant research
a.	5	3	27	b.	7	3	24	Ecological processes
a.	12	2	21	b.	13	2	21	Fishery technology
a.	10	4	20	b.	10	6	19	Fishing gear research (harvest technology)
a.	9	3	23	b.	9	6	18	Remote sensing
a.	8	4	23	b.	6	6	20	Hydroacoustics
a.	10	2	24	b.	5	5	25	Recreational fisheries
a.	14	1	20	b.	10	2	22	Commercial fisheries
a.	9	7	21	b.	6	7	20	Taxonomy
a.	10	2	24	b.	8	4	23	Climate/fisheries interactions
a.	8	3	25	b.	3	9	22	Economics
a.	5	7	24	b.	1	10	21	Sociology

8. A prerequisite for a sound Federal fisheries management and conservation program is a comprehensive, coordinated fisheries research program. Do you agree?

48 Yes
0 No

9. A sound fisheries regulatory and allocation regime must be based upon a substantive statistical gathering and research program.

47 Yes
1 No

10. Currently NOAA has been given a substantial amount of regulatory and enforcement responsibilities to protect and conserve living marine resources and the marine habitat. Which of the following do you favor?

11 a. greater emphasis on regulation and enforcement activities without sacrificing service and research
1 b. greater emphasis on regulation and enforcement activities even at the expense of reducing or eliminating some service or research
29 c. greater emphasis on service and basic research now to develop possible future increased regulation and enforcement
9 d. concentration on services without assuming an increased role in regulation, enforcement, or basic research
3 e. retention of the status quo

11. Are there conflicts in management objectives between commercial fisheries resource development and environmental protection activities such that programs in these areas should be administratively separated? Circle the appropriate number.

scale				
Complete separation needed				No separation required or helpful
1	2	3	4	5
3	11	11	15	7

12. Are interdisciplinary issues such as conflicts between marine mammal preservation and increased fisheries harvest susceptible to effective action when these program areas are administratively separated or would some form of reorganization better address such complex concerns? Circle the appropriate number.

scale				
New organization required				Current organization handles adequately
1	2	3	4	5
7	10	6	17	3

13. Is a reorganization of fisheries programs necessary to adequately serve the various user groups listed below? For each group, indicate (by writing the appropriate number in the space) what goals reorganization might attempt to serve.

scale				
Should receive much less program emphasis		Same as now		Should receive much more program emphasis
1	2	3	4	5
0	1	4	11	0

scale					
1	2	3	4	5	
1	1	11	8	4	a. Harvesters
1	2	12	9	8	commercial
6	5	10	5	6	recreational
3	2	12	13	4	b. Processors
3	6	8	7	10	c. Marketing
4	3	6	10	11	d. Consumers

14. Living ecosystems are the fragile elements of the Oceans. The stewardship role for these living renewable resources is a major part of NOAA's policy foundations. In the Organic Act this stewardship role should:

39 a. have major emphasis
4 b. be downgraded
4 c. be deleted

15. Basic ecosystem research (much of it longterm) is the key to understanding the composition, interactions and processes of living ecosystems. Without this knowledge it is impossible to evaluate the effects of man°s activities on the resources and their habitats and to effectively manage the living resources in perpetuity. Such basic research information is also needed as a foundation for the applied research used in resource and environmental management and in resource development.

NOAA's biological research mission should be defined in an Organic Act as including longterm basic ecosystem research and short term applied research.

38 Yes
4 No

16. Various groups look at NOAA's functions in different ways. How do you personally rank each of the following on a scale of 1 to 5 (1-absolutely essential, 5-should not be a role of NOAA)?

scale					
1	2	3	4	5	
17	7	13	2	8	a. protection of living marine resources
25	10	7	2	4	b. conservation of living marine resources
19	10	9	3	7	c. development of living marine resources

17. Should our national goals include becoming a major fish exporting nation?

32 Yes
13 No

18. How best might fisheries be developed? (check more than one if appropriate)

1 a. federal subsidies to fishermen
2 b. reduction of environmental safeguards and catch limits
40 c. better protection of spawning and breeding grounds
35 d. emphasis on fish marketing techniques
11 e. reduction of foreign imports
4 f. reorganization of fishing industry
42 g. utilization of new or underutilized species
26 h. quality control of fish and fish products

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SURVEY QUESTIONS

Panel No. 8

COASTAL ZONE ISSUES

1. Should NOAA do more to promote access to beaches?
   33 Yes
   21 No

2. Should the Federal government phase out of funding state coastal zone management, leaving the management to the coastal states?
   11 Yes
   41 No

3. Should NOAA provide funds to states to acquire, preserve and manage:

   40 Yes 8 No a. estuarine sanctuaries
   40 Yes 7 No b. barrier islands
   33 Yes 16 No c. shore front access

4. In your opinion, should the Coastal Zone Management Act be modified to include greater emphasis on urban waterfront areas?
   24 Yes
   23 No

5. Should coastal recreation be included in the mission and responsibility of NOAA?
   22 Yes
   25 No

6. Coastal Zone Management is the only NOAA program with a significant "dry land" component. Should the role of this program be increased to improve NOAA's ability to resolve marine issues originating in terrestrial areas?
   31 Yes
   19 No

7. Should Coastal Zone Management offer a. more, b. less assistance, or c. the same amount of assistance to states in coordinating management of other responsibilities of NOAA?

   a. 13 b. 13 c. 15 Marine mammals
   a. 23 b. 11 c. 9 Marine commercial fisheries
   a. 21 b. 13 c. 6 Anadromous fish
   a. 21 b. 6 c. 13 Weather hazards
   a. 22 b. 7 c. 11 Environmental data
   a. 21 b. 11 c. 10 Marine pollution
   a. 19 b. 13 c. 8 Marine energy development

8. Should the relationship between Sea Grant and the Office of Coastal Zone Management be altered?

26 Yes
16 No

Should Sea Grant fund more projects that would help implement state coastal zone management programs?

35 Yes
13 No

If yes, should the marine advisory service program supply Federal support for local coastal management efforts?

28 Yes
6 No

If no, should the research and technical assistance portion of the Coastal Zone Management Act be funded to support state and local coastal management information needs?

19 Yes
6 No

9. Sound management of marine resources requires cooperation and coordination between Federal and state agencies. Do you feel that:

12 a. existing coordination mechanisms are adequate
23 b. they are inadequate from the viewpoint of state agency participation
11 c. more legislation is needed to clarify state/Federal responsibilities

10. The marine sanctuary program created by Title III of the Marine Protection, Research and Sanctuaries Act (MPRSA) has a broad statutory directive to protect conservation, ecological, recreational and esthetic values. Upon which of these resources should program concentrate:

32 a. pristine areas for wilderness values
13 b. recreational areas
17 c. marine artifacts, such as shipwrecks
34 d. fishery habitat
38 e. endangered or threatened species habitat
5 f. other

11. Should the Federal government take a more active role insuring coastal zone management for significant national interests if individual states leave the current program or fail to meet the Coastal Zone Management Act (CZMA) requirements?

33 Yes
17 No

12. Section 315 of the Coastal Zone Management Act (which provides the authority to purchase lands to increase access to existing publically owned areas) has never been funded. Should NOAA continue its efforts to seek funding for this effort?

31 Yes
18 No

With what other types of access issues should NOAA become involved?

8 a. construction grants for recreational facilities
15 b. habitat improvement for recreational fisheries
21 c. consumer education
29 d. technical assistance to states
6 e. all of the above
6 f. none of the above

13. Many people consider coastal recreation to be included in the mission and responsibility of NOAA. Should NOAA increase its role in:

28 Yes 18 No a. provision of public access
25 Yes 22 No b. increasing emphasis on recreational fisheries

14. As more and more states enter into the CZMA program, what should be the new role of the Federal Coastal Zone Management Office?

30 a. monitoring and assisting state programs in improving program implementation
36 b. provide increased technical assistance on coastal resource issues
26 c. place increased emphasis on Federal intergovernmental coordination
2 d. other

15. In the event Federal legislation is passed allocating funding for projects dealing with public access to urban waterfront areas, please indicate your preference for the use of such funds:

32 a. provide funding to state and local governments for the creation of plans for urban waterfront redevelopment
13 b. land acquisition
7 c. construction grants
14 d. all of the above

Oceanic and Atmospheric Policy Issues of the 1980's Workshop
THE ROLE OF THE NOAA ORGANIC ACT
sponsored by the Coastal States Organization
Howard Johnson Hotel at National Airport
Washington, DC
March 13 & 14, 1980

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Oceanic and Atmospheric Policy Issues of the 1980's
The Role of the NOAA Organic Act

Sponsored by the Coastal States Organization
Howard Johnson Hotel at National Airport, Washington, DC
March 13 & 14, 1980

AGENDA

Thursday, March 13, 1980 - Dominion 1 Room

8:30 am	Welcome to the Workshop	Dr. William J. Hargis, Jr. Chairman, Coastal States Organization
8:45	"Does NOAA Need an Organic Act?"	Congressman John B. Breaux (D-LA) Chairman, Subcommittee on Fisheries, Wildlife Conservation and the Environment Merchant Marine & Fisheries Committee
9:15	Overview of NOAA Organic Issues	James F. Ross Chairman, CSO Workshop
9:30	Coffee Break	
9:45	National Advisory Committee on Oceans and Atmosphere-Findings from Feb. Hearing on NOAA Organic Legislation.	Steven N. Anastasion Executive Director, NACOA
10:15	Panel Discussion # 1- (Member List Pg. 1 of Survey)	Organizational Alternatives for NOAA A. An independent oceanic and atmospheric entity B. Strengthen NOAA within the Department of Commerce C. An autonomous NOAA within the Department of Commerce D. Simple recodification of the status quo E. Three phase process of (1) strengthening NOAA within the Department of Commerce, (2) establishing NOAA as an independent agency, and (3) considering NOAA as the foundation of a larger oceanic and atmospheric entity
11:30	Luncheon - Dominion 2 Room "NOAA-It's New Responsiblities."	James P. Walsh Deputy Administrator of NOAA
12:45 pm	Panel Discussion # 2- (Member List Pg. 5 of Survey)	Research and Development within NOAA A. NOAA's research and development responsibilities for service and resource management B. Should research and development be consolidated? C. What should be the balance between applied and basic research? D. What should be the proper mixture of in-house and external support? E. What should be the role of the Sea Grant program? F. What role should NOAA play in the development of ocean technology? G. NOAA's responsibilities for transfer of technology from research and development to application

2:00 pm — "Scientific Research - the Key to Effective Management" — Congressman Robert S. Walker (R-PA) Ranking Minority Member, Subcommittee on Natural Resources and Environment, Committee on Science and Technology

2:30 — Panel Discussion # 3- (Member List Pg. 10 of Survey) — Marine and Atmospheric Services

A. Types of services by (1) NOAA, (2) other agencies and (3) industry
B. Collection and dissemination of data and services
C. Scope and types of public education
D. Weather service responsibilities:(1) warning system, (2) marine weather forecasting, (3) Federal versus private responsibility for providing services
E. Identification of future services
F. Fee requirements

3:45 — Panel Discussion # 4- (Member List Pg. 17 of Survey) — Atmospheric Responsibilities

A. Earth satellite remote sensing
B. Atmospheric pollution research and monitoring (acid rain, CO_2, ozone, radiation)
C. Weather modification
D. Climate (Federal/State cooperation)

5:00 — Panel Discussion # 5- (Member List Pg. 21 of Survey) — NOAA Organic Legislative Proposals

5:45 — Close of Afternoon Session

6:00 — Wine and Cheese Reception - Dominion 2 Room

7:00 — Banquet - Dominion 2 Room

"Atmospheric Policy Issues of the 1980's" — Congressman George E. Brown, Jr. (D-CA) Chairman, Subcommittee on Science, Research, & Technology Committee on Science & Technology

Friday, March 14, 1980 - Dominion 1 Room

8:00 am — Panel Discussion # 6- Ocean Resources-Nonliving
(Member List Pg. 22 of Survey)

A. NOAA's policy role regarding environmental assessment of non-living uses and mineral extraction (excluding deep seabed)
B. NOAA's resource management role for ocean minerals/Law of Sea (deep seabed mining)
C. NOAA's role as a manager for other ocean uses (Nuclear disposal, energy resources including OTEC)

9:15 — "Ocean Use Issues of the 1980's"
Congressman Joel Pritchard (R-WA)
Ranking Minority Member
Subcommittee on Oceanography
Merchant Marine & Fisheries Committee

9:45 — Panel Discussion # 7- Management and Protection of Living Renewable Resources
(Member List Pg. 25 of Survey)

A. Fisheries Management
B. Fisheries development (underutilized species, aquaculture, consumer affairs, safety, on-shore processing plants, international fisheries trade)
C. Habitat protection
D. Marine mammals and endangered species

11:00 — Panel Discussion # 8- Coastal Zone Issues
(Member List Pg. 30 of Survey)

A. Review of resource and protection responsibilities including wetlands, dunes, estuaries, and barrier islands
B. Funding for Energy Impact
C. Management of coastal development (facility siting, fast track, port development, hazard mitigation)
D. Marine sanctuaries - their role in managing our natural resources

12:15 pm — Luncheon - Dominion 2 Room

1:00 — "The Future Federal Role in the Ocean and Atmosphere"
Luncheon Speaker:
Richard A. Frank
Administrator, NOAA

1:30 — Dominion 1 Room

Survey Reminder
James F. Ross
Workshop Chairman

Closing Remarks
Dr. William J. Hargis, Jr.
Chairman, Coastal States Organization

ADDRESS BY
JOHN B. BREAUX, CHAIRMAN,
SUBCOMMITTEE ON FISHERIES AND WILDLIFE CONSERVATION
AND THE ENVIRONMENT
TO THE COASTAL STATES ORGANIZATION
MARCH 13, 1980

"THE NOAA ORGANIC ACT"

I AM PLEASED TO HAVE THE OPPORTUNITY TO ADDRESS THE COASTAL STATES ORGANIZATION CONCERNING THE NOAA ORGANIC ACT. THE SUBJECT IS ONE THAT HAS RECEIVED A LOT OF ATTENTION OVER THE YEARS, BUT WHICH REMAINS AS CONTROVERSIAL AS EVER.

IT IS DISAPPOINTING THAT A CONSENSUS HAS FAILED TO DEVELOP, PARTICULARLY IN THE OCEANS COMMUNITY, ON THE NEED FOR ORGANIC LEGISLATION AND THAT THOSE WHO SUPPORT SUCH AN INITIATIVE HAVE BEEN UNABLE TO AGREE ON ITS PROPER SCOPE AND CONTENT. MOREOVER, THERE HAS BEEN VERY LITTLE SUCCESS IN STIMULATING THE SYMPATHETIC INTEREST OF THOSE OUTSIDE THE CONGRESS WHO ARE CONCERNED ABOUT THE ATMOSPHERIC SIDE OF NOAA'S WORK. NEVERTHELESS, THE FACT THAT CSO IS CONFRONTING THE SUBJECT IS SIGNIFICANT.

LAST SEPTEMBER, WHEN I INTRODUCED MY ORGANIC ACT PROPOSAL, H.R. 5347, I HAD HOPED THAT BY NOW, SUPPORT FOR THE IDEA WOULD HAVE SPEEDED THE BILL WELL THROUGH THE LEGISLATIVE PROCESS. WHERE WE STAND AT THIS TIME, IN THE

EARLY MONTHS OF THE CONGRESSIONAL SESSION, THE FIRST ORDER OF PRIORITY MUST BE AUTHORIZATION LEGISLATION. IN THIS ELECTION YEAR, THE TIME FOR SUBSEQUENT INITIATIVES IS ESPECIALLY LIMITED. OF COURSE, THE CLOSE OF THE SECOND SESSION OF THE CONGRESS KILLS ALL PENDING LEGISLATION AND NECESSITATES REINTRODUCTION IN THE NEXT CONGRESS. UNDER THESE CIRCUMSTANCES, THE CHANCES ARE SMALL OF ORGANIC LEGISLATION BEING ENACTED IN A REASONABLE PERIOD OF TIME. IN FACT, WITHOUT VIGOROUS, CONSISTENT SUPPORT, THE CHANCES ARE PRACTICALLY NIL. THEREFORE, I AM NOT OPTIMISTIC ABOUT ORGANIC LEGISLATION REACHING ENACTMENT IN THE 96TH CONGRESS. PERHAPS H.R. 5347 WILL AT LEAST SERVE THE PURPOSE OF PROVIDING SOME IMPETUS TO FUTURE EFFORTS TO ENACT ORGANIC LEGISLATION FOR NOAA.

THE BILL THAT I INTRODUCED IN THE PRESENT CONGRESS SETS FORTH A NATIONAL POLICY FOR THE OCEANS, COASTAL ENVIRONMENT AND ATMOSPHERE, NAMES NOAA THE LEAD CIVILIAN AGENCY FOR OCEANIC, COASTAL AND ATMOSPHERIC AFFAIRS, AND PROVIDES THE AGENCY WITH FUNCTIONAL AUTONOMY TO CARRY OUT ITS MISSION WITHIN THE DEPARTMENT OF COMMERCE. REORGANIZATION PLAN NUMBER 4 OF 1970, WHICH ESTABLISHED NOAA, DID LITTLE MORE THAN TRANSFER VARIOUS AUTHORITIES TO THE NEW AGENCY. THE PLAN FAILED TO ESTABLISH A MEANINGFUL NATIONAL POLICY FOR THE OCEANS, COASTS AND ATMOSPHERE AND DID NOT DEFINE NOAA'S ROLE IN RELATION TO OTHER FEDERAL AGENCIES HAVING SIMILAR

RESPONSIBILITIES. FROM THE ORGANIZATIONAL STANDPOINT, THE PLAN MERELY PROVIDED THAT NOAA WOULD BE ONE OF THE MANY UNRELATED ELEMENTS OF THE DEPARTMENT OF COMMERCE. THE MISSION OF NOAA WAS LIMITED PRIMARILY TO SCIENTIFIC INVESTIGATION AND OCEANIC AND ATMOSPHERIC SERVICES.

FOLLOWING THE 1970 REORGANIZATION, THE RESPONSIBILITIES OF NOAA GREW. THE AGENCY EVOLVED INTO A LINE MANAGEMENT COMPONENT OF THE FEDERAL GOVERNMENT. MAJOR PROGRAMS WERE ESTABLISHED UNDER THE COASTAL ZONE MANAGEMENT ACT OF 1972, THE MARINE PROTECTION, RESEARCH AND SANCTUARIES ACT OF 1972, THE MARINE MAMMAL PROTECTION ACT OF 1972, THE ENDANGERED SPECIES ACT OF 1973, AND THE FISHERY CONSERVATION MANAGEMENT ACT OF 1976, AMONG OTHER LAWS. THE AGENCY IS NOW RESPONSIBLE FOR ADMINISTERING PROGRAMS UNDER ALMOST ONE HUNDRED STATUTORY AUTHORITIES AND ACCOUNTS FOR ALMOST ONE-THIRD OF THE BUDGET AND ONE-HALF OF THE EMPLOYEES OF THE DEPARTMENT OF COMMERCE. NOAA PRESENTLY SHARES RESPONSIBILITIES UNDER MANY PROGRAMS WITH THE DEPARTMENTS OF THE INTERIOR, TREASURY, TRANSPORTATION, AGRICULTURE AND STATE AND THE ENVIRONMENTAL PROTECTION AGENCY, THE CORPS OF ENGINEERS, THE FOOD AND DRUG ADMINISTRATION, THE NATIONAL SCIENCE FOUNDATION, THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION, AND THE MARINE MAMMAL COMMISSION, AMONG OTHERS. I THINK ALL THIS DEMONSTRATES THAT THERE IS A NEED FOR A CONGRESSIONAL STATEMENT OF NATIONAL POLICY FOR THE OCEANS, COASTS AND

ATMOSPHERE AND FOR A STATUTORY RECOGNITION OF NOAA AS THE LEAD CIVILIAN OCEANS AGENCY, A ROLE IT HAS PLAYED IN FACT, IF NOT IN LAW, FOR SEVERAL YEARS.

THERE IS A REASONABLE CASE THAT CAN BE MADE FOR CONSOLIDATION OF ALL FEDERAL OCEANS, COASTAL AND ATMOSPHERIC RESPONSIBILITIES IN A SINGLE, INDEPENDENT AGENCY. HOWEVER, INCREASING FISCAL CONSTRAINTS AND THE POLITICAL REALITIES THEY GENERATE SUGGEST THAT AN AUTONOMOUS, THOUGH NOT INDEPENDENT, LEAD AGENCY HAVING OVERALL COORDINATING RESPONSIBILITY, NOT DIRECT AND EXCLUSIVE LEGAL AUTHORITY, FOR THOSE PROGRAMS IS THE BEST THAT CAN BE ACHIEVED IN THE FORESEEABLE FUTURE. WHEN I INTRODUCED H.R. 5347, I BELIEVED THAT SUCH AN APPROACH COULD COMMAND WIDE SUPPORT. UNFORTUNATELY, THIS HAS NOT HAPPENED. ON THE OTHER HAND, NO OTHER PROPOSAL HAS BEEN INTRODUCED AND NO OTHER APPROACH HAS RECEIVED CONSISTENT SUPPORT.

LAST YEAR, I CO-SPONSORED, AS A VEHICLE FOR DISCUSSION, H.R. 9708, THE FIRST NOAA ORGANIC ACT. THE BILL INCORPORATED A NUMBER OF PROPOSALS FROM THE STRATTON COMMISSION AND REPRESENTED AN ALTERNATIVE TO THE NOW DORMANT ADMINISTRATION PROPOSAL FOR A DEPARTMENT OF NATURAL RESOURCES WHICH WOULD INCLUDE NOAA. THE MEASURE WAS PRIMARILY INTENDED TO REEMPHASIZE THE UNIQUENESS AND VALUE OF OCEAN AND COASTAL RESOURCES AND THE IMPORTANCE OF FOCUSING ON THE OCEANS IN

ORDER TO ACHIEVE OPTIMUM BENEFITS FROM THE MANY USES OF MARITIME SPACE AND RESOURCES. H.R. 5347 IS INTENDED TO BE MORE THAN JUST A VEHICLE FOR DISCUSSION. NEVERTHELESS, THE SUBSTANCE OF THIS LEGISLATION REQUIRES THE MOST CAREFUL CONSIDERATION. THE POLICIES WHICH ULTIMATELY ARE REFLECTED IN THE NOAA ORGANIC ACT, IF THERE IS TO BE ONE, WILL BE OF PROFOUND IMPORTANCE TO THE NATION.

TITLE I OF THE BILL RECOGNIZES THE IMPORTANCE OF THE OCEANS, COASTAL ENVIRONMENT, THEIR RESOURCES AND THE ATMOSPHERE, AS WELL AS THE NEED FOR A COHERENT FEDERAL EFFORT, FOCUSED BY A LEAD AGENCY, FOR THEIR BETTER UNDERSTANDING, UTILIZATION, MANAGEMENT, AND CONSERVATION. A STATED PURPOSE OF THE BILL IS THE ESTABLISHMENT OF NOAA AS THE LEAD CIVILIAN AGENCY FOR THE OCEANS, COASTAL ENVIRONMENT AND ATMOSPHERE. NOAA IS TO BE AN INDEPENDENT ENTITY WITHIN THE DEPARTMENT OF COMMERCE. THE OTHER PURPOSE OF THE BILL IS TO ESTABLISH DETAILED NATIONAL OBJECTIVES FOR THE OCEANS, COASTAL ENVIRONMENT AND ATMOSPHERE.

TITLE II PROVIDES THE INTERNAL ADMINISTRATIVE FRAMEWORK OF THE AGENCY. IN ESSENCE, THE EXISTING STRUCTURE OF THE ORGANIZATION IS CONFIRMED, EXCEPT THAT THE POSITION OF ASSISTANT ADMINISTRATOR FOR FISHERIES DEVELOPMENT IS ESTABLISHED AND ALL OFFICIALS OF THAT LEVEL ARE SUBJECT TO CONFIRMATION. THE NEW POSITION WOULD PROVIDE A VALUABLE

FOCUS FOR THE EMERGING FISHERIES DEVELOPMENT POLICY AND THE CONFIRMATION PROCESS WOULD PROVIDE CONGRESSIONAL OVERSIGHT OF A SUBSTANTIALLY STRENGTHENED AGENCY.

TITLE III SETS FORTH THE PRECISE FUNCTIONS OF NOAA. THE EXISTING TRANSFERS OF AUTHORITY TO NOAA ARE CONFIRMED AND THE MISSIONS OF THE AGENCY ARE SET OUT COMPREHENSIVELY. IT IS WORTH NOTING THAT H.R. 5018, WHICH I HAVE ALSO SPONSORED, WOULD REPEAL THE MARINE SANCTUARIES PROGRAM. THE ORGANIC ACT IS NOT INTENDED TO DEAL WITH THAT SPECIFIC ISSUE.

TITLE IV PROVIDES FOR EFFECTIVE COORDINATION WITH OTHER FEDERAL AGENCIES, STATES AND LOCALITIES AND ESTABLISHES A MECHANISM FOR THE REDUCTION OF FEDERAL BUREAUCRATIC AND REGULATORY OVERLAPS. I WOULD LIKE TO EMPHASIZE STRONGLY THAT, BY THIS LEGISLATION, NOAA IS NOT INTENDED TO ASSUME A ROLE INVOLVING DUPLICATION OF THE EFFORTS OF OTHER AGENCIES. IF OTHER AGENCIES ARE CARRYING OUT EFFECTIVE PROGRAMS, NOAA MUST NOT CREATE COMPLICATIONS.

THE BILL ALSO PROVIDES FOR INTERNATIONAL COOPERATION, INCLUDING A MEANINGFUL ROLE FOR NOAA IN ALL INTERNATIONAL MEETINGS AND NEGOTIATIONS INVOLVING UNITED STATES OCEANIC, COASTAL AND ATMOSPHERIC INTERESTS.

TITLE V CONTAINS ADMINISTRATIVE PROVISIONS CALCULATED TO ASSURE THAT NOAA HAS AUTONOMY WITHIN THE DEPARTMENT OF COMMERCE. MOREOVER, NOAA IS EMPOWERED TO MAKE FORMAL RECOMMENDATIONS TO THE CONGRESS ON THE RELEVANT ACTIVITIES OF OTHER AGENCIES.

TITLE VI RATIONALIZES THE MYRIAD ENFORCEMENT AUTHORITIES OF NOAA. THESE PROVISIONS ENSURE THAT NOAA HAS THE LEGAL CAPABILITIES TO ENFORCE EFFECTIVELY THE LAWS WHICH IT ADMINISTERS.

TRANSITIONAL PROVISIONS ARE CONTAINED IN TITLE VII.

THE BILL PROVIDES ALL OF THE BASIC COMPONENTS THAT ARE NECESSARY FOR THE ESTABLISHMENT AND EFFECTIVE IMPLEMENTATION OF A NATIONAL POLICY FOR THE OCEANS, COASTAL ENVIRONMENT AND ATMOSPHERE. EVEN IF THE PROPOSAL DOES NOT SURVIVE THE 96TH CONGRESS, IT WILL HAVE CONTRIBUTED TO THE EFFORTS OF THOSE OF US WHO ARE ATTEMPTING TO CONSTRUCT AND PROMOTE A MEANINGFUL NATIONAL PROGRAM IN THE AREAS OF NOAA'S RESPONSIBILITIES.

AN ORGANIC ACT FOR NOAA -- The View from NACOA
Presented to
The Coastal States Organization

March 13, 1980
by
Steven N. Anastasion
Executive Director
National Advisory Committee on Oceans and Atmosphere

This morning I will present NACOA's views with respect to an organic act for NOAA.

For those not familiar with NACOA, a brief description may be useful. The National Advisory Committee on Oceans and Atmosphere is an advisory committee established by Public Law, at the same time NOAA was formred and also on the basis of Stratton Commission recommendations. NACOA is authorized to have 18 members appointed by the President from individuals -- non-Federal -- who are eminently qualified in oceanic and atmospheric matters. Our Chairman is Dr. Evelyn F. Murphy, former Secretary of Environmental Affairs for the Commonwealth of Massachussetts and presently of MIT. Your present CSO leader, Bill Hargis, is a past Chairman.

NACOA is charged with the responsibility of reporting annually to the President and to the Congress its assessment of the Nation's activities in these areas, and in developing such other reports as may be requested. Additionally, the Committee advises the Secretary of Commerce with respect to NOAA's programs.

NACOA was, therefore, asked by several Senators and Congressmen -- and by NOAA -- to comment on an organic act for NOAA. Our review included

the President's message of July 9, 1970 to the Congress which transmitted Reorganization Plan No. 4 establishing NOAA and which identified several compelling oceanic and atmospheric needs. According to that message, establishment of NOAA would enable the Federal Government to approach the tasks involved in a coordinated way. The unified approach to the problems of the oceans and the atmosphere would enable increase in knowledge and an expansion of opportunities.

In discussing NOAA's role, the President went on to say that he expected NOAA to exercise leadership in developing a national oceanic and atmospheric program of research and development. It would coordinate its own scientific and technical resources with the technical and operational capabilities of other government agencies and private institutions. Further, he indicated that NOAA would continue to provide to others those services which have become essential to transportation, agriculture, and national security.

The President's message, while providing for a continuation of services provided by NOAA acquired components, such as mapping and charting, weather observations and warnings, addressed the prospect of unified approaches in only one area: leadership and some coordination in research and development.

That was the beginning 10 years ago. In commenting on the new NOAA, the CEQ in its 1971 report noted that NOAA was the second major organizational innovation in 1970, the first being EPA. The framework in which NOAA was viewed, if the CEQ report can be considered representative, was the following:

"This new agency within the Department of Commerce, consolidates the major Federal oceanic and atmospheric research and monitoring programs. Both the Weather Bureau and the Coast and Geodetic Survey now operate within NOAA."

"The agency monitors the impact of pollutants on the marine environment; describes changes in the oceans, estuaries, and the atmosphere; and establishes ecological baseline data and models."

As you look back from today's perspective, the beginning -- while difficult in accomplishment -- seems rather modest. It has turned out to be, however, quite the contrary -- more in the nature of the major organizational innovation. NOAA is certainly more than a research and service organization; it now manages and regulates, as well.

The dramatic increase in public attention to the oceans and atmosphere results from the widely held view that they present problems and opportunities relevant to critical national, social, environmental, economic, and welfare issues.

In setting forth activities required for addressing these many issues -- some not even conceived of in the early 1970's -- significant new Federal enterprises have been set in motion. While I do not intend to cite each specific piece of legislation, I want to mention several of the issues accomodated which are pertinent to today's discussions.

For example, awareness of the significant changes taking place in our coastal zones brought about coastal zone management. Concern for the extinction of oceanic creatures brought about protection for marine mammals and other endangered species. The need to protect the environment provided measures to look carefully into ocean dumping. Concern over our fisheries brought about conservation and management within a 200 mile zone around our coasts. And most recently, specific national planning responsibilities for ocean pollution monitoring, research and development, and for climate have been been mandated.

For each of these initiatives, and in some cases major landmark actions as in coastal zone management and in fisheries conservation and management, Congress has found in NOAA a reasonable focus and home for responsibility.

The 1980 NOAA is not the same entity that was established in 1970. Moreover, additional areas of activity of considerable significance are presently gathering headway or are possible, such as planning for weather modification research and development; the recently added responsibilities by the President for managing all operational civilian land space remote sensing activities to complement its oceanic and meteorological space sensing functions; and the likely assignment of the deep seabed mining function for which the Secretary of Commerce has informed Congress of the President's preference for NOAA as the responsible Federal agency.

In view of the gradual and piece-by-piece manner by which NOAA has come to be what it is today, NACOA has concluded that there is considerable merit for formulating an organic act for NOAA. The conclusion is based on the insights gained in the intensive analyses by the Committee for its major study on the Federal structure for oceanic and atmospheric affairs issued in February 1979, as well as more recent efforts specifically addresssing the organic act question.

NACOA believes that the benefits of an organic act for NOAA would include the following. It would provide an opportunity for Congress and the Executive Branch to state their views on the functions and goals toward which NOAA should now direct its efforts. The many responsibilities of NOAA should be integrated into a legislative framework for the present and for the forseeable future.

An organic act would codify and simplify the diverse legislative authorities under which NOAA now operates. It would thus be a useful reference, facilitating common understanding among the Federal agencies, Congress, and the general public of NOAA's functions and responsibilities.

The organic act would describe and encompass those functions now being performed by NOAA which are implicitly encompassed under present authorities but which now deserve explicit recognition. It would clarify those authorities which overlap or appear to overlap those of other agencies.

The organic act would affirm and describe the diverse coordinating roles now assigned to NOAA under separate authorities. It would establish procedures to assure that coordination does in fact occur.

NOAA's present numerous program authorizations arrive for consideration by Congress at different time periods. Little opportunity exists for a comprehensive review by Congress. An organic act would provide the opportunity for such a comprehensive authorization review process whereby Congress could systematically review NOAA programs and assess goals and priorities, thereby reflecting a broader and integrated overview of NOAA's total effort.

And finally, perhaps most importantly, an organic act for NOAA could express the intent of Congress for a strengthened NOAA as the central civil agency for oceanic and atmospheric affairs.

In the foregoing, what I have not done, of course, is to describe the optimum organic act to serve these purposes. There is still some way to go before the Congressional and Administration drafters narrow the many concepts now being expressed into a realizable and useful form. NACOA does have, however, some specific views on a NOAA organic act.

The oceans and the atmosphere, as we have seen, are dynamic areas of public consideration. There is need to insure that to whatever degree an organic act can describe NOAA's role in these, it should provide the Administrator with the flexibility to accomodate changing priorities and new directions. The organic act should deal primarily in broad agency functions

and areas of responsibility, leaving to separate legislative enactments specific program amplification. Moreover, the organizational aspects of the organic act should be presented so as to allow for similar adjustment to changing needs. For example, while Congress may wish to limit the total number of policy officials and to indicate those which would require advice and consent, NACOA believes that an organic act which specifies the responsibility areas of such officials would provide less than the desired flexibility.

NOAA's functions should be written in a manner not to imply exclusivity. The relationships between NOAA and other agencies will undoubtedly differ to some degree in each evolving program activity; and areas of specific responsibility should be resolved in legislation addressing each program.

Nor should the organic act for NOAA transfer present responsibilities from one agency or department to another. NACOA believes that there is considerable merit in an organic act whose major objective is to describe clearly what NOAA has become over the years. While Federal reorganization may have merits, and NACOA believes that it does, the NOAA organic act should not be used as the mechanism to reorganize the Federal structure for oceanic and atmospheric affairs.

Werner A. Baum
Dean
College of Arts and Sciences
The Florida State University

The entire remarks by Dean Baum will be available in the near future.

For the purpose of this record Dean Baum presented arguments in favor of the following two points:

(1) that, regardless of what happens with respect to the Organic Act, we not lose sight of the need for an independent oceans and atmosphere agency, possibly combined with NASA, and

(2) that we not miss the opportunity presented by the Organic Act to clarify in law the relative responsibilities of the National Weather Service and of the private sector in the delivery of meteorological services to specialized interests.

"NOAA--Evolving New Responsibilities"

Remarks of

James P. Walsh
Deputy Administrator

National Oceanic and Atmospheric Administration

CSO Organic Act Workshop

March 13, 1980

I welcome this chance to discuss with you NOAA's changing responsibilities in national oceanic and atmospheric affairs. NOAA was established in 1970 to provide a central focus for many of the Federal government's ocean-related programs under Reorganization Plan No. 4. The plan proposed a new agency organized around oceanic and atmospheric programs. When actually created, however, NOAA was given functions mostly related to science and services. In the ten years since its establishment, with the addition of new statutory responsibilities, NOAA's overall character has changed from a primarily science and services organization to one with emphasis on management and regulation, as well as research. We are now closer to the multi-disciplinary agency the Stratton Commision recommended.

This afternoon I would like to talk about how NOAA's role in Federal oceanic and atmospheric affairs differs from that envisioned at its creation, and how NOAA's current programs have evolved from the activities assigned to it in 1970. In doing so, I will concentrate on four major areas of NOAA's activities: fisheries, coastal zone management, oceanic and atmospheric services, and research and development.

The Stratton Commission and NOAA's Establishment

Congress established the "Stratton Commission" in 1966 to investigate a broad array of maritime problems and to formulate a comprehensive, long-term, national programs for marine affairs. In its 1969 report, Our Nation and the Sea, the Stratton Commission recommended the creation of an independent new agency to be the principal instrumentality within the Federal government for administration of civil marine and atmospheric programs. The Commission concluded that:

> "A new, strong Federal focus for marine activity is essential to a national ocean effort. The organization should direct a civil ocean program to the Nation's economic and social needs, conducting the scientific, technological, and management programs required to ensure those needs are met."

The Commission suggested that a new agency be composed of the Coast Guard, the Environmental Science Services Administration, the Bureau of Commercial Fisheries, the marine and anadromous fisheries function of DOI, Sea Grant, the U.S. Lake Survey, and the National Oceanic Data Center. With these elements, the new agency would have been made up of about 55,000 employees, a fleet of 320 seagoing vessels, and a budget

in 1969 dollars of $773 million. The Commission projected that the agency would have an operating budget of $2 billion annually by 1980.

The NOAA that was established was far less comprehensive than the Stratton Commission proposed. In FY 1971, NOAA had a little over 12,000 employees and a budget of $281 million. The compromise was between Congressional supporters of a strong independent oceans agency and a reluctant Administration. In his message accompanying the plan, President Nixon restricted the agency's functions primarily to research and development with limited responsibilities to assist ocean industries such as fishing. He stated:

> "I expect that NOAA would exercise leadership in developing a national oceanic and atmospheric program of research and development. It would coordinate its own scientific and technical resources with the technical and operational capabilities of other Government agencies and private institutions."

However, additional responsibilities were delegated to NOAA by Congress during the 1970's.

Today, with these new statutory assignments, NOAA is responsible for managing marine fisheries and mammals; funding state coastal zone management programs; undertaking major re-

search programs in the oceans (e.g. climate and pollution) and the atmosphere (e.g. hurricanes); forecasting the weather and severe storms; preparing aeronautical and nautical charts and maps; operating environmental satellites; and being the major repository in the Federal government for environmental data relating to the oceans and atmosphere. To carry out these activities, we have a personnel complement of approximately 13,000, a fleet of 25 ocean-going vessels, and a budget in this fiscal year of about $800 million. Our employees include resource managers, administrators, fishery biologists, oceanographers, engineers, geologist, meteorologists, and sundry other technical and scientific professionals, plus a few lawyers.

Let me now outline for you our current programs and recent initiatives in fisheries, coastal zone management, oceanic and atmospheric services, and research and development.

Fishery Management Programs

NOAA's Office of Fisheries has the responsibility for managing and conserving fishery resources within 200 miles of the U.S. coast, protecting the vital habitats of marine mammals and endangered species, assisting the economic development of the U.S. fishing industry, and conducting research to support these missions. Some of our most significant activities in the fisheries area in the recent past

have been supporting fisheries development, working with the IWC to adopt a moratorium on factory-ship whaling operations, jointly sponsoring a world conference on sea turtle conservation, and preparing a legislative proposal for management of salmon in the Pacific Northwest. We are currently involved in reviewing alternatives to the present management of tuna-purpoise conflicts, analyzing potential issues involving habitat protection and energy activities in coastal areas, and implementing the President's policy decision on fisheries development.

Coastal Zone Management

The Office of Coastal Zone Management has the responsibility for establishing national policies for use and protection of coastal areas. It provides funds to coastal states to develop and carry out comprehensive state programs to manage coastal resources, designates unique areas as estuarine or marine sanctuaries, and seeks to harmonize federal decisions affecting coastal resources. Nineteen states have federally approved coastal programs covering 60% of our nation's coasts; additional states will be approved this year which will provide coverage for 78% of the coast. Presently, NOAA is carrying out the President's mandate declaring 1980 the "Year of the Coast" and is conducting an interagency review of federal programs affecting coastal areas.

Oceanic and Atmospheric Services

The Office of Oceanic and Atmospheric Services reports and forecasts the weather, manages environmental satellites and an oceanographic fleet, prepares nautical and aeronautical charts, and operates the largest environmental data storage and retrieval system in the world. NOAA has recently been assigned the responsibility for the development and management of an operational land remote sensing satellite program (LANDSAT) to provide extensive information about agricultural yields, and developing an experimental ocean remote sensing satellite system--the National Oceanic Satellite System (NOSS). With these new initiatives, NOAA will be responsible for all operational programs of civil satellite remote sensing.

Research and Development

The Office of Research and Development conducts environmental research to support program needs related to ocean pollution, climate, and weather modification. NOAA has lead responsibility for major multi-agency international research programs such as the National Climate Program, the National Marine Pollution Program, and the Global Atmospheric Research Program. We are currently involved in the development of a National Climate Plan, to be released this year, and are continuing to assess the effects of the Campeche oil spill in the Gulf of Mexico (Ixtoc 1).

Conclusion

Clearly the last decade has seen a metamorphosis in national policy for the oceans and atmosphere. There has been a growing recognition of the potential economic benefits from exploitation of marine and coastal resources, while at the same time it has become apparent that increasing human activity can cause harmful changes in the ocean environment. NOAA's role has become one of a steward and manager rather than solely that of an investigator. A similar role is now emerging with respect to atmospheric resources. The debate over how to use and conserve our oceanic and atmospheric resources is just beginning. We will continue to examine and carry out our choices.

Comments on Research and Development Within NOAA and NOAA Organic Legislation

C. L. Hosler, Penn State

Our ignorance of the complex atmospheric and ocean systems is overwhelming and one cannot overemphasize the necessity for rigorous research programs or that the Federal establishment must play the paramount role in the support and conduct of this research. Increased human pressure on limited resources and the need to reduce waste and increase productivity while preserving a quality environment requires that we not only understand the workings of our atmospheric and oceanic environments but that we be able to predict the natural course of events and anticipate human modification.

NOAA is a high quality Federal service. Not only has it provided high quality services but it has contributed greatly to advancing the understanding required to improve those services.

In the atmospheric sciences NOAA plays the central role in terms of operational meteorology. In spite of strong dependence upon universities for its personnel and the advance of the sciences, NOAA's ties to universities have for many years been less than ideal in terms of exchange of personnel and financial support to universities in the atmospheric sciences. This has been recognized by NOAA leadership and steps have been taken to improve the situation. It will be a strong test of NOAA's leadership to sustain a move toward more support of university research in the current Federal budgetary climate. While there is little doubt that NOAA needs in-house research capability, and NOAA research labs would compare favorably with most university research laboratories, there is in the academic community

some apprehension about the future productivity of these laboratories. Universities have problem turning over staff due to tenure. Federal labs seem to have an even more difficult problem. I don't intend to offer a solution for the Federal laboratories but I do feel that some very creative management will be required to sustain productivity. Sustained creativity over an entire career is rare indeed. In the university teaching or advising duties can be interchanged for research duties rather easily. I'm not sure the NOAA labs have similar flexibility. For this and other reasons, NOAA must be encouraged, perhaps in its organic legislation, to draw upon the total resources of the nation wherever they may be. At the same time it must be clear to NOAA that oversight of the total national requirement for research in support of services is part of their responsibility.

Much of NOAA's in-house research is indeed in support of services. At the same time, the physical separation of research from operations in some cases is detrimental to rapid identification of operational needs and transfer of research results. Also, the physical separation of research laboratories hinders exchange of ideas between scientists and implies narrower interest and capability than is really the case. The ability to pursue new interests or utilize varied talents is enhanced by being part of a larger organization. Many NOAA research personnel in mission oriented laboratories could be contributing to the missions of other laboratories if they were physically integrated. There would be greater opportunities for individuals to spread their talents and less chance of stagnation. Some duplication of facilities or services might also be eliminated.

Areas of research relating to user needs and application and communication of NOAA products has been neglected. It is not enough to produce

good information if no one knows it exists or if access is difficult. Plans for major investments in facilities, observation systems, data processing and dissemination of information can be sound only if the end users were kept firmly in mind and their needs and ability to utilize the information known.

The organic legislation can do little to spell out the details mentioned above except to give NOAA a clear mandate for services and supporting research in the realm of the atmosphere and oceans and to state that to the greatest degree possible NOAA should utilize the total national resource of people and facilities to carry out its missions. This carries an obligation to use industry, universities, individuals and facilities outside of government to the greatest degree possible commensurate with providing timely and state of the art information and services. With the exception of the Defense department, which has a special mission and requirements not likely to be satisfied beyond its control, all oceanic and atmospheric programs including weather modification research, should be in the same organization. I personally believe the nation and its people would be best served by an intact NOAA within a department of natural resources. We cannot afford to have our nation's earth, oceanic and atmospheric resources, assessed and managed separately nor can their behavior be assessed, predicted and managed in isolation.

STATEMENT OF DR. RICHARD A. GEYER,
PROFESSOR OF OCEANOGRAPHY,
TEXAS A&M UNIVERSITY, COLLEGE STATION, TEXAS
AT
THE RESEARCH & DEVELOPMENT PANEL
OF THE NOAA ORGANIC ACT WORKSHOP
HELD
THURSDAY, MARCH 13, 1980 AT 1 PM
WASHINGTON, D.C.

I am especially pleased to have the opportunity to participate on the Research & Development panel of the NOAA Organic Act Workshop, having been the Vice Chairman of the Stratton Commission. Thus it is possible to provide at first hand some continuity between this era and the present, because NOAA represents the tangible culmination at this time of major reorganization recommendations made by this commission. Admittedly, the original recommendation for a reorganization of the marine related activities of Federal agencies were much broader in scope, but it is never too late to try to implement additional improvements. Several attempts were made in the ensuing decade to further reorganize the structure of these agencies, but to no avail. These include such diversified attempts in different degrees of depth as the NACOA (1974), and the Moore and Hollings Proposals (1976), each one in turn recommeding increasingly broader changes.

Ironically, the rationale for establishing the Commission, and one of its major charges, was to provide a reorganization plan that would minimize the overlapping, and in many cases the widespread duplication of functions and responsibilities that existed between marine oriented Federal agencies. Unfortunately today, this situation by actual count is worse than at the end of the 1960's. This is evident in Table 9-2, pages 7, and 17-21 of the U.S. Ocean Policy in the 1970's - Status & Issues, Department of Commerce, October (1978). The same applies to expansion of Congressional committees having jurisdiction over these agencies; and

there could be a correlation between these facts. Until these committees themselves are streamlined, there is little hope for a significant change in the proliferation and duplication of functions and responsibilities of existing agencies.

How are these remarks pertinent to a discussion of the NOAA Organic Act? The answer lies in the fact that there does not appear to be anything obvious in the provisions of this Act that will significantly solve the problems presented in these introductory remarks. This statement may be regarded by some as a sweeping generalization and over-simplication, but eight minutes allotted to each panel participant precludes a detailed presentation. However, it may be expected that individual examples will be discussed during the workshop in both the formal presentations and the question periods.

I turn now to comments specifically related to Research & Development. A reading of the document prepared to compare HR5347 and the current NOAA draft leads to the conclusion that references to items pertaining to this subject are conspicuous by their absence. Does this mean NOAA is satisfied with the Research & Development provisions as presented in this bill? A careful reading of the bill reveals that several provisions of the bill, in effect, give NOAA "carte blanche" to conduct Research & Development in the broadest terms, as well as specifically. (For example, Title III, Section 301, (1), (2), (3) and (4), (9) and (10), and (11)). These paragraphs are couched in such all inclusive terms that NOAA could conduct research that would overlap and duplicate similar research that might be conducted by many other Federal marine oriented agencies.

More specifically, Section 301, (9) refers to Research & Development, "to enhance knowledge in fields of ocean engineering and technology, including the development and operation of manned research submersibles,

underwater laboratories,...to improve undersea diving techniques." Section 301, (10) D goes on to provide catch-all language so that something specific that has not been thought of might be included, viz, "providing such financial assistance and conducting such other programs as may be appropriate."

These comments are not to be construed as meaning that NOAA should not engage in research per se, but merely to point out the opportunity available for widespread duplication of effort within Federal agencies. For example, the efforts spelled out in Section (9) overlap and duplicate the Navy's activities involving submersibles and diving activities. The scope of their needs is so much greater in these areas to conduct their missions successfully. At the same time a significant number and quality of the results achieved do not fall into the classified category; and therefore, could be made available to the civilian user.

NOAA and those components in which it existed prior to its present form has never emphasized fulfilling its research needs to any appreciable extent, by using the special capabilities of either the academic or the industrial communities. Quite recently a modest attempt has been made by NOAA to begin to provide a specific means to coordinate some research activities with the academic community. This includes a two page newsletter entitled "University Affairs Letter" whose second issue appeared last December. One of the items listed is a fund of $260,000 available for University research on the impact of ocean dumping of dredged material in three areas. New York Bight, Cape Henry, and the region off the Mississippi Delta. This amount does not begin to compare with the tens of millions of dollars spent over the last several years by NOAA on research and data acquisitions on ocean dumping in the areas of the Atlantic and Pacific oceans. It should be noted, however, that at least the publication of pertinent results of this research area has been more prompt and complete than in general. This applies especially to the MESA and DOMES programs,

where the results have been disseminated more rapidly and in more diversified publications both through in-house, as well as in reference books and periodicals.

On the other hand, an example of an inordinate delay in the publication of results of a very important discovery is found in the field of environmental pollution. A period of about 18 months elasped between the time a naturally occurring tar seep comprising over a million tons was observed in the South Atlantic near Trinidad, and this information became available in the literature. This evidence is of primary importance in demonstrating that grossly underestimated value of 600 thousand tons/year attributed by a National Academy of Science Committee in the mid 1970's as to the total amount of tar escaping into the ocean from natural causes. This is a very important fact and dramatically changes any quantitative estimate of the value for the total amount of hydrocarbons that could be expected to accumulate annually in the ocean from natural causes.

It is to be hoped that NACOA will function more expiditiously in its most recent assignment given to it in a letter of November 26, 1979 by Stuart E. Eizenstat. The letter requested that NACOA participate more actively to define the objectives and goals of a "Decade of Ocean Resource and Management". This may prove to be difficult, because it is still operating with five positions on the Committee remaining to be filled for this term and as of next June six additional vacancies must be filled.

Similarly, a five year plan for ocean pollution Research & Development and monitoring under aegis of the Office of Marine Pollution Assessment has been promulgated, with a target of $1.1 million for University grants and contracts for FY '80. It is now almost six months into this fiscal year and the admonishment is made in the University Affairs Letter to watch for announcements in the Federal Register and in the Scientific

media for announcements describing the areas of Research & Development interest and how to request a guidance package for preparing proposals. Such a time schedule is indicative of a policy of proceeding with "all due deliberate haste";and cannot be expected to yield significant results in any reasonable period of time, nor of any appreciable magnitude with the level of funding involved.

Another example of the manner in which OMPAS operates is with regard to a Workshop on Tar Balls on Texas beaches which convened in Austin, Texas in the middle of June. Participants from other pertinent Federal and Governmental agencies including the Coast Guard were invited, as well as persons from in the Gulf Coast academic community who were known to be active in this area of research. A follow-up meeting was scheduled for October which never materialized. A report of the initial meeting was mailed to participants seven months later, together with the indication that a second Tar Ball Workshop is in the planning stages, and soliciting ideas for it.

In the meantime, by the end of the summer the tar from IXTOC 1 Well reached the Texas beaches. The Coast Guard contacted me several times for suggestions and information from both the New Orleans and Washington, D.C. Offices. On the other hand OMPAS made no effort to utilize the expertise of the local academicans who are authorities on this subject, which they had tacitly acknowledged by inviting them to attend, at their own expense, the June meeting. Instead, they imported scientists located in the Carolinas and engaged in contractual relations with them for extended studies to be conducted along the Gulf Coast beaches. What more remains to be added at this point? Again limitations of time preclude additional examples. In fact, my time is rapidly running out and will therefore conclude with a quotation by the first administrator of NOAA, Dr. Robert M. White, appearing

in the October-November 1979 issue of the Marine Technology Society Journal:

> "As we enter the decade of the 80's, however, we must choose anew. It is clear that while there are important incremental gains to be achieved, major departures will require an institutional metamorphosis. We seem to be paralyzed however by contending forces. We are unable to agree on what to do. We have in the past year alone had proposals of all kinds: Combine ocean and atmospheric programs with polar and possibly space programs, said NACOA. Expand NOAA and place it in a new Department of Natural Resources, was the President's idea. Keep the faith, follow the Stratton Commission recommendations and establish an independent agency is the sentiment in some parts of the Congress. And the Commerce Department says - Leave things alone - they are going pretty well - We can handle it.
>
> Somehow we must break this stalemate. We need to choose. But we have failed to ask the essential question, "What do we wish to achieve?".

The answer to Dr. White's question can only come from future actions made in good faith by those in NOAA with authority to determine major policy. This could then permit achieving in a tangible and significant manner those important objectives and goals which here-to-for have resulted at best in essentially receiving only lip-service. This recommendation is not made in rancor, nor despair, but with the spirit of offering constructive criticism, by one who was a member of the Commission acting as a catalyst, and to a certain extent as a mid-wife, to the the birth of NOAA about a decade ago.

COMMENTS BY

NEWTON A. LIEURANCE *

At the outset let me state that I support a unified approach in any legislation dealing with the oceans and the atmosphere which establishes one central lead agency to manage and develop the Federal resources dealing with the air and water around us.

I am a very strong believer that only the Federal Government can effectively manage, develop and indeed operate nationally specialized oceanographic and meteogrological operational services on a national basis for broad segments of industry. In particular for those industries of vital import to the economy and defense of our nation. Additionally, I believe that these specialized services that are vital to the safe conduct of an industry, i.e. the national transportation system [air and surface, (sea and land)] should be financed from the general tax fund since these transportation systems are operated in the public interest and benefit all the people and not just a chosen few.

Before I become more specific let me make a few more general remarks concerning the development of the "Organic Act" for NOAA. There is a need for specific and detailed legislation for NOAA beinging together all its authority under a single piece of legislation.

It is my judgement, based on a review of the proposed legislation (HR5347), that it is too broad and permissive as it relates to meteorological and oceanographic services in particular those of a specialized nature. Further, it appears to be too heavily weighted on the R and D, oceanic and space areas with too little emphasis on the atmospheric side. I can find very little in HR5347 that was contained in the Organic Act of the Old Weather Bureau and carried forward in the executive orders establishing ESSA and NOAA. Also special authority for certain programs of the National Weather Service contained in the legislative authority of other agencies, i.e. FAA, DOA and others seem to be missing except in very broad and permissive language as in HR5347 Title III - Functions and Transfers-General Functions of the Administration. This language may be satisfactory if the legislative authority of other agencies e.g. FAA, DOA, NASA, DOD, etc. in the atmospheric and oceanographic areas was specifically deleted or transfered to the New "Organic Act" of NOAA.

Since my career (45 years), except for the last few years, has been in the field of weather and more specifically that associated with aviation, I will confine my further remarks to that area.

The civil weather service was established on February 4, 1870, under the Army Signal Corp. By Act of Congress dated July 4, 1891, it was transfered to the Department of Agriculture. By Executive Order of 1912 the Weather Bureau was given the responsibility for Ocean Meteorology as a transfer from the Navy. The Air Commerce Act (Sec 603) of 1926 further expanded the Weather Bureau responsibility to include service for aviation. In 1930 by mutual agreement between the Department of Agriculture, the Bureau of Air Commerce assumed the responsibility for providing the Weather Bureau with long line communications for the collection and distribution of meteorological data.

Reorganization Plan No. 4 of 1940 transferred the Weather Bureau to the Department of Commerce. Reorganization Plan No. 2 of 1965 established the Environmental Science Services Administration (ESSA). The establishing of ESSA began the down grading of the Weather Bureau to an operating division with all the responsibilities of the Chief of the Weather Bureau under the Organic Act of 1890 transferred to the Administrator of ESSA.

Reorganization Plan No. 4 of 1970 established NOAA with further de-emphasis of the Central Roll of the Weather Bureau (NWS) in the field of meteorology and the atmospheric sciences in favor of more exotic R and D programs associated with the oceans, space, computer technology air-sea interface, endangered species, world wide weather systems design and the like.

From this brief summary it seems obvious to me that in drafting an Organic Act for NOAA, due note should be taken of the importance of weather service and the central roll of the Federal agency responsible therefore. It seems most important that those areas of Commerce that are weather sensitive and conducted in the public interest should be specifically spelled out in the Legislation.

I think it important that serious thought be given to restoring the provisions of the early Weather Bureau Organic Act and its amendments to the Director of the National Weather Service. It seems to me that the Director of the NWS should be given specific legislative authority to carry out a public and specialized Civil Weather Service. This authority should not be delegated but assigned directly from Congress to the Director. The NWS should be autonomous in the field of meteorology dealing with clouds and weather and all that this connotates as related to the general public and specialized services in support of man's many and varied activites. This should include the direction of the meteorological R and D both applied and basic with the necessary resources to maintain a viable and effective National Weather Service.

In closing I wish to state that the Weather Service of the National Weather Service has, in my judgement, deteriorated over the years because of the many reorganizations causing a change in direction away from a public service oriented agency to one concerned primarily with internal matters. The service has lost its most important one-to-one relationship with the public. The objective now seems to be to build an impregnable wall around the governments computerized collection, distribution and processing system forcing those external users needing the data to buy the material from a contractor in the private sector.

Finally, I believe that Federal policy pertaining to the National Weather Services should be contained and spelled out specifically in the Organic Act.

Thank you very much.

* The views and opinions in this paper are my own and do not necessarily represent those of my employer, The Alden Electronics and Equipment Company.

Comments on Research and Development Within NOAA and NOAA Organic Legislation

James I. Jones, Mississippi-Alabama Sea Grant Consortium

NOAA presently has a major research and development responsibility for service and resource management. These responsibilities should be widely expanded, making NOAA the primary, if not sole, civilian agency to provide the necessary services for proper resource evaluation and management in areas of the coastal zone, continental shelf, open ocean and atmosphere. If this were accomplished the program effectiveness and economies which would be realized nationally would surpass current R and D effectiveness in these areas.

Research and Development activities should be consolidated within particular program areas. They should not be consolidated to the point that both research and development activities would become the obligation of the same individuals of groups within a particular activity. The research scientist should, in most instances not be an integral part of the development activity leading to the utilization or application of his discovery or invention. The research function need remain generally separated from the development/application phase, but with ample opportunity for close interaction at specific appropriate points during each of these phases. The researcher need remain primarily the discoverer/innovator; the developer needs specific knowledge and skills for application of discovery and technology transfer activities. In some cases these functions may be combined, but generally there should be a distinct role and separation of activities between the actual research on a program/problem and the application and transfer of that research into useful and easily applied technology.

The question of balance between basic and applied research within NOAA activities cannot be answered in a general sense, but requires that specified needs and problems be identified. Applied research should have a significant priority in many cases in that it will fulfill immediate and well perceived, documented needs. Basic research must be a continuing effort, well funded, with fairly non-specific "goals", to allow the basic researcher maximum opportunity to use his creative ability, imagination and technical expertise to the fullest extent, with minimum interference, and with little or no requirement that he identify immediate or potential "application" of his findings. This presumes that the findings of the basic researcher will find ultimate application, and provides the type of research climate within which the highest levels of creativity may be developed. This "balance" between applied and basic research will change from time to time, depending upon critical national needs, available fiscal resources, and available scientific manpower.

The primary research activities for NOAA should be developed from the vast academic research resources available from the United States' research and academic institutions. Only highly applied, very specific, goal-oriented research activities should be developed and conducted "in-house". All NOAA labs should become specific "goal-oriented" organizations, utilizing a team research approach for applied solutions to identified problems. All basic research should be conducted externally, supported by NOAA at research institutions, both public and private throughout the nation. There is a major role for the private research sector, since many basic research problems lie beyond the scope and ability of a single academic institution or combination of institutions. The ability of the private research sector to respond uniquely and rapidly to basic research problems, at a more rapid rate than is possible within the academic community need be recognized, and this ability used as required. Incentives to increase the interest and reward to the private sector need be increased to provide better access by Sea Grant to their unique capabilities.

(remarks specific to the National Sea Grant Program)

The National Sea Grant Program provides a unique opportunity for Federal, State and local interaction within the areas of marine research, education and public service. Although the concept has been borrowed from the Land Grant College system, it has no counterpart within the marine area. Perhaps the greatest asset and service which Sea Grant provides is the opportunity to build research, public service and educational programs from the "bottom-up", with the primary emphasis being provided through identification and addressing of local or regional needs. This philosophy of "grass-roots" development of programs, based upon identified and documented public need within a particular geographic area or region provides a powerful tool for public service, research and educational activities for the general good - local, regional and national. All too frequently the perception of local needs, as seen by the "Washington Bureaucrat" or the "Ivory Tower" academic differs radically from that of the local population when addressing problems of local concern and interest. This is not to say that the "locals" always have the correct view, but it does appear that in many cases the closer the individual is to the actual problem, the better his perception of it. This is certainly the case in many marine resource development situations, where the local fisherman, processor or marketer has a very real understanding of the problems besetting his vocation, since he lives with them daily. Thus, the ability of Sea Grant to receive this level of input, primarily through its Marine Advisory Service mechanism, is an extremely valuable and unique capability. Likewise, the ability to transfer available technology from the scientific area to practical application is a function of the Marine Advisory Service. Without this mechanism of transferring appropriate technology back to the user community there would be little overall practical effect produced through Sea Grant research efforts. These opportunities for "input" and "output", both from and to the concerned public must be preserved and strengthened. Equally important is the ability of individual Sea Grant programs to identify, utilize and otherwise interact with the scientific and academic community within

its operational area. The "problem identification" function referred to previously is part of a process of matching a particular problem with a chosen investigator or team of investigators, to arrive at a solution to that problem. This role is generally shared between the Marine Advisory Service programs and the Director of a Sea Grant Program, with the major "connecting" responsibility varying among individual programs. The Director and his staff will generally perform the primary role in developing interinstitutional and interdisciplinary research team efforts to address specified problems. Indeed, these efforts frequently will involve more than one Sea Grant Program, recognizing the fact that while Sea Grant Programs have specific geographic/political limitations, the natural systems which are studied have no general relationship to these artificial boundaries. In many cases the solutions to identified problems is a better or more precise understanding of natural systems or processes. This is the reason that interstate and regional research efforts are becoming more common within Sea Grant. The ability of Sea Grant to identify, and then draw upon the appropriate researchers and educators within the broad areas of available academia is a fundamental requisite to the success of the Sea Grant effort. No other National marine program has this unique capability so well developed as that which presently exists within the Sea Grant Program. Thus, the existing capabilities of Sea Grant, which are unique in the National marine program arena, provide the mechanisms for problem identification on any scale from local to national, the ability to match a particular problem with an appropriate researcher or team of researchers, and finally to take the results of the research translated into readily useable and easily understood language back to the user community. This mechanism provides answers to the decision-makers and those with the "need to know" within reasonably adequate time frames, whether at the local, state, regional or national level. The capability of this "input-output" mechanism has been proven nationally throughout the Sea Grant network, and is generally recognized as the most effective applied research activity in the public marine sphere of activities.

While the primary emphasis within Sea Grant has been that of applied research, problem identification and solution, and technology transfer; an additional function is that of Marine Education, or to use the broader term, the "raising of the marine consciousness" of the public. This occurs by using both traditional and innovative educational activities conducted through established schools, ranging from Kindergarten through college Graduate Studies, as well as for the general public through public service outreach programs. This must be considered a highly important role for Sea Grant, because it will be primarily through these activities that the American public will develop a "marine consciousness" which it now generally lacks. The importance to the well-being of the country, whether it be measured in economic terms, aesthetic values, or quality of life, all require a considerably more advanced and sophisticated understanding of the unique and vitally important role played by those areas included within the Coastal Zone and Continental Shelf. Individuals who have developed this "marine consciousness" will have a better understanding of the myriad environmental vs. economic

trade-offs and other decisions which they will have a major voice in throughout their lives. The better their understanding of the importance of these particular resource areas, the better will be their decisions determining the levels of utilization, conservation or preservation of them.

Finally, Sea Grant should not play an advocacy role in any of its activities. As a steward of public monies, providing services for the public need and good, Sea Grant need develop and disseminate objective, accurate information for its constituency, and additionally provide the necessary links between research need identification and the researcher, with a functional mechanism to bring appropriate research results back to the user community. These defined roles require both objectivity and a high level of integrity to develop the required public confidence necessary for optimum program effectiveness. Advocacy roles would necessarily be counter-productive in this regard.

The broad scope and effectiveness of the programs being conducted by Sea Grant document the success of the Sea Grant concept. This effort could be expanded greatly, and relatively easily since all necessary mechanisms are in place and functional which provide the primary link between identified research needs, the university or other researcher or educator, and to perform the technology transfer of research results back to the user community. I believe that the Sea Grant Program has the capability to expand to whatever level may be required of it to meet any defined level of marine related public need. A word of caution is appropriate, however. Expansion of Sea Grant to meet major Federal research and education marine needs through its university contacts much beyond its present scope could be at the expense of what I consider to be the very essence of Sea Grant - the ability to recognize and address local and regional needs, with their priority equal to or higher than national needs. This "grass roots", or "bottom-up" philosophy and ability could well be lost if the program were to become a major conduit for Federal agency research programs with academia, primarily to meet national needs. I believe, however, that with careful attention to the present philosophies and mechanisms, guaranteeing that they not be lost, that Sea Grant could effectively function in both roles, thus serving a national need in development of marine research activities throughout the Sea Grant network, while maintaining the current and fundamental philosophy and practice of identifying and addressing local and regional needs as a major priority. If this dual role should be required of Sea Grant, a clear definition of the dichotomy between these functions must be clearly elucidated in any proposed legislation.

In closing, I want to state that the opinions which I have expressed here are solely my own, although I would hope that they coincide at least generally with the majority of my fellow Sea Grant Directors and also my colleagues from the National Office of Sea Grant. It would be highly presumptive of me, and a rare situation indeed, however, if my personal views on these topics could reasonably satisfy as disparate a group as I have just defined. It is probably true, as it has been written, that an individual's belief in his ability

to objectively speak for a much larger group is directly proportional to his ego, and inversely proportional to his grasp of the specific subject matter addressed.

I believe that NOAA should play the lead national role in the development of non-military ocean technology. The logic of this to me is overwhelming. It should also be NOAA's responsibility to see that all its research programs strive to bring the research products to application. This may be easily done in the applied research area, where specific useful products are mandated. The mechanisms for this technology transfer exist in the Sea Grant Program Marine Advisory Services. Within the technical ocean community the technology transfer would be the role of an as yet non-existent and undefined section of NOAA, charged with the primary responsibility for this activity. I feel that it should be an absolute obligation of NOAA to make every effort to transfer technology from its research and development activities to application. If this is <u>not</u> accomplished, from many viewpoints the research might as well not have been done at all. Mechanisms to address this particular subject need be included in any proposed NOAA organic legislation.

Statement for the panel on NOAA research activities at the workshop on NOAA organic legislation, sponsored by the Coastal States Organization.

Washington DC, March 13 1980

by

Prof. Claes G. H. Rooth, Univ of Miami.

I come before you with a background of involvement in University-NOAA cooperation both at my main place of employment where I am a fellow of the recently organized Coperative Institute for Marine and Atmospheric Science - a joint undertaking between the local NOAA laboratories and the University of Miami- and as a current visiting scientist in the Geophysical Fluid Dynamics Program at Princeton University. The latter program is a cooperative effort between the university and NOOA's Geophysical Fluid Dynamics laboratory. The opinions expressed herein are strictly personal; they have been neither discussed, nor cleared by any representatives of these organizations.

The broad questions of quality and appropriateness of NOAA research efforts cannot be adequately adressed in a few minutes. An in depth review was undertaken by the NAS a couple of years ago at the request of the NOAA administration. In spite of some anguish being expressed around the organization about some aspects of the report, it must have been appreciated, since the chairman of the review committee was soon thereafter hired as assistant administrator for research. NOAA has also been responsive to the concern expressed in the NAS report regarding the mutual need for stronger interaction with the academic and private research community by expanding and revitalizing various forms of cooperative activities. Indeed, I understand that the Administrator

of NOAA has during the past year instructed the laboratory directors to make every effort to meet expanded research responsibilities with minimal internal staff expansion through increased reliance on cooperative activities and contract arrangements. It remains to be seen how this will work out, in particular with laboratories with marginal base funding and resulting heavy dependence on reimbursible projects in support of the missions of other agencies such as DOE or EPA.

The research into physical processes within the oceans carried out within NOAA is in a rather different situation from both the related meteorological activities, and from the fisheries research work, in that substantial overlap occurs with interests of other agencies. Large scale ocean dynamics, and particularly the processes which act to modify the sea surface temperature, are essential elements in climate dynamics. Their study is essential to NOAA's responsibility to develop improved long range weather forecasting capability, and to seek understanding of climate variability, but they are also of central concern to the Navy and its operational requirements both above and below the sea surface. Coastal processes, where an excellent tradition in storm surge research exists,e.g., are also the legitimate concern of the Coast Guard. While I fully agree with the thrust of the draft legislation towards avoidance of duplication in management responsibility, and of overlapping and often conflicting regulatory power, I must - at the risk of seeming self serving - register strong concern with regulations aimed at limiting overlap between agencies in research and/or research support. The process of scientific discovery does not respect organization charts, and meaningful cooperation in avoidance of costly duplication of effort in specific studies is more likely to be achieved between agencies if each of them acts from a secure position, without overriding concerns for turf protection.

Adressing now the question of how the continued health and propriety of NOAA environmental research can be best promoted within the framework of the proposed NOAA organic legislation, I find myself very much in tune with the conclusions reached in a different context by the National Commission on University Research, as reported in the current issue of Science. That is, I believe that such legislation must be strong on principle, and go easy on detail. I am concerned, for instance, with the specific mention of research on sound propagation in the oceans as a NOAA mission - not because I disagree with the importance of the topic, but because it seems that by implication other things not specifically mentioned might be excluded, and because it seems to me like an attempt to carve out a bit of Navy turf. Like any monopoly, protected research areas in an agency are likely to go stale. I believe that while specific areas of administrative, service, and regulatory responsibility can reasonably be spelled out, congress should show confidence in the intelligent self interest of agency heads to use their limited research resources in ways which they believe best enhance their mission. Of principles, I would enunciate two, viz:

I. A clear responsibility for the agency in meeting its research needs to draw on available talent in the academic and industrial sector, as well as to cooperate, where feasible, with other federal or state agencies.

II. A strict limit on internal laboratory expansions based on soft money (reimbursible work).

These principles are mutually reinforcing, since they point the way towards handling special projects through task forces of national expertise, particularly if automatic authority is given to use income from reimbursible projects to support contract work or visiting scientists.

REMARKS OF CONGRESSMAN ROBERT S. WALKER

SCIENTIFIC RESEARCH -- THE KEY TO EFFECTIVE MANAGEMENT

LADIES AND GENTLEMEN IT IS INDEED A PLEASURE TO BE HERE WITH YOU TODAY TO REPRESENT THE NATURAL RESOURCES AND ENVIRONMENT SUBCOMMITTEE AND TO SHARE WITH YOU MY VIEW OF THE NEED FOR CONTINUING SCIENTIFIC RESEARCH IN THE OCEANS.

ONE OF THE RECURRING THEMES OF OUR SUBCOMMITTEE IN DEALING WITH THE AGENCIES UNDER OUR JURISDICITON, INCLUDING NOAA, THE ENVIRONMENTAL PROTECTION AGENCY, THE CORPS OF ENGINEERS, AND THE UNITED STATES DEPARTMENT OF ENERGY, IS THE ABSOLUTE NECESSITY OF AN ADEQUATE SCIENTIFIC DATA BASE AS A PREREQUISITE TO ANY REGULATORY OR MANAGEMENT ACTION. IT IS THE BELIEF OF OUR SUBCOMMITTEE THAT ALL TOO FREQUENTLY IN THE PAST AGENCIES HAVE ACTED TO ADOPT REGULATIONS OR MANAGEMENT SCHEMES BEFORE THEY HAVE DONE NECESSARY PRELIMINARY RESEARCH TO VALIDATE THEIR DATA BASE. THE INEVITABLE RESULTS OF SUCH A RUSH TO REGULATION HAS BEEN DISSATISFACTION IN THE USER COMMUNITY, RESISTANCE TO POOR REGULATION, AND, INEVITABLY, A REQUIREMENT THAT ADDITIONAL RESEARCH BE UNDERTAKEN IN ORDER TO JUSTIFY REVISED REGULATIONS.

RECENT YEARS HAVE BROUGHT A SIGNIFICANT INCREASE IN PUBLIC AWARENESS OF ENVIRONMENTAL PROBLEMS ON THE LAND, IN THE AIR AND IN THE SEA. WE HAVE SEEN CONGRESS, AS WELL AS STATE AND LOCAL GOVERNMENTS, ATTEMPTING TO DEAL WITH POLLUTANTS IN MANY WAYS. WE NOW HAVE A BROAD UMBRELLA OF FEDERAL ENVIRONMENTAL LAW AIMED AT PROTECTING MAN FROM THE ENVIRONMENTAL RAVAGES BROUGHT ABOUT BY OUR EVER INCREASING INDUSTRIALIZATION. TODAY, WE IN THE CONGRESS ARE BEING FACED WITH DIFFICULT CHOICES OF BALANCING THE COMPETING INTERESTS OF ENVIRONMENTAL PROTECTION ANDENERGY PRODUCTION. THE ENERGY CRISIS THAT AMERICA FACES TODAY HAS BROAD LONG-TERM RAMIFICATIONS. AS AMERICA WEANS ITSELF FROM OUR DEPENDENCE ON OPEC OIL, WE WILL FIND THAT OUR INCREASED RELIANCE ON DOMESTIC COAL WILL RESULT IN ADDITIONAL POLLUTANTS BEING ADDED TO THE AIR. STREAM AND RIVER

POLLUTION WILL INCREASE AS THE RESULT OF MINING AND TRANSPORTATION EFFORTS AND EVENTUAL DISPOSAL PROBLEMS OF SUCH THINGS AS ASH AND SCRUBBER SLUDGE. MANY OF THESE POLLUTANTS WILL HAVE DIRECT OR INDIRECT IMPACT ON THE MARINE ENVIRONMENT. FURTHER, AS LONG AS ANY OF OUR PETROLEUM PRODUCTS ARE SHIPPED BY SEA, WE WILL CONTINUE TO FACE AN EVER PRESENT DANGER OF SHIPPING ACCIDENTS WHICH LEAD TO POLLUTION FROM SPILLED OIL.

STARTING MORE THAT TWO YEARS AGO IN 1977, THE SUBCOMMITTEE ON NATURAL RESOURCES AND ENVIRONMENT HAS FREQUENTLY INDICATED THAT IT IS OUR BELIEF THAT IT IS ESSENTIAL THAT WE UNDERTAKE A COMPREHENSIVE PROGRAM OF MARINE ENVIRONMENTAL MONITORING IN ORDER TO DEVELOP AND MAINTAIN AN ADEQUATE SCIENTIFIC DATA BASE IN ORDER TO MEASURE FUTURE DEVIATIONS FROM THE BASE LINE, AND ALSO, IN ORDER TO MAKE SCIENTIFICALLY DEFENSIBLE ANALYSIS OF POTENTIAL FUTURE RISKS.

CURRENTLY, THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY IS CONTINUING DEVELOPMENT ON A MONITORING SYSTEM KNOWN AS MUSSEL WATCH WHICH EPA HOPES WILL BE A MAJOR TOOL IN CARRYING OUT THEIR LEAD-AGENCY RESPONSIBILITY FOR DEFINING THE IMPACTS OF PETROLEUM AND OCEAN-DUMPING ACTIVITIES ON COASTAL ECOSYSTEMS.

AS MANY OF YOU KNOW, FOR AT LEAST 15 YEARS, THE SCIENTIFIC COMMUNITY HAS MADE NUMEROUS EFFORTS TO DEVELOP LOCAL, REGIONAL, AND EVEN NATIONAL MONITORING PROGRAMS FOR POLLUTANTS. THOSE OF US WHO HAVE BEEN INVOLVED IN OVERSEEING THIS EFFORT HAVE BEEN WELL AWARE OF THE MANY FRUSTRATIONS THAT HAVE BEEN EXPERIENCED IN ATTEMPTING TO DESIGN AND IMPLEMENT BROAD MONITORING SYSTEMS. THERE IS NO DOUBT THAT DIRECT CHEMICAL ANALYSIS OF POLLUTANTS IN SEA WATER IS NOT ONLY VERY DIFFICULT, BUT EXTREMELY COSTLY. FURTHER, POLLUTANTS RAPIDLY BECOME DILUTED TO CONCENTRATIONS THAT MAKE IT ALL BUT IMPOSSIBLE TO RENDER ACCURATE RESULTS.

IN AN ATTEMPT TO DEVELOP A UNIFORM PROGRAM, EPA HAS ADOPTED MARINE BIVALVES, KNOWN AS MUSSELS, AND HAS PLACED THEM ON WATCH AROUND OUR COASTLINES AS POLLUTANT MONITORING STATIONS. WHILE THE ABSOLUTE SCIENTIFIC ACCURACY OF EPA'S STUDIES REMAINS OPEN TO QUESTION, THERE IS NO DOUBT THAT THESE MUSSELS ABSORB POLLUTANTS FROM THEIR ENVIRONMENT AND CONCENTRATE IT WITHIN THE SOFT FLESH OF THEIR OWN BODIES, SO THAT WHEN THEY ARE HARVESTED AND TESTED THE CONCENTRATIONS ARE MANY TIMES WHAT THEY WOULD BE IN THE SEA WATER AND ARE NOT ONLY EASIER TO DETECT BUT MUCH MORE READILY MEASURED. FURTHER, THE PROGRAM SHOWS GREAT PROMISE IN THAT THESE MUSSELS ARE FOUND NEARLY WORLD-WIDE. SUCH DISTRIBUTION MEANS THAT MARINE ENVIRONMENTAL MONITORING CARRIED ON THROUGH MUSSEL WATCH MAY EVENTUALLY BE EXPANDED TO COVER MOST OF THE OCEANS OF THE WORLD.

I'M PLEASED TO REPORT THAT EPA HAS BEEN THE WORLD LEADER IN THIS PROGRAM. IT HAS ATTRACTED SIGNIFICANT ATTENTION THROUGHOUT THE WORLD. COUNTRIES IN SOUTH AMERICA AND EUROPE, THE SOVIET UNION AND COUNTRIES SURROUNDING THE MEDITERRANEAN SEA HAVE EXPRESSED THEIR INTENT TO ESTABLISH SIMILAR SYSTEMS. THIS INTEREST HAS BEEN EXPRESSED THROUGH FORMAL NEGOTIATIONS, THROUGH THE UNITED NATIONS IN THE INTERNATIONAL COMMITTEE FOR EXPLORATION OF THE SEAS, AS WELL AS THROUGH THE INFORMAL NETWORK OF MARINE SCIENTISTS THROUGHOUT THE WORLD. WHILE THIS IS STILL A PRELIMINARY PROTOTYPE MARINE MONITORING SYSTEM, IT IS RELATIVELY INEXPENSIVE AND FAIRLY ACCURATE. WE UNDERSTAND THAT ADDITIONAL RESEARCH WILL BE NECESSARY TO FINALLY DETERMINE IF, IN FACT, THIS IS THE METHODOLOGY THAT COULD BE, OR SHOULD BE, DEPLOYED FOR MARINE MONITORING IN THE UNITED STATES, AND AROUND THE WORLD.

THE IMPORTANT PART OF THIS EFFORT IS THAT IT WILL ESTABLISH A CRUCIAL SCIENTIFIC BASELINE WHICH WILL ALLOW US TO THEN DETERMINE WHAT EFFECT MAN'S FUTURE ACTIONS WILL HAVE ON THE MARINE ENVIRONMENT. WE ON THE COMMITTEE BELIEVE THAT ONE OF THE GREATEST FAILINGS IN OUR ATTEMPTS TO CLEAN-UP THE GREAT MARITIME POLLUTION DISASTERS OF THE RECENT DECADE INCLUDING

TORREY CANYON, ARGO MERCHANT OR EVEN THE RECENT AMOCO CADIZ, LIES NOT SO MUCH IN OUR INABILITY TO TOTALLY CLEAN ALL OF THE POLLUTANT FROM THE SEA, BUT MORE IMPORTANTLY, FROM OUR INABILITY TO MEASURE THE DIFFERENCE BETWEEN THE CONDITION BEFORE THE ACCIDENT, AND CONDITIONS EXISTING IMMEDIATELY AFTER THE ACCIDENT, AND FOLLOWING CLEAN-UP. IN FACT, TODAY IT IS VIRTUALLY IMPOSSIBLE TO ADEQUATELY MANAGE THE OCEANS DUE TO OUR LACK OF COMPREHENSIVE BASE DATA FROM WHICH TO ESTABLISH MANAGEMENT REGULATIONS.

I URGE YOU TODAY TO GIVE YOUR ATTENTION TO THIS PROBLEM.

FINALLY, LET ME ADD A FEW PERSONAL THOUGHTS ABOUT NOAA'S R&D FUTURE. WE ON THE HOUSE SCIENCE COMMITTEE SHARE A SPECIAL INTEREST IN MAINTAINING AMERICA'S EDGE IN SCIENCE AND TECHNOLOGY. WE BELIEVE THAT IT IS IMPORTANT THAT GOVERNMENT SCIENCE NOT BECOME TOO CLOSELY FOCUSED OR TOO RIGIDLY BOUND WITHIN THE NARROW CONSTRAINTS OF AGENCY PROGRAMS.

WE DO NOT EXPECT TO SEE FRAGMENTED PROGRAMS, NOR DO WE WANT TO SEE ANY DEGRADATION OF RESEARCH NECESSARY TO AGENCY OPERATIONS. BUT, JUST AS WE HAVE FIRST URGED, AND LATER MANDATED, THAT EPA DEVOTE NOT LESS THAN FIFTEEN PERCENT OF THEIR TOTAL RESEARCH EFFORT TO LONG-TERM RESEARCH, WE WOULD HOPE TO SEE NOAA TAKE A BROAD AND LONG-TERM APPROACH TO RESEARCH.

I URGE YOU TO REMEMBER THAT NOAA IS THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION. ANY ATTEMPT TO FOCUS A DISPROPORTIONATE SHARE OF OUR RESOURCES ON EITHER THE OCEANS OR THE ATMOSPHERE WILL INEVITABLY MEAN THAT WE WILL FAIL TO MEET THE AGENCY MANDATE IN THE OTHER.

IN CONCLUSION, LET ME AGAIN ASSURE YOU THAT THERE IS NO DOUBT THAT SCIENTIFIC RESEARCH IS THE KEY TO EFFECTIVE MANAGEMENT OF THE OCEANS. IT IS THE KEY WHICH WILL UNLOCK THE TREASURES OF THE SEAS AND ALLOW US TO MAKE RATIONAL POLICY DECISIONS WHICH WILL AFFECT THE QUALITY OF THE ENVIRONMENT WE WILL PASS ON TO UNBORN GENERATIONS.

Remarks of Robert D. Abrams, President, N.M.E.A.
(Also Coordinator of Environmental Education, Great Neck Public Schools, Great Neck, New York, 11020)

One of my learned colleagues on this panel stated that "the American public not only is ignorant of the oceans but also apathetic." White I may agree with his perception of the public's ignorance, I disagree with the idea of public apathy. One has only to note the great popularity of television programs such as the National Geographic specials, the Cousteau series and realize there is great interest about the seas. This too is reflected in the many "real life" sea stories in popular magazines.

In a study recently finished we looked into the reading interests of a segment of the adult population on Long Island. Serviced by a large circulation daily newspaper we found the group read the headlines and either a portion or the complete articles on issues related to local waters and the Atlantic shelf to a significant degree over other categories of news stories. In a similar analysis with a group in Middle America , they stayed with ocean stories even to a greater degree. This should dispel the "apathy" issue.

The topic of our panel, Marine and Atmospheric Services, needs to be somewhat more categorized. If you asked the public how the Department of Commerce is involved

with these services, I'll bet you would get vague references to "big business" and no concept that any of these services are a part of this Department.

With NOAA there is some improvement. Weather radios are becoming increasingly popular and there is a constant reminder on these broadcasts that NOAA is producing them. Teachers know NOAA through a set of excellent and exciting films.

Within NOAA we have the National Sea Grant Program. This agency has a superb record of supporting basic and field marine research at higher institutions. In the past few years a small part of their small annual budget has also gone to educational research on the elementary and secondary school levels. However small the monetary expenditure has been, there is a ripple effect that goes far beyond normal expectations because Sea Grant has chosen a number of educators who are leaders in curriculum innovation. In producing marine programs these leaders, in turn, have made an impact on a much larger number of classroom teachers. The efforts of these past few years are just beginning to pay, in infusing this nation's basic curricula with marine topics. This is particularly true this past year because of the dissemination efforts of Dr. Barbara Spector of the national office.

But let's go to a specific example of Sea Grant's impact. In the past, the letters CZM was a cryptographic anomoly. Yet coastal zone management has become increas-

ingly important to the ocean states. Last year, I attended a meeting at New York's State Department. The people in charge wanted to have a teacher's workshop on coastal zone management issues but had no funds for this workshop. The state marine education association offered to pick up the materials cost but this was only a small part of the funds needed. New York Sea Grant, under the direction of Dr. Donald Squires, came through however. They found the funds for the workshop and now we will be able to train many key educators in the state who will then conduct workshops in either their own school districts or in regional areas of the state. Some of them will also produce adult education programs. Now the general population can also become aware of the meaning of CZM.

From these comments I am sure you understand that this is n not so subtle plea for continued support for marine educational programs with increased funding. From my vantage point I think the best way of heightening the public's interest in marine affairs is through the public schools. Not only is the effect immediate, but it is lasting.

In closing, I should like to say that the National Marine Education Association and its state chapters are advocates of getting the marine world into the school world. We are information spreaders, and we invite you, the maritime leaders, to help us disseminate your knowledge to this nation's teachers and children.

A Statement

to the Marine and Atmospheric Services
Panel of the Workshop on the Role of the
NOAA Organic Act

Sponsored by
The Coastal States Organization
Washington, D.C.

March 13, 1980

by

Paul Janota
ENVIRONMENTAL RESEARCH & TECHNOLOGY, INC.

Thank you Mr. Chairman, members of the panel, ladies and gentlemen. My remarks will be brief and I mean to focus on the issue of delivery of products and services to users of meteorological, oceanographic, and hydrological information and how this delivery function should be shared between the NOAA and private industry. My points are: that there is an exciting and growing market for these services; that services related to public safety are primarily in the federal domain, and those related to private commerce are not; that private capabilities to provide needed services are becoming abundant; that the long term opportunity to exploit these capabilities will be impacted significantly by the final form of the NOAA Organic Act; and that I believe a harmonious relationship can be fostered if the private services sector is properly represented in the final legislation.

Unquestionably, there is a market for meteorological, climatological, oceanographic, and hydrological data, analyses and predictions on a routine basis. The popularity of the T-V weatherman is a pervasive example of the market for such information but not representative of the image that our industry seeks. For example, we can be much more quantitative regarding cost benefits. If the efficiency of American merchant shipping could be improved just five percent through better use of weather, wave, current and tidal data, the annual savings would approach a half billion dollars in operating and fuel costs. The revenue to private weather companies from these services alone could approach 25-50 million annually as a result. This specific market is only a fraction of this size today, although further growth should be stimulated by rising fuel and labor costs. Other examples in transportation, offshore oil and mining, agriculture and recreation can be just as telling.

Furthermore, the destructive natural forces of wind, rain and tide now clash routinely with demographic forces; thus, the general public, regardless of economic stratum, needs the best advisory services available to minimize the enormous potential losses due to natural disasters.

In effect, the market divides naturally along these lines. Preservation of public safety demands timely delivery of spatially and temporally sporadic, advisories to a general public who perceives the service as free in situations where there is an enormous implied liability in case of error.

Private businesses, on the other hand, demand economic justification for environmental services; clients are identified through intensive marketing; prices should be set by competitive economic principles; and the liability issue is settled as part of contract negotiations.

The fact is that NOAA, through such operating arms as the National Weather Service, and Environmental Data Information Service are either raising the level of specificity of their services, especially in areas

like agriculture, or have created the image of providing such services but do not have the resources to actually carry out the tasks thus implied. One of the effects of this is to weaken the resolve of the private sector to make the business investments necessary to exploit our actual capabilities. Cooperative agencies such as the FAA also make some of their weather services available to the public with the same effect.

Private meteorology grew as a result of the abundance of post-WWII personnel with training and experience, and with the availability of cheap data from the many local weather bureau offices that were springing up as the airlines expanded. Early private meteorologists were highly oriented toward forensic and consulting services (e.g. agriculture). Airlines established private enroute and terminal forecasting services; in the past 15 years or so, private forecasting for offshore exploration and production and weather routing of commercial shipping has reached respectable proportions. And we must not forget the radio and T-V weathermen and women who have flourished in the last 10 years. Certain specialized industries were fostered by regulatory forces (e.g. the Clean Air Act); the company that employs me grew from 3 to 800 people in 10 years and the majority of its sales are environmentally related.

The growth in university programs is turning out large numbers of new young meteorologists and oceanographers available for career development. We are now in an era of public data transmission networks, satellite communication, and cheap, extremely capable computers. The private sector can respond much more rapidly to technological advances than can the public sector.

Energy, the environment, agriculture, transportation and recreation are traditional clients of the private sector for consulting services. The potential for a greatly expanded private meteorological and oceanographic contribution is large today. Economic forces (rising costs of labor and fuel especially) are forcing managers to consider effects of weather and climate in more quantitative ways as they begin to appreciate the significance of marginal productivity gains through better decision making. Advice from private consultants is tailored for specific users in terms of timeliness, spatial resolution and delivery system which means that, given the same data base and personal skills, the private services must be more effective than public sources (radio, T-V, newspaper or special weather radio) as measured by the clients in terms of their business decisions.

Because increased professional capabilities do exist in the private sector today, I am hopeful that the drafters of the Organic Act will carefully consider language concerning this issue lest they inhibit competition and the opportunity to foster enhanced productivity through better use of services.

Note the language from three sources regarding delivery of services:

- Federal Register, Vol 39, No. 146, July 29, 1974, Page 27487: "NOAA shall perform the following functions: b. Prepare and disseminate predictions of the future state of the environment and issue warnings of all severe hazards and extreme conditions of nature to all who may be affected."
- HR5347 Sec 101(c)(1)F: "The oceanic, coastal, and atmospheric activities, programs, and functions of the Administration be conducted so as to contribute materially and efficiently to the provision of efficient and economical oceanic, coastal, and atmospheric services to all user groups."
- NOAA draft version of the Organic Act, Jan 17, 1980, sec 204 (5): "The Administration is charged with the following functions: Preparing and disseminating predictions of the future state of the atmosphere, Earth, and the marine environment and issuing warnings of severe hazards and extreme conditions of nature to those who may be affected, including warnings and advice concerning weather conditions, river flows, surface water supplies, solar disturbances, and oceanic phenomena, for the general benefit of public safety, health, welfare, commerce and industry."

I believe one can see a trend here from the earlier statement in the Register which emphasizes public safety, through the NOAA draft which is very broad and specifically includes an economic argument for services which is the source of my concern.

It would be better to create an intent and spirit that enhances NOAA's role in providing base line quality standards, timely worldwide data, generic analyses and forecasts, and public delivery systems geared toward the public safety mission (tornadoes, typhoons, floods). The private community would feel more secure in entering certain markets if it knew that NOAA would not, and it would pay a fair price for NOAA data if it did not perceive unfair competition through other public outlets. A case in point is the current difficulty that NWS and NOAA are having in deciding the policy for disseminating weather data beyond the limits of its AFOS system when it is in place. This is a potential business opportunity for several private information service companies; however, uncertainties about NWS/NOAA policy make business commitments very difficult. There has been considerable talk about increased support over ocean areas; again, private services have had an edge in these regions and are considering a whole host of advanced products and services including data buoy networks and major modeling efforts. Will NOAA be perceived by potential clients as a source of enhanced "free" services to commercial and recreational sailing, offshore drilling, mining, etc?

I favor an Organic Act through which NOAA and the private sector team up more effectively. Limit NOAA's authority to deliver highly specific services to private clients, support NOAA's ability to make generic data and products available to states, local regions, private consultants in a timely, machine processable form, and let the natural market forces determine the distribution, technological sophistication and price for these services. The private sector could be considered as a reserve capability when natural disasters are impending and could act to further disseminate NOAA's advisories and/or supply additional data and analytical services under properly defined terms and conditions.

Thank you again for this opportunity to state my views.

OCEAN AND ATMOSPHERIC POLICY ISSUES OF THE 1980's: THE ROLE OF THE NOAA ORGANIC ACT

March 13, 1980

Panel 3 presentation by William Q. Wick, Director, Oregon State University Sea Grant College Program

In a small marine laboratory near Akashi, Japan, several years ago, I discussed marine fisheries and aquaculture research and the extension of knowledge with the Director of that station. "It's a problem," he said. "In what way?" I asked. His answer prompted me to laugh, shake his hand and say, "Us too." What was his answer? "We have answers to questions that no one asks."

Today, we consider organic legislation for NOAA. I fervently hope, that as we develop this important structure, we define a program that relates to the resources and the people of America and provides answers to questions that are asked and vital to the development of this country.

On the basis of many years of activity and observation of the marine scene, I conclude that Americans, by and large, are ignorant and apathetic about the oceans and atmosphere. Worse yet, most of the ideas which they are learning from television and assorted "eco-freaks" are misleading, if not completely false. Few realize, I will bet, that marine mammals take several times more fish than man harvests. How many Americans realize the value of our seaports or the role of foreign trade on balance of payments? Most people, I fear, think that weather comes from over the hill instead of out in the ocean.

The point is that we have much to do in public education concerning the oceans and atmosphere. We are doing some but not nearly enough. But that information is available now. The several elements of NOAA can take a lead. More on education later.

In my view the federal, state, and local approach to ocean management must take a posture of aggressive use and development of resources. Trained managers realize that conservation and development are not necessarily opposed. There is a segment of the American public, however, who seem to feel otherwise. The late Dr. "Wib" Chapman about a decade ago remarked, "We can no longer afford to be dilettantes in the ocean business." Amen. If phase I in America was the frontier era, we are well into phase II now. But few of us seem to realize it. Phase II requires us to use resources with the understanding that everything is connected and that use is good--waste is bad. In terms of living resources, harvest (use) is better than killing with kindness (underutilization).

All organizational elements of NOAA have important roles and missions. Each has unique capabilities and characteristics. The goal is to mesh these roles and talents into the best conceivable program. There are anomalies. The cooperatively-funded, people-oriented partnership elements such as Sea Grant are children of Congress and must be handled as partnerships. As a partner, for example, Sea Grant's non-federal side should be a party to the budget process within NOAA. At present we comment from the outside. This may sound heretical, but there are some reasons which appear valid to me:

(1) Those of us away from the Nation's Capitol do have some contributions to make, in ideas and support.

(2) We can and have helped to identify, prioritize, and provide early warning signals.

(3) In putting up one-third to one-half of the funds, we are partners and have a right.

Effective program coordination within NOAA must be mandated from on top and understood by all. Turf problems, if any, are luxuries which we can't afford and that Americans will not tolerate. Although the record seems to be improving, there is a long way to go. Half-hearted cooperation and coordination is even more divisive and insidious. Interagency agreements, aggressively weeded, tended, and fertilized can raise healthy synergistic crops. The Sea Grant-US Fish and Wildlife Service agreement, at least in our case, is working well. There are others, some in NOAA, that I can't brag about.

The partnership question also implies timely participation in development of programs. This past Monday I received a 287-page unbound missile from a NOAA agency in Washington. There was no explanatory note with it. I think it is a computer print-out of some agencies research projects. Who selected them? Who said they were important? Who reviewed them?

In contrast, Sea Grant projects from the individual programs are regularly submitted to pertinent agencies long before becoming part of a proposal package. Federal and state agency staff and relevant industries and individual citizens review these proposals before the fact. Some of the same agencies and industries are a regular part of formal review panels. The Sea Grant system is not perfect but appears to be far ahead of other approaches.

NOAA organic legislation should recognize that line agencies can do certain things well and others not as well:

(1) Regulator agencies, for example, are not very effective educators. The educational role of these agencies, then, should be to facilitate ready access to information.

(2) Agencies with active mandates must respond to these subjects, often in a trouble-shooting mode. Thus, they may not have the thought time available to conceptualize. But agencies can work effectively with universities, for example, to develop projects which will lead toward the new approaches that are continually needed.

(3) Neither agencies nor universities, in my view, make very effective consultants.

Earlier, the need for ocean and atmosphere public education was recognized. The current Sea Grant approach involving State Departments of Education and the Chief State School Officers Association is an exciting opportunity. This program has led to the appointment of a marine education coordinator in the state education departments in all 50 states. When fully operational, we may finally have the key which provides access to America's classrooms.

There is a current saying in Oregon--"If it isn't broke, don't fix it." NOAA is certainly not broke, but it may need a nut tightening here and there and a bit of grease on some of the sprockets. Perhaps the proposed organic legislation will help. At the least, it should clarify the mandate and permit better service to Americans.

WORKSHOP ON NOAA ORGANIC LEGISLATION

Atmospheric Responsibilities Panel

Richard G. Semonin, Chairman
Head Atmospheric Sciences Section
Water Survey Division
Illinois Institute of Natural Resources

General Comments

Before entering into specific discussions on various aspects of the atmospheric responsibilities of NOAA as proposed in the organic bill, I have a few general comments to make regarding my views of NOAA's role in oceanic and atmospheric research and development.

As pointed out in the background material concerning the evolution of the organic act for NOAA, it is obvious that the administration came into existence by combining elements of various agencies. The atmospheric responsibility of NOAA is historically rooted in the U.S. Weather Bureau and its predecessors and successors, and was primarily oriented toward public services, with research largely directed toward improvement of its services. Some very few basic research programs were tolerated, but few large scale programs were ever undertaken. The very short-lived ESSA began to show signs of developing a research capability only remotely related to improved services. The origins of the more basic research efforts were due largely to reorganization and individual scientists rather than planned programs to research recognized problems pertinent to the newly-formed mission-oriented agency. As NOAA was born of components from several agencies, it sufferes from a lack of individualism and the ability to provide insight into what the national problems are and what research programs should be addressed or undertaken to serve the national needs.

From external appearances, it seems that the research endeavors in the atmosphere seem to evolve from strong individuals and laboratory interests rather than from some preception of what the important national needs are for weather and climate services and research. The development of the administrative structure of NOAA has inhibited progress due to ingrown ideas and little acceptance of outside critique and review.

It seems to me that the present form of the organic bill needs strengthening in the area of dealing with universities, basic and applied research institutions, and the private sector. I don't mean bringing a few university members to NOAA for short term appointments, but a real strengthening of the ties between these outside communities and NOAA through sustained funding of research contracts. NOAA should take pride in receiving acknowledgements in the published literature for support of funded research of outsiders. All too frequently, research takes the form of in-house efforts and arrangements for external assistance inhibit freedom of expression of individual scientific input. A basic core element of strong research leadership is necessary within NOAA, but much of the applied and basic research can be more effectively carried out in the university or private sector environment.

A much clearer role for NOAA should be spelled out for the archiving and dissemination of weather and climate data for the nation. There are already several environmental data banks among the many government agencies and as we move to the 80's with a greater realization that climate not only means temperature and precipitation, but a whole host of other environmental variables, we must begin to think of centralizing the environmental data archives so that all important variables are equally accessed. A program for dissemination of archived data in user-related form should also be given

serious consideration within the overall NOAA responsibilities. The demise of the State Climatologist Program was one of the earliest and most serious mistakes made by ESSA, and NOAA appears to be heading toward a similar mistake with the AFOS system. These actions increasingly isolate NOAA from the general public, thus losing contact with its public and scientific constituency. Perhaps NOAA, by act of Congress, will be forced to re-instate some form of direct communication to the users of climatic data within the framework of the National Climate Act. But why does the Congress have to take these initiations? The charge to NOAA for atmospheric responsibilities can be made in very simple terms. To: 1) provide daily weather services (forecasts and data), 2) provide climatic services (outlooks and data), and 3) archive and disseminate all such data for the nation. Further, to conduct such research and development as necessary to maintain and improve such, services and data management and availability.

The details of the scope of the various elements of such a charge should be carefully prepared with advice from all sectors of the atmospheric interest community including government (both state and federal), public users, and the university and private sectors.

I am not very hopeful that there will be much improvement in the current situation because the Organic Act only serves to document or legalize the current state of atmospheric activities in NOAA. The entire atmospheric sciences programs within NOAA need to be freshly and seriously examined under the current light of concerns for climate change, for energy utilization and conservation, for world food supplies, and the many other areas of our every day existence dependent upon the vagaries of weather and climate.

Comments on NOAA Responsibilities in Pollution Research and Monitoring

I only feel comfortable in addressing one aspect of this topic, specifically the question of acid rain. There are others on this panel with expertise in the areas dealing with CO_2 and ozone and their impacts on the climate.

The acid rain question only recently has received wide attention in this country. At the present time, a national network is in operation to collect precipitation samples which are analyzed by a central laboratory. These elements, a network and central laboratory facility, form the core of the National Atmospheric Deposition Program. The NADP has been in operation since 1978 starting with 15 sampling sites, increasing to the present 45 stations from coast to coast and border to border. The network is continuing to grow and is expected to reach a total of 75 sites by 1981.

I wish to point out that this program developed in spite of continued pleas from the scientific community for action. Fortunately, support was gained in the Department of Agriculture, and the North Central Region of the State Agricultural Experiment Stations provided monetary and administrative support with additional funding from the U.S. Geological Survey and the U.S. Forest Service.

Now, having established the network, analytical facilities, and operational system, several agencies recognize the national need for such a program. The EPA is suddenly very committed to acid rain research, and now NOAA seeks some responsibility in this area.

I believe the quality of precipitation is as much an element of climate as the quantity or the temperature. It is proper, since NOAA is responsible for monitoring the weather and climate, that the chemical quality of precipitation should be included.

The NADP is currently financed on a voluntary basis, and although a minimum of 10-years is necessary before trends in acidity of rainfall can be discerned, there is no guarantee the NADP will achieve such long tenure. I highly recommend that NOAA undertake the primary responsibility for support of a benchmark sub-network within the NADP to insure long-term sample collection and analysis. This responsibility is not new, since the World Meteorological Organization monitoring sites in the U.S. were sited and operated by NOAA. However, the key new element here is an assured commitment by NOAA for support of at least 50 stations for many years so that the next generation will have the benefit of using such data for assessment of our changing environment.

Imagine, for example, if commitments to a national weather measurement network were not made in years past. We could not have the benefit of 100 year records of temperature and precipitation used so frequently to assess climatic change. I maintain that a similar commitment to precipitation chemistry is a responsibility of NOAA.

Comments on NOAA Responsibilities in Weather Modification

The National Weather Modification Policy Act of 1976 directed the Secretary of Commerce to conduct a comprehensive study of weather modification science and technology and submit findings, conclusions, and recommendations to the President and Congress. The Secretary appointed a Weather Modification Advisory Board in January 1977 to carry on such a study. The Board was composed of brilliant personages from the atmospheric and environmental sciences, including governmental organization specialists, and representaives of the legal profession. The Board submitted its findings, conclusions, and recommendations to the Secretary in June 1978 in the form of a 2-volume report entitled "The Management of Weather Resources." For the most part, the university community and private sector weather modification experts were satisfied with most of the recommendations with but one common exception. The

recommendation that NOAA assume sole and complete control of all weather modification research and development was not enthusiastically received.

The fears of many were amplified with the great delay in forwarding to the President and Congress the major points presented in the Board report. Nearly 1.5 years after completion of the Board's task, the Secretary of Commerce finally sumbitted a report entitled "National Weather Modification Policies and Programs." The major recommendations in the final version are:

1. To establish a national policy and a research and development program.
2. To develop appropriate levels of funding to support the research and development program.
3. To identify organizational changes needed to implement national policy, and research and development program.
4. To enact legislation containing a statement of national policy and programs including international agreements.

Subsequently, bills were introduced in the Congress reflecting some of these recommendations and calling for centralization of activities either in NOAA or NASA. The hearings on these bills brought out a different concept recommending coordination in place of centralization of existing weather modification research and development within various government agencies. This latter concept arose from concern that NOAA was not committed to weather modification. Some of the considerations which caused such concern are: 1) the lateness of the report to the President and Congress; 2) the lack of initiative in staffing experts identified with weather modification; 3) lack of visibility for a weather modification program within the ERL, in spite of recommendations and continued urging by many in the field; and 4) the placement of new initiative on weather modification extremely low in the NOAA budget priorties, thereby insuring zero funding.

These actions, or rather lack of actions, do not reflect a great interest in weather modification by NOAA. A cursory examination of recent trends show the demise of Project Stormfury (a program to modify hurricanes), the Florida

Area Cumulus Experiment (FACE) is no longer visible in the budget (and, in fact, was always underfunded by the reckoning of many), and a new program, PACE (Precipitation Augmentation for Crops Experiment), after one year of funding is not in the current budget. The latter is curious since a new initiative program on Cumulus Dynamics has received high priority in FY-81 budget considerations.

One of the major findings in the WMAB report was the lack of stable federal support for weather modification. I must question whether NOAA will solve the serious problem of stable funding and concerted efforts in light of the dismal record of priority setting just mentioned.

In my stated philosophy for the NOAA atmospheric responsibilities focusing on services, data management and dissemination, and supporting research and development, I believe the role of NOAA in weather modification should be one of support. By providing the primary weather and climate measurement program for the nation, data support to other mission agencies can easily be implemented. In other words, NOAA should drop some interagency barriers and cooperate more fully with agencies that have a stake in weather modification. The obvious major benefactors for modification of precipitation are agriculture and water supply interests. It is logical, then, that the mission agencies responsible for these resources should undertake primary roles in weather modification research and development with major services support for NOAA.

NOAA AND THE NATIONAL CLIMATE PROGRAM

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Ladies and Gentlemen:

My consideration of the requirements of the NOAA organic legislation focusses on the needs and requirements of the National Climate Program, for which NOAA is the lead agency. The program is the latest function to be assigned to NOAA and it is still very much in the developmental stage. I shall address specifically the current version of the National Climate Program 5-year plan , realising that the plan may be significantly changed before it comes to fruition. Nevertheless the plan, by looking ahead through the next 5 years, provides some pointers to the way in which NOAA itself should develop, and gives some clues to what might be considered in any organic legislation.

Climate affects most human activities, so that a key requirement of the program is co-operation between many diverse bodies, particularly between NOAA and other Federal agencies and between NOAA and local, non-Federal bodies, be they public or private. The key question, therefore, is what is the most affective role that NOAA can play in insuring that climate information is used effectively to promote the public well-being.

The current 5-year plan emphasises the need for accessable, useful climate information. I emphasise the words accessable , useful , and information . Climate data is basic to any information, but it is not itself really information. Data must be transformed into a usable form, which implies mutual co-operation between the organisation holding the data and the end user. The most generally useful kind of information is probably prediction of climate. I will divide prediction, somewhat arbitrarily, into two forms. The first form is the determination of climate probabilities - the use of existing historical records to estimate the probability of a particular event, or series of events, occuring in a particular time interval. This is possible now, amd can frequently provide sufficient information to produce realistic impact assessments and policy decisions. The second form of prediction is climate forcasting - the more deterministic predictions analogous to the current weather forcasts. These are not now possible in more than a rudimentary form, much basic research is demanded.

The three major substantive portions of the current 5-year plan reflect these concerns with information generation, probabilities and forcasts. In considering each aspect in a little more detail, I cannot hope to discuss the fine detail, subtlety, and interlinkages within the plan, or even accurately reflect its language. I hope to show, however, the main points in order to reflect on the nature of NOAA in the years ahead.

1. Providing Climate Products

No climate information is possible without the basic data . Climate data it must be noted, means more than the familiar temperature and precipitation records. Wind speed and direction, solar radiation, evaporation, fog frequencies, and many other elements make up the climate. Increasing importance must also be placed on the chemical composition of the atmosphere, the acid rain problem being a case in point, and on the interaction between the ocean and the atmosphere.

The National Weather Service (NWS), within NOAA , is the traditional primary data source. The NWS mission, however, is largely meteorological, not climatological. This means that not all elements of climatological interest are recorded within the NWS . Some climatological observations have been made, notably through the co-operative networks, but with the rise in importance of climate, this observational aspect within NWS should be strengthened. This should proceed jointly with measurements made by various mission agencies, both federal and local, to support their own particular functions.

A major problem arises when data are collected by diverse bodies: compatability of record and quality control. The present expertise of NOAA in handling atmospheric data suggests that NOAA should play a leading role , possibly a mandated role, in providing advice on measurement techniques to other agencies, and be responsible for assessing data quality of all observations before they become part of the official record of climate and are placed in the National Archive system.

The data must be transformed into information before it is useful. This transformation must be made in close co-operation

with the end user. The question of the roles of the public and private sector arises here. The Environmental Data and Information Service (EDIS), mainly through the National Climatic Center (NCC), currently issues both general climatological summaries, for both national and local areas, and data tabulations for particular user groups. The data are available, at reproduction cost, to anyone. Essentially, therefore, NOAA fills the role of data provider, while the user has the responsibility, through his own resources, public or private, to convert the data to information. This seems a logical division. However, a conflict of interest or mission has not arisen in an acute form mainly, I believe, because EDIS has maintained a very low profile. EDIS should advertise that availability of its data much more vigorously. Too many people who could use it are not aware of its existence. With higher visibility, however, must come a clearer policy concerning what can be obtained from NOAA at nominal cost, and what must be obtained from specialists outside the Federal government.

In considering the roles of the public and private sector in this field, I would like to make one additional point. When dealing with climatic problems, it is almost axiomatic that large data bases are involved. The present situation, where that data base is located within the Federal structure at NCC, should be retained. Equality of access for all potential users must be guaranteed, and the ability of the private sector to develop their own data bases should not be impared. However, the existance of a national archival data base is vital. To attempt to locate it anywhere other than at NCC would result in

unnecessary duplication and wasted resources.

2. Responding to Impacts and Policy Implications of Climate

It is possible to use presently available climatic data to estimate the probability of occurance of an event or a series of events. This information can then be used to assess the impacts and policy implication of climate. This aspect of climate prediction is relatively well developed in some areas, but needs research and development in others. Much useful information can be extracted from the present data base.

The National Climate Program emphasises responding , not initiating . The distinction is important in this area where NOAA's role is not well defined. Certainly NOAA should provide much of the expertise in interpreting data to a user, especially Federal agencies, but it is unclear how far it should go in dictating policy because of climate. In some areas the climate impact is paramount. In other areas the effect is more subtle and climate is only one of the inputs to policy. Because of the different levels of input, it is difficult to visualise NOAA as an atmospheric regulatory or enforcement agency, certainly it cannot play a role analogous to EPA . Nevertheless, since climate is becoming increasingly critical in many segments of society, it is desirable that NOAA be mandated to provide climate advice to other Federal agencies.

3. Understanding Climate

A thorough understanding of the processes creating climate and climate variability is necessary before climate information can be fully utilised. Such an understanding implies that deterministic climate forcasts will be possible, and that the

human impact on the atmosphere can be predicted. Presently we are making great strides, but are far from that goal. Meanwhile two strategies must be adopted, the first is to use the probablistic approach outlined above, the second is research aimed at understanding climate. This latter is a basic research effort. NOOA does not, and cannot, persue this alone, other agencies , such as NASA and NSF , must be involved, along with various research organisations. Nevertheless, it behoves NOAA to play a leading role; co-ordinating, avoiding duplication, co-operating in the collection of new data and the creation of new data sets, and ensuring that the ultimate goal of climate understanding is kept in sight.

4. Special Aspects

The remarks so far have discussed, perhaps in a somewhat philosophical vein, the major points of the National Climate Program, especially as it affects NOAA . Three other "special aspects" of the program must be noted, aspects that tend to look at the program in an operational way and emphasise the relationship between NOAA and non-Federal entities.

a) International activities: Climate is global in nature, and all the scientific points considered above are international in scope. NOAA must have an international outlook, and the ability to speak for the nation on matters of climate.

b) Experimental climate forcast centers: Since one of the main goals of the plan is improved climate forcasting, experimental forcasts should be attempted as soon as possible. This is necessary both to explore forcast techniques, and to investigate ways in which forcasts should be tailored to the

user community. The establishment of several centers, with NOAA support but not necessarily within NOAA , should rapidly further this aim.

c) Intergovermental programs: Many climatic impacts and policy implications are local or regional rather than national. Specific areas may need particular observations or information which might be inappropriate for the rest of the country. These needs can best be identified and assessed at the local level, within either the public or private sector. The Intergovernmental Climate Program is designed to foster co-operation between the Federal government and the local entities, ensuring a two way flow of data and information, and enhancing both the utility of the National Program and the quality of information available to local users.

5. Conclusions

The National Climate Program emphasises that NOAA is the lead agency, but recognises that climate has impacts on all spatial scales and influences most aspects of human existance. Consequently co-operation between Federal agencies is vital, while interaction with non-Federal entities provides direct benefits to all concerned. Hence NOAA is seen both as an agency with a mission of its own, providing timely state-of-the-art information on the behavior of the atmosphere and ocean, and as an agency co-ordinating, overseeing and guiding the appraisal of the role that climate plays in the nation's activities. That, I submit, is the role that NOAA as a whole, and not just the National Climate Program, should play in the 1980's.

ATMOSPHERIC POLICY ISSUES OF THE 1980's

CONGRESSMAN GEORGE E. BROWN, Jr.
Chairman, House Subcommittee on Science, Research and Technology

I. THE PROCESS OF DEVELOPING AN ORGANIC ACT AND ITS RELATION TO ATMOSPHERIC POLICY

A) BEFORE BEGINNING DISCUSSION OF THE "ATMOSPHERIC POLICY ISSUES" WHICH ARE MY ASSIGNED TOPIC, I THOUGHT I'D COMMENT ON THE DISCUSSION OF THE NOAA ORGANIC ACT WHICH FORMS THE FRAMEWORK OF THIS MEETING. ONE OF THE ANNOUNCEMENTS OF THE WORKSHOP NOTED THAT "AN AREA OF INCREASED DISCUSSION IN WASHINGTON D.C. (EMPHASIS MINE) IS THE TOPIC OF A NOAA ORGANIC ACT". IT STRUCK ME THAT THE GEOGRAPHICAL PHRASING OF THAT QUESTION MIGHT SERVE AS A WARNING TO ALL OF US TO ANALYZE OUR REAL CONCERNS HERE. WHENEVER THERE IS A WHISPER OF CHANGE IN THE STRUCTURE OF THE FEDERAL BUREAUCRACY, OR INDEED ANY LARGE ORGANIZATION, THERE ARE IMMEDIATE ALIGNMENTS OF STAKEHOLDERS OF ALL KINDS -- STAKEHOLDERS OR CONSTITUENCIES OF THE STATUS QUO, OR STAKEHOLDERS IN POTENTIAL NEW ALIGNMENTS. THESE ARE NOT EVIL OR ILL-MOTIVATED PEOPLE. IN FACT, THEY ARE PEOPLE LIKE ME -- A MEMBER OF A CONGRESSIONAL COMMITTEE WITH A CERTAIN HISTORICAL JURISDICTION WHICH MIGHT OR MIGHT NOT BE CHANGED BY POTENTIAL REORGANIZATIONS. OR THEY ARE PEOPLE LIKE ASSISTANT SECRETARIES, THEIR BUREAU CHIEFS, AND THE CABINET OFFICERS THEMSELVES WHO SEE SOME POTENTIAL LOSS OR GAIN IN THEIR PERSONAL DOMAIN. MY ADVICE TO ALL OF US, INCLUDING MYSELF, IS TO AVOID IF HUMANLY POSSIBLE THE TEMPTATION TO LET THIS DISCUSSION OF A NOAA ORGANIC ACT DEGENERATE INTO A SERIES OF TACTICAL MANEUVERS FOR PRESERVATION OR EXPANSION OF TURF. WE ALL

CLAIM, IN CONGRESS AND OUTSIDE OF IT, TO BE EXCESSIVELY BUSY: HENCE THE TRANSFER OF A FEW RESPONSIBILITIES, OR AN OPPORTUNITY TO SHARE THEM WITH AN EAGER GROUP OF WELL-MOTIVATED COLLEAGUES, SHOULD BE WELCOMED, NOT FOUGHT AGAINST. WE MIGHT WELL WANT TO REACH OUTSIDE OF WASHINGTON, D.C. TO HEAR THE DISCUSSION IN THE FIELD OF THE KIND OF ORGANIC ACT NEEDED BY NOAA -- JUST TO GET AWAY FROM ISSUES OF WASHINGTON POWER BASE WHICH ARE ALL TOO DOMINANT HERE. OUR REAL COMMON GOAL IS AN EFFECTIVE AND EQUITABLE STEWARDSHIP OF THE OCEANS AND ATMOSPHERE, AND WHETHER WE ACHIEVE THAT IN THE DEPARTMENT OF COMMERCE, INTERIOR, OR ANY OTHER AGENCY, OR UNDER THE LEADERSHIP OF THE SCIENCE AND TECHNOLOGY, MERCHANT MARINE OR ANY OTHER COMMITTEE, IS OF SECONDARY IMPORTANCE. I URGE THE PRESIDENT AND ALL OF YOU HERE TO THINK OF THAT FOREMOST GOAL OF EFFECTIVE STEWARDSHIP, AND LET THE OTHER MATTERS SORT THEMSELVES OUT NATURALLY.

B) THIS GRATUITOUS ADVICE IS GIVEN JUST BECAUSE THE TECHNICAL-POLITICAL ISSUES OF THE NEXT DECADE IN ATMOSPHERIC POLICY SEEM SO IMPORTANT TO ME. THESE INCLUDE:

1) ACID RAIN AND RELATED LONG-TERM ECOLOGICAL CHANGES

2) THE CHEMICAL TRANSPORT AND TRANSFORMATION PROCESSES WHICH ARE KEY TO DETERMINING THE EFFECTIVENESS OF AIR POLLUTION CONTROL STRATEGIES IN PROTECTING HUMAN HEALTH AND AGRICULTURAL PRODUCTIVITY

3) WEATHER MODIFICATION -- ITS ROLE AS A THREAT OR A PROMISE

4) OZONE DEPLETION DUE TO NATURAL OR MAN-MADE CAUSES

5) CLIMATE VARIABILITY -- ITS PREDICTABILITY, AND RELATED INSTITUTIONAL ISSUES

6) MAN-INDUCED CLIMATE CHANGE -- VIA THE CO_2 GREENHOUSE EFFECT

---------- AND OTHERS.

C) WE WILL RECOGNIZE SOME OF THE MOST CHALLENGING PROBLEMS FACING MANKIND ON THIS LIST. I HOPE OUR BEST MINDS CAN CONCENTRATE ON SEEKING THE BEST SOLUTIONS TO TO THEM, AND NOT ON JURISDICTIONAL OR "TURF" BATTLES RELATED TO ORGANIZATIONS DESIGNED TO PROVIDE THE SOLUTIONS.

II. BASIC PRINCIPLES OF AN ATMOSPHERIC POLICY FOR THE 1980's

A) FOR MOST QUESTIONS OF UNDERSTANDING AND PREDICTING THE BEHAVIOR OF THE ATMOSPHERE, THE ATMOSPHERE AND THE OCEANS, AND ACTIVITIES ON THE GREAT LAND MASSES, ARE INEXTRICABLY LINKED -- AND OUR INSTITUTIONAL ARRANGEMENTS MUST BE DESIGNED TO RECOGNIZE THESE LINKAGES, NOT IGNORE THEM.

B) SINCE THE ATMOSPHERE ENCOMPASSES AND AFFECTS ALMOST ALL OF OUR ACTIVITIES, OUR STEWARDSHIP OF IT IS GOING TO DEPEND ON OUR ABILITY TO FORGE AND MAINTAIN EFFECTIVE COMMUNICATION AND COOPERATION BETWEEN AND AMONG MANY KINDS OF ORGANIZATIONS, WITH FEDERAL INTER-AGENCY, AND NATIONAL INTERGOVERNMENTAL, LINKS IN THIS

COUNTRY BEING JUST ONE ASPECT OF THIS NEED. THERE WILL BE NO NEAT AND TIDY ORGANIZATIONAL BOX TO WHICH WE CAN UNIQUELY ATTACH THE LABEL "ATMOSPHERE". THE 1980'S ATMOSPHERE POLICY WILL THUS BE AN INTER-ORGANIZATIONAL POLICY.

C) THE ATMOSPHERE OBVIOUSLY DOES NOT RESPECT NATIONAL BOUNDARIES. UNDERSTANDING AND SOLVING ATMOSPHERIC PROBLEMS MAY BECOME A NEW SOURCE OF WORLD TENSION; OR PERHAPS A CATALYST FOR NEW STANDARDS OF COOPERATION. CERTAINLY, HOWEVER, THE 1980'S POLICY WILL BE AN INTERNATIONAL ONE.

D) UNDERSTANDING THE ATMOSPHERE WILL BE A LONG-TERM PROCESS. NATURAL AND MAN-MADE CHANGES ARE ONLY GRADUALLY UNFOLDING, AND OUR ABILITY TO MODEL OR PREDICT THEM IS ONLY AT A PRIMITIVE STAGE. THERE ARE PROBABLY VARIABLES UNKNOWN TO US IN ACCOUNTING FOR THE BEHAVIOR OF THE ATMOSPHERE -- AND KNOWN VARIABLES PROBABLY INTERACT AND FEEDBACK UPON ONE ANOTHER IN UNKNOWN WAYS. MONITORING THE CONDITION AND RESPONSES OF THE ATMOSPHERE, ON GLOBAL GRIDS, FOR LONG, SUSTAINED PERIODS OF TIME IS JUST ONE EXAMPLE OF THE KIND OF MONITORING WE SHOULD BE DOING IN MANY AREAS. BASELINE DATA AND ITS TRENDS MAY BE, IN THE LONG RUN, AS IMPORTANT AS ANY OF THE INFORMATION WE DERIVE FROM OUR MOST SOPHISTICATED. MODELS AND PREDICTIONS. THE 1980'S ATMOSPHERIC POLICY SHOULD HAVE, THEN, LONG-TERM, SUSTAINED MONITORING IN A PIVOTAL AND PRIORITY ROLE.

E) BECAUSE WE ARE SO ACCUSTOMED TO LEAVING THE LONG-TERM CARRYING CAPACITY OF THE ATMOSPHERE OUT OF STRATEGIC THINKING CONCERNING ENERGY AND DEVELOPMENT PLANS, THE SCIENTIFIC CASES FOR ALTERING PLANS IN RESPONSE TO CO_2 OR ACID RAIN PROBLEMS, AS JUST TWO EXAMPLES, WILL HAVE TO BE ESTABLISHED WITH UNPRECEDENTED SCIENTIFIC CREDIBILITY. THE SCIENTIFIC INFORMATION IN EITHER OF THESE CASES COULD PRESENT VERY DIFFICULT POLITICAL CHOICES TO DECISION MAKERS. THE ATMOSPHERIC POLICY OF THE 1980'S WILL THUS HAVE TO BE ONE OF FINDING NEW METHODOLOGY FOR ESTABLISHING THE <u>POLITICAL CREDIBILITY</u> OF SCIENTIFIC RESULTS, OR AN ACCEPTABLE BASIS FOR ACTION IN THE FACE OF SCIENTIFIC UNCERTAINTY.

F) FINALLY, SINCE IMPLICATIONS OF OUR UNDERSTANDING OF THE ATMOSPHERE CAN SO PROFOUNDLY AFFECT SO MANY SECTORS OF SOCIETY, PLANNING ON A COMPREHENSIVE AND LONG-TERM CONTINGENCY BASIS BECOMES AN ESSENTIAL POLICY FEATURE. SUCH PLANNING NEED NOT FOLLOW CENTRALIZED MODELS, WHICH OFTEN SHOW AN UNDESIRABLE INFLEXIBILITY, BUT COULD INVOLVE NETWORKS OF INTERACTING DECENTRALIZED UNITS ALL GRADUALLY REFINING AND MOVING TOWARD A COMMON FRAMEWORK OF ACTION. AS IS OFTEN TRUE, THE TRUE VALUE OF THE PLANNING EXERCISE MAY BE AS AN INTERNAL COMMUNICATIONS DEVICE -- IN WHICH PARTICIPATION IN THE PLANNING PROCESS BECOMES A WAY OF

PERCEIVING AND UNDERSTANDING THE CONSTRAINTS AND ASSUMPTIONS OF OTHERS. IN THIS SENSE, A WORLD EFFORT TO UNDERSTAND THE CO_2 "GREENHOUSE" PHENOMENON COULD BECOME A NECESSARY ANTECEDENT TO WORLD ACTION TO RESPOND TO IT.

III. SPECIFIC ISSUES IN TERMS OF THESE PRINCIPLES

A) ACID RAIN -- CHEMICAL TRANSPORT AND TRANSFORMATION IN THE ATMOSPHERE:

MANY OF OUR AIR POLLUTION REGULATIONS WERE WRITTEN, FOR THE SAKE OF LEGAL SIMPLICITY, IN TERMS OF REGULATING SINGLE SUBSTANCES, AND WITH SIMPLIFIED AND LOCALIZED CAUSE AND EFFECT RELATIONSHIPS AS A BASIS. THE MOST STRIKING EXAMPLE WAS EPA'S DECISION TO REGULATE AIR-BORNE OXIDANT LEVELS IN TERMS OF OZONE CONCENTRATIONS ALONE. THIS MAY HAVE SOME SHORT-TERM BENEFITS IN SPEEDING-UP REGULATION WRITING. IN THE LONG RUN, HOWEVER, IT IS NOT TENABLE IN THAT IT IGNORES THE KNOWN INTERACTIVE NATURE OF ATMOSPHERIC CONTAMINANTS.

MAKING A SCIENTIFIC FICTION THE BASIS FOR REGULATIONS IS AN EXPEDIENCY WHICH, UNFORTUNATELY WEAKENS THE RESPECT FOR THE ENTIRE FRAMEWORK OF THE REGULATORY LAW. SOMEHOW, WE ARE GOING TO HAVE TO REACH A NEW METHODOLOGY FOR BASING REGULATORY LAW, ONE WHICH IS NOT ARTIFICIALLY CAST INTO LEGALISTIC RIGIDITY, ONE WHICH RECOGNIZES BOTH THE VALUE AND LIMITATION OF TENTATIVE SCIENTIFIC FINDINGS, AND ONE WHICH FRANKLY FACES THE NEED TO ACT IN CIRCUMSTANCES OF UNCERTAINTY -- EVEN AS IT MOVES VIGOROUSLY TO NARROW THAT UNCERTAINTY.

ACID RAIN PHENOMENA PRESENTS MANY OF THESE DIFFICULTIES OF COMPLEX AND DELOCALIZED CAUSE AND EFFECT RELATIONSHIPS. YET ITS IMPACT, ESPECIALLY IN AGRICULTURE AND FORESTRY, IS POTENTIALLY SO GREAT THAT IT MUST BE CONSIDERED AS A SCIENTIFIC CHALLENGE IN THE MOST URGENT CLASS. IF THE PRESIDENT'S RECENTLY ANNOUNCED COAL CONVERSION PLAN IS NOT TO BECOME MIRED IN SUSPICION AND CONTROVERSY, WE MUST MOUNT A PROGRAM TO UNDERSTAND ACID RAIN WITH AT LEAST THE SAME SEN E OF URGENCY AS THE COAL CONVERSION. AS IN OTHER ISSUES ON OUR WORKING LIST, THIS ACID RAIN SCIENTIFIC PROGRAM SHOULD BE AN INTERNATIONAL ONE, BOTH TO OPTIMIZE THE KNOWLEDGE GAINED PER DOLLAR EXPENDED, BUT ALSO TO HELP ENLIST THE WORLD SCIENTIFIC COMMUNITY AS PARTNERS, NOT ADVERSARIES, IN CALLING PUBLIC ATTENTION TO THIS IMPORTANT PROBLEM.

B) <u>WEATHER MODIFICATION</u> WEATHER MODIFICATION -- LARGELY RAIN-MAKING -- IS A TECHNOLOGY THAT OBVIOUSLY HOLDS OUT THE TANTALIZING PROSPECT OF MITIGATING ONE OF THE FORCES OF NATURE WHICH HISTORICALLY HAS BEEN MOST CRUEL TO MAN. AS WITH MOST TANTALIZING PROMISING SERVICES, IT IS NOT SURPRISING THAT A VIGOROUS PRIVATE BUSINESS HAS DEVELOPED TO OFFER IT. CERTAINLY VENDORS OF THAT SERVICE, AS WELL AS SOME PROMINENT SCIENTISTS, BELIEVE THAT WEATHER MODIFICATION IS A TECHNOLOGY READY FOR IMPLEMENTATION ON AN OPERATIONAL SCALE. THIS THINKING WAS

STRONGLY REPRESENTED IN THE REPORT OF THE WEATHER MODIFICATION BOARD WHICH WAS SET UP BY LEGISLATION FROM THE SUBCOMMITTEE ON NATURAL RESOURCES AND THE ENVIRONMENT, ON WHICH I SERVE UNDER THE CHAIRMANSHIP OF CONGRESSMAN JERRY AMBRO. MY OWN VIEW IS COLORED HEAVILY BY THE POLICY PRINCIPLES, OF MONITORING AND CREDIBILITY WHICH I INDICATED AS KEY, IN MY MIND, FOR THE 80'S. WE ARE PERHAPS FORTUNATE, IN THIS AREA, THAT THERE IS A GREAT DEAL OF PRIVATE ACTIVITY. WE HAVE READY-MADE EXPERIMENTS, MANY GENERATED WITHOUT MAJOR FEDERAL INVESTMENT, AND NEED ONLY AVAIL OURSELVES OF THE OPPORTUNITY TO MONITOR THESE IN ORDER TO HAVE A SET OF CREDIBILITY BUILDING EXPERIMENTS. THIS IS AN EXCELLENT OPPORTUNITY (ESPECIALLY IN HURRICANE SEEDING) FOR INTERNATIONAL COOPERATION AS WELL, IN THAT DEFINITIVE AND WELL-PLANNED COOPERATIVE EXPERIMENTS WILL BE OF INTEREST TO MANY NATIONS -- WHEREAS UNILATERAL ACTIONS COULD BE VIEWED AS THREATS OR RECKLESS ABUSE OF THE "COMMONS" OF THE ATMOSPHERE.

C) OZONE DEPLETION -- INTERNATIONAL EMPHASIS, LONG-TERM MONITORING, SCIENTIFIC CREDIBILITY, AND MANY OTHER BASIC POLICY PRINCIPLE NEEDS ARE WELL-ILLUSTRATED BY THIS PROBLEM. I MIGHT EMPHASIZE HERE, HOWEVER, THE INTER-ORGANIZATIONAL ASPECT. IT WAS CLEAR TO US WHEN THE NATURAL RESOURCES AND ENVIRONMENT SUBCOMMITTEE ACTED ON THIS A COUPLE OF YEARS AGO, SETTING UP A STUDY AND RESEARCH PROGRAM AIMED AT ESTABLISHING WHETHER OR NOT HALOCARBON EMISSIONS NEEDED TO BE LIMITED, THAT THE ENVIRONMENTAL PROTECTION AGENCY HAD THE CLEAREST BASIC MISSION MANDATE TO ACT ON THIS MATTER.

YET IT WAS ALSO CLEAR THAT BOTH NOAA AND NASA HAD RESEARCH AND MONITORING CAPABILITIES WHICH OBVIOUSLY WERE NEEDED IN ANY PROGRAM WHICH MADE OPTIMAL USE OF AVAILABLE RESOURCES. THE CONSUMER PRODUCTS SAFETY COMMISSION ALSO TURNED OUT TO HAVE LEGAL AUTHORITY ENABLING IT TO TAKE REGULATORY ACTIONS, AND HENCE BECAME AN IMPORTANT PLAYER IN WHAT APPEARED TO BE A MATTER IN THE DOMAIN OF LONG-TERM ECOLOGICAL CONCERN. THE MIX OF AGENCIES I'VE DESCRIBED SO FAR IS INDEED COMPLICATED, AND YET I'VE PROBABLY TOUCHED ON ONLY A FEW OF THE IMPORTANT COMPONENTS. THIS CANNOT BE VERY SATISFYING TO THE ORGANIZATIONAL PURIST, AND YET EXPERIENCE TELLS US THAT WE REACH THE POINT OF DIMINISHING RETURNS VERY SOON WHEN WE START TRYING TO DRAW NEAT JURISDICTIONAL LINES. IT MAY BE THAT THIS IS AN EXAMPLE IN WHICH WE CAN BEST CONCENTRATE ON THE FORMATION OF NETWORKS OF CLOSELY COMMUNICATING UNITS WHICH BRING SOME CONTRIBUTION TO SOLVING THE LONG-TERM PROBLEM -- AND NOT WASTE OUR TIME ON STRICT DEFINITIONS OF AUTHORITY AND RESPONSIBILITY.

D) ISSUES RAISED BY CLIMATE VARIABILITY AND THE CO_2 PROBLEM BRING THE NEED FOR ALL THE POLICY PRINCIPLES CLEARLY INTO FOCUS. THE EFFECTS OF LONG-TERM CLIMATE CHANGE, NATURAL OR CO_2 CAUSED, MAY BE SO PROFOUND THAT WORLD POLITICAL BODIES WILL BE FORCED TO FUNDAMENTAL EXAMINATION OF THEIR GOALS. ON THE ONE HAND, THE PROSPECT OF IGNORING PREPARATIONS OR AMELIORATIVE STEPS MAY APPEAR DISASTROUS IN THE FACE OF CLIMATE CHANGE BRINGING ABOUT MAJOR DISLOCATIONS IN GLOBAL

ECONOMIC, AGRICULTURAL, AND SOCIAL ORGANIZATION. ON THE OTHER HAND, THE NEEDED PREPARATIONS AND AMELIORATIONS MAY SEEM ALMOST AS FORBIDDING. OBVIOUSLY POLITICAL LEADERS WILL ONLY BEGIN TO FEEL READY TO MAKE SUCH DIFFICULT CHOICES IF THE SCIENTIFIC CASE IS MADE WITH UNPRECEDENTED CREDIBILITY. MOREOVER, SINCE ANY USEFUL STRATEGIES WILL PROBABLY BE GLOBAL IN SCALE, THE CASE WILL HAVE TO BE ESTABLISHED WITH INTERNATIONAL COOPERATION AND PLANNING. IT WILL NOT BE POSSIBLE FOR A FEW TECHNICALLY SOPHISTICATED NATIONS TO CREDIBLY "INFORM" THE REST OF THE WORLD OF A GLOBAL PROBLEM OF THIS KIND. THERE WILL ONLY BE RECEPTIVENESS TO WORKING TOGETHER FOR SOLUTIONS TO PROBLEMS IF THERE HAS BEEN PRELIMINARY WORKING TOGETHER TO UNDERSTAND AND VERIFY THEM.

IV. CONCLUSIONS: MY CONCLUSIONS ARE PROBABLY OBVIOUS FROM MY STATEMENT OF THE ISSUES. ATMOSPHERIC POLICY HAS MOVED INTO A REALM OF LONG-TERM, TECHNICALLY COMPLEX, AND GLOBAL-SCALE PROBLEMS WHICH WILL CHALLENGE OUR INSTITUTIONAL CAPABILITIES. ALTHOUGH SOME MAY DESPAIR OF OUR PROSPECTS TO ADJUST, I SEE INSTEAD THESE PROBLEMS AS A CATALYST FOR FUNDAMENTAL INSTITUTIONAL CHANGE OF THE KIND NEEDED IN ANY CASE AT THIS STAGE OF HUMAN DEVELOPMENT. RESILIENCY, ADAPTABILITY, STRONG COMMUNICATIONS, AND A SENSE OF LONG-TERM STEWARDSHIP OF THIS PLANET ARE ALL CHARACTERISTICS WHICH WE NEED TO BUILD INTO OUR GLOBAL SOCIETY.

NOAA'S Resource Management and Policy Role for Non-Living Ocean Resources

By Robert W. Corell

A contribute to the NOAA Organic Act Workshop

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INTRODUCTION

Some years ago I was involved with a research and development program designed to study the environmental aspects related to the development of a coastal and offshore sand and gravel industry. At that time there was substantial interest in the United States, and elsewhere, of using ocean-bottom sand and gravel deposits as a source of aggregate for the construction industry. Throughout the world, this source is increasingly being used as an economically valuable one.

The development of such a resource, however, clearly has an impact on other marine resources in the continental margins, such as fisheries, spawning grounds for a variety of marine species, marine transportation, coastal sentiment transport, and a host of others. This program, directed toward development, management, conservation, and regulation of an offshore sand and gravel industry, provided us with a "first hand" view of marine resource development issues. It is increasingly apparent that resource development requires "systems" thinking because of the high degree of interaction between the many important marine resources. Consequently, I have come to believe that marine resource development, management, conservation, or regulation cannot be dealt with in isolation or separately. The demarkation, therefore, between living and non-living resources is possibly artificial.

During the past decade, NOAA has evolved from a federal agency with relatively simple primary responsibilities for ocean and atmospheric services and research to one that includes these functions, but also is deeply concerned with resource development, conservation, regulation, management, and resource utilization planning. This is a profound and fundamental change in the character of an agency. Clearly much of this has been created by statutory responsibilities such as FCMZ, CZM, and the Marine Mammal Protection Act.

The two drafts of organic legislation, and a review of NOAA as it now exists, suggest a pattern. First, the statutory responsibilities seem to be founded on an attempt to deal with resolution between resources that appear to be in conflict (i.e. fishing and petroleum development or resource preservation and development). The CZM Act is clearly that kind of legislation.

Second, the legislation is increasingly utilizing participatory mechanisms (such as the Councils in FCMA or the variety of participatory mechanisms in state CZM Programs) in an attempt to minimize conflict and to conduct management in the "best interest of society." A pattern of democratization is developing in the management process, and it is likely that this direction will continue. Is it not possible that there will be an Ocean Zone Management Act patterned after the CZM Act, or an Ocean Conservation and Management Act patterned after the FCMA? Maybe! The issues are there and it is possible, for example, that our nation will attempt to resolve the George's Bank Fishery and petroleum development conflict through such legislation. I'm not an advocate of this point of view, but the patterns are there.

There are alternatives, and the NOAA Organic Act provides an opportunity here now to begin to take a comprehensive view of ocean resource development, management, conservation, and regulation. Taking these seemingly disparate interests and developing integrated thinking is, I think, in the best national interest. It will be an imperfect process, but it may provide an alternative mechanism for encouraging sagacious use of our marine resources. The Organic Act can provide such an organizational framework.

A systems point of view doesn't isolate the living from the non-living. How well we are learning this in FCMA. We started with single species plans only to discover the now obvious fact that multiple species plans are the logical next step. Does it not follow that the next step, as big as it may be, is a multiple use plan where fisheries and other priority users start to be synthasized into a more complex planning pattern? My suggestion is that the Organic Act could encourage a synthesis of thinking within NOAA and could be a catalyst for conflict resolution amongst the various marine resources programs. I would encourage us to develop an Organic Act that is substantial on principle, goals and objectives, but leaving to executive action development of an administrative structure to carry out such a charter.

It is tempting to continue to develop a line of thought around the details of a NOAA Organic Act, but many constructive thoughts have already been expressed by others in this workshop and hence, I would like to raise some other thoughts on the way that the academic community might be more effectively connected to NOAA and to its responsibilities.

American universities contain a tremendous range of talent and resources. The Marine and Sea Grant Universities in the United States have demonstrated that universities can respond to state and regional research needs. How, then, can a mechanism be devised to garner the range of talent in american universities to the NOAA mission requirements of national scope? I suggest we follow a pattern similar to that of the Office of Naval Research, and create in concept, an Office of Ocean Resource Research. The programs manager in such an Office would develop a thorough understanding of research requirements in NOAA and translate these into research programs that will attract the interest and talent of the academic world. For example, it is the research programs manager in ONR who draws the connection between the requirements of the Navy and the talents and capabilities of the academic community. In the same sense, programs manager in this new NOAA office would have to understand the needs and requirements of NOAA, and convert those requirements into research priorities that can be undertaken by scientists in american universities. This concept suggests that a connection to the academic community is essential to the health and vitality of a total research program for NOAA.

In summary, I have suggested two thoughts:

(1) The Organic Act provides an opportunity to develop a framework for a comprehensive approach to the sagacious use of our ocean resources, their management, development, conservation, and regulation. The Act could provide a charter for NOAA to accomplish this.

(2) The academic community is a major national resource which should be more effectively connected to the programs of NOAA, maybe through an ONR-like mechanism.

Thank you, Mr. Chairman, for the opportunity to speak at this workshop on a topic that could have a substantial impact on the way our nation works toward the development, management, conservation, and regulation of its ocean and coastal resources.

OCEANIC AND ATMOSPHERIC POLICY

ISSUES OF THE 1980'S

THE ROLE OF THE NOAA ORGANIC ACT

OCEAN RESOURCES - NONLIVING

by

John E. Flipse
Professor of Ocean Engineering
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INTRODUCTION

It is a sense of urgency that brings me from sunny Texas to our Nation's Capital during a snow storm - - - urgency prompted by the real need for an Organic Act for NOAA to enhance its effectiveness in the years ahead. I have reviewed H.R. 5347 and applaud John Breaux's usual excellence. Although the final legislation may be considerably different, H.R. 5347 contains all of the major elements of a useful charter for NOAA. My remarks will be directed towards NOAA's role in deep ocean hard mineral development and management.

Before proceeding with the assigned task, I would like to comment on the Coastal States Organization's comparision of the NOAA authored Organic Act and the Breaux Bill. No doubt I will offend both parties, but I feel that these comments are important and hope that they will influence future versions of the legislation.

First, I recommend that the bill provide for the President to appoint all Assistant Administrations, for the following reasons:

1. The NOAA Administrator, Deputy and Assistant Administrators are a team. Their appointment by the President will provide more Presidential interest in the agency.
2. To get real talent (undefined here) they must be "Super Grades" which means appointees.
3. Continuity, and perhaps technical competence, is provided in the top civil service grades.
4. The newly chosen Administrator can test his strength (and negotiating skill?) by being part of the selection process.

Second, I recommend that there be only one Assistant Administrator for Fisheries, for the following reasons:

1. As Assistant Administrator for "Development" and another for "Management" almost assures an adversary relationship and perpetuates the nonsense that a single agency cannot promote and regulate a resource.
2. Any attempt by the President to "balance" his appointments in a single area (Fisheries) assures relationship problems.
3. Over emphasis of the fish resources may damage NOAA's credibility.

Third, I recommend that there be an Assistant Administrator for non-living ocean resources, for the following reasons:

1. Mineral resources of the shelf and deep seabed are of great economic and strategic importance to our nation (even excluding petroleum).

2. This is the expanding and developing area of marine resources.
3. The area merits the attention and visibility that an Assistant Administrator would provide.
4. A balance between the Fisheries and Mineral interests could be maintained.

I find it impossible to "go-on-the-record" regarding the workshop without making a few comments on the remarks made in the previous panel discussions. Several important ideas need emphasis, including:

1. Although the educational and service functions of Sea Grant expand and flourish, the research content and product is decreasing. The continuing increase of participating parties (each Congressman needs his Sea Grant College or University) without a corresponding increase is support ($) has reduced the average research grant (now near 30 thousand dollars, in Texas) below the critical amount needed to provide faculty and graduate student support and supplies (computer time, publication, travel, etc.) for a reasonable time, say one year.
2. An Organic Act is needed for NOAA so that the agency can effectively budget its activities and the Congress can react, specifically, in budget reviews. "Pass-thru monies" now support many important programs, including the Marine Minerals Division.
3. The Organic Act should be general in regard to tasks -- no "laundry lists." The best 1980 "laundry list" may well be obsolete by the time the bill becomes law. In the intervening years (?) the "laundry list" continues to enrode support.

4. Development and management of a resource should be done by the competent government unit. Some reorganization to assemble competence is acceptable but reassignment of responsibilities should take place through evolution, not revolution, with the competent agency the recipient.

NOAA'S NON-LIVING RESOURCE DEVELOPMENT & MANAGEMENT ROLE

Based on nearly a decade of interaction with the (now) Division of Marine Minerals of the Office of Policy and Planning of NOAA, I am pleased to report that there is considerable technical and management talent existent in NOAA today. This unit is small (less than a dozen professionals and staff) but has sucessfully conducted at least one major research program with industry and academia, frequent workshops and seminars and a major educational program through the above vehicles. Excellent support by other NOAA Units (Environmental Laboratories, the NOAA fleet of research ships, etc.) has effectively expanded the core office's capabilities. Let me suggest an ongoing program for the NOAA Division of Marine Minerals which certainly deserves an Assistant Administrator at its head and a line-item in the Department of Commerce's annual budget.

1. RESOURCE ASSESMENT

The government's role in resource assesment is valid if the information is needed to manage the resource and the industry cannot perform the assesment (lack of economic opportunity, etc.) or, a potential resource has not been identified or quantified. Let me cite a few examples:

•Industry has done an effective job in assessing the manganese nodule resource on the deep ocean floor. No current NOAA assessment role is indicated.

•The shell, sand and gravel of the shelf has not been assessed by the industry. To stimulate development, NOAA should make this resource

assessment.

•Deposits of exotic metals at the intersection of the pycnocline and the seabed are possible. NOAA's research and subsequent assessment of this potential resource is appropriate.

2. ESTABLISHMENT OF ENVIRONMENTAL BASE LINE

NOAA's early attempt to establish the environmental base line off the Coast of Massachusetts in the sand and gravel case ran afoul of the unique New England marine mineral resource development attitude. The excellent job done on the deep ocean environmental base line (DOMES I), on the other hand, demonstrates both the ability of the NOAA team (as supported by academia) and the wide acceptance of the role by all sectors. Recent experience in the other non-living mineral resource of the shelf and slope (petroleum) suggests that NOAA's talent and credibility could be well employed here as well - - - a future possibility.

3. SYSTEM TEST PROGRAM OBSERVATION AND EVALUATION

This role is essential as a follow-up to the base line effort. An excellent example exists in the DOMES II program which was recently completed. Again, NOAA's objective approach and credibility are the basis of the program's wide acceptance.

4. PREPARATION OF THE PROGRAMATIC ENVIRONMENTAL IMPACT STATEMENT

Any program to develop non-living marine resources is very likely to require a Programatic E.I.S. As the requirement is "laid on" by the government, NOAA should prepare this document. Credibility is again an important reason for NOAA's role. Lest we feel that industry is escaping, it is also very likely that a site specific E.I.S. will be required (at least in deep ocean mining) which would be industry's burden.

5. REGULATION

It is unrealistic to expect that non-living marine resource development and production in an environmentally sensitive area (by defini-

tion) will proceed without regulation. Hence NOAA, the agency with the competence, should do any required regulation. My views on over-regulation are too well known for anyone to mis-interpret the above remark as advocacy of regulation!

6. MONITORING

As non-living ocean resource development expands NOAA should be equipt and competent to monitor commercial operations to assure compliance with existing regulations. The monitoring experience should further enhance NOAA's key claim to its role, competence.

7. RESEARCH

There is no question in the minds of academic researchers that the government body responsible for the development and management of a resource needs to sponser research. Knowledge of the resource is enhanced and the agency's competence is increased. Engineering development is the province of industry while resource research is appropriate for both sectors. Considering NOAA's budget for its Marine Mineral Division, their research record is outstanding. Certainly the role is appropriate, even if this is not a truly objective opinion.

It is a pleasure to add my rather practical remarks to the erudite hypotheses of my academic colleagues. It is my contention that a NOAA Organic Act is a very practical document produced by a very very practical political process. We should pay more attention to the "legislative history" of the Act and less attention to the minutiae of the Bill if we are to have a truly usefull charter for NOAA.

Dr. Virginia K. Tippie
Executive Director
Center of Ocean Management Studies
University of Rhode Island

I strongly endorse the concept of a NOAA Organic Act which codifies existing authorities. Obviously it's human nature to want the biggest piece of the pie, and federal agencies, are no different. Usually, the turf battles between agencies get resolved at appropriations time, however, in the ocean's area, the allocation process is difficult for there is no clear cut statement of NOAA's responsibilities. For solely housekeeping budgetary reasons, we need a NOAA Organic Act. We should be careful, however, not to confuse this task with reorganization efforts. The issue of federal reorganization will continue to be debated in the back hallways and it will not be easily resolved. Obviously, NOAA's pending jurisdiction over deep sea mining begs the question of why NOAA, when Interior has long been responsible for mineral resource development. Until we see a reorganization plan that assures wise development and management of the oceans, I think we should leave this difficult issue for another day. Let's focus today on securing the integrity of our existing ocean's agency - NOAA.

I think it is useful at this point, to discuss NOAA's mission from a philosophical perspective. The Federal Marine Program Review states that:

> "The mission of NOAA is to explore, map, and chart the global ocean and its living resources, to manage, use, and conserve those resources and to describe, monitor, and predict conditions in the atmosphere, ocean, sun, and space environment, issue warnings against impending destructive natural events, develop beneficial methods of environmental modification, assess the consequences of inadvertent environmental modification over several scales of time, and manage all operational civilian remote sensing activities from space."

I think this statement conveys a real sense of what NOAA's all about. It's the watchdog for the oceans and atmosphere - the protector, conservator, guardian of the resource. NOAA is the researcher, who feeds scientific information into the resource management decision process; and the manager,

who assures effective, multiple use of the single resource - the ocean/atmosphere. NOAA should not be the developer - that's industry's role, nor should it be the regulator (let E.P.A. and Interior hassle with those problems). Lastly NOAA should not be the enforcer. Basically, this is the "checks and balances" argument. To state it more succinctly, NOAA should maintain a "neutral" broad perspective of the single resource - the ocean/atmosphere system. This will enable it to serve as the arbiter of the ocean, to identify and help resolve multiple use conflicts.

I'd like to briefly discuss my perception of NOAA's research role in the area of "non-living ocean resources". I would argue that NOAA should conduct and coordinate all applied civilian research efforts in the ocean. Basically, it should be responsible for all of the activities identified in question # 1 of our survey. It should be the collector and disseminator of environmental and resource information about the ocean. Using this argument, I believe that NOAA should have a lead responsibility for OCS environmental assessments. As for deep sea-mining, NOAA's Domes project has shown that it has the capability to conduct environmental research in the deep ocean. It has ships and the scientific expertise to best assess the environmental impacts of activities anywhere in the ocean.

In terms of future research opportunities, I think we will see an ever increasing demand for NOAA's expertise in two specific problem areas - waste disposal and resource development of frontier areas. The use of the oceans for waste disposal will continue to be a topic of debate. Regardless of legislation, we cannot ignore the ability of the oceans to absorb a wide range of wastes. In order to make wise waste management decisions, we must assess the assimilative capacity of the oceans. NOAA's research efforts can contribute significantly to our understanding of the processes involved. In regard to the development of resources in frontier areas, we face our biggest challenge in Antarctica. In light, of increasing interest in the poten-

tial oil and gas resources of this continent and its valuable fishery resources, I believe it is critical that NOAA take the initiative and get applied research efforts underway to assess the resources and establish an environmental baseline.

I would like to now turn to NOAA's role as a manager. As I mentioned in the beginning of my talk, I feel very strongly that NOAA should be concerned with the medium - the ocean environment, not the seabed mineral and oil resources per se. To some extent, I am suggesting that NOAA should extend the coastal zone management concept out onto the shelf. That is, it should take a lead in identifying potential use conflicts and should encourage and watch-over industry and other federal agencies to assure that the OCS is developed in an orderly manner that provides for protection of the environment. Using the checks and balances argument it should not be responsible for development or management of specific resources (i.e. oil and gas). It should be concerned with the big picture - the ocean/atmosphere system. To some extent, NOAA's ORCA office within the office of Coastal Zone Management has been developing this ocean management concept. It will also be interesting to see the applicability to the OCS of the recommendations of the Interagency Federal Coastal Program Review - Improved Coordination Effort, which is exploring mechanisms to resolve multiple-use conflicts. Obviously in frontier oil and gas areas such as the Georges Bank, off the coast of New England, conflict-resolution mechanisms would be invaluable. I think NOAA could serve a very useful role in trying to facilitate dialog between concerned parties in these frontier areas. However, to assure resolution, NOAA must maintain a neutral stand and be perceived as a wise manager/guardian of the ocean.

STATEMENT BY THE HONORABLE JOEL PRITCHARD (R.-WA.) REGARDING "OCEAN USE ISSUES OF THE 1980'S" BEFORE THE COASTAL STATES ORGANIZATION, MARCH 14, 1980.

THANK YOU, MR. CHAIRMAN, CSO MEMBERS, AND MEMBERS OF THE OCEANS COMMUNITY. I APPRECIATE THE OPPORTUNITY TO SPEAK TO YOU TODAY, AND I'M HOPEFUL THAT YOUR WORKSHOP ON NOAA WILL BE USEFUL IF AND WHEN THE CONGRESS BEGINS TO ACTUALLY MOVE LEGISLATION.

QUITE FRANKLY, I MUST SAY THAT IT IS VERY DIFFICULT TO DISCUSS THE ORGANIC ACT, PER SE. THERE IS NOTHING MORE BORING THAN TALKING ABOUT A SERIES OF STATUTES WHICH NEED TO BE CODIFIED IN THE NAME OF AN "ORGANIC ACT". THEREFORE, I WILL REFUSE THAI OPTION AND ATTEMPT TO IDENTIFY AND DISCUSS SOME OF THE OCEAN USE ISSUES, SOME OLD AND SOME NEW, WHICH WILL CONFRONT US IN THIS DECADE. I SHOULD POINT OUT THAT I WILL LEAVE THE DISCUSSION OF ATMOSPHERIC SCIENCE ISSUES TO OTHER SPEAKERS, AND ALSO THAT MY LIST IS BY NO MEANS EXHAUSTIVE. BUT, I THINK THAT IN THE CONTEXT OF EVALUATING WHETHER WE NEED AN ORGANIC ACT, IT IS USEFUL TO LOOK AT THE TYPES OF ISSUES WE'LL BE CONFRONTING IN THE NEXT 10 YEARS, AND THEN MAKE THE JUDGMENT AS TO WHETHER THE EXISTING INSTITUTIONAL ARRANGEMENT IS ADEQUATE.

FIRST OF ALL, IN THE AREA OF FISHERIES IN THE 1980'S, WE ARE LIKELY TO SEE A MAJOR EXPANSION IN INVESTMENT TO INCREASE OUR HARVESTING AND PROCESSING CAPACITY, ESPECIALLY WITH SPECIES THAT WE HAVE NOT UTILIZED IN THE PAST. WE'RE ALREADY SEEING AN

EXPLOSION IN THIS AREA, WITH OVER $600 MILLION BEING INVESTED IN NEW VESSELS ALONE IN 1979. IN MANY DIFFERENT COASTAL AREAS OF THE COUNTRY, WE ARE SEEING NEW PROCESSING FACILITIES SPRINGING UP, MANY OF WHICH ARE ALSO PROBING NEW MARKETS FOR SPECIES PREVIOUSLY THROWN OVERBOARD.

THE ROAD TO UTILIZING MANY OF THESE STOCKS IS NOT GOING TO BE AN EASY ONE. THERE ARE EVEN LIKELY TO BE SOME FAILURES IN SOME AREAS WHERE INVESTORS GET TOO ANXIOUS ABOUT DEVELOPING NEW MARKETS AND IMMEDIATELY DISPLACING THE FOREIGN FISHERMEN. THE FCMA WAS DESIGNED TO ALLOW A GRADUAL TRANSITION AND BUILDUP OF FISHING CAPACITY FOR THOSE STOCKS WHICH U.S. FISHERMEN COULD CATCH AND MARKET. THE JOINT-VENTURE CONCEPT USED IN THE NORTHWEST HAS BEEN AN EXTREMELY VALUABLE INTERIM ARRANGEMENT WHICH PROVIDES FOR A GRADUAL BUILDUP OF HARVESTING CAPACITY AS WELL AS ACCESS TO MARKETS.

THE POINT IS, THE FCMA, AS WELL AS OTHER ASSERTIONS OF EXCLUSIVE MANAGEMENT AUTHORITY FOR LIVING RESOURCES AROUND THE WORLD, HAS CREATED A MUCH MORE STABLE REGIME FOR INVESTMENT IN FISHERIES THAN WE HAVE EVER WITNESSED BEFORE. AS A RESULT, THE LEVEL OF INVESTMENT, THE SCALE OF OPERATIONS, AND THE VERY NATURE OF THE COMMERCIAL FISHING INDUSTRY IS LIKELY TO CHANGE DRAMATICALLY IN THE 1980'S. WHILE MANY OF THE HISTORICAL INSHORE FISHERIES WILL NOT CHANGE AS DRAMATICALLY, THERE HAS ALREADY BEEN PROGRESS TOWARD MORE RATIONAL MANAGEMENT OF THESE STOCKS AS REGIONAL FISHERIES COUNCILS ARE FORCED TO DEVELOP FISHERIES MANAGEMENT PLANS (FMP'S). THIS EXERCISE, IN ITSELF,

ANOTHER ISSUE WHICH WILL EMERGE IN THE 1980'S WILL BE THE LACK OF CONTROL OF SYNTHETIC ORGANICS, SUCH AS PCB'S AND THEIR EFFECTS ON THE MARINE FOOD CHAIN, AND, EVENTUALLY, MAN. AS INCREASING ATTENTION IS PAID TO THE HARMFULNESS AND WIDESPREAD SOURCES OF THESE COMPOUNDS, IT WILL BE IMPORTANT TO MORE CLOSELY DIFFERENTIATE WHERE DREDGE SPOIL DISPOSAL CAN AND CANNOT OCCUR SAFELY. THE NOAA OCEAN POLLUTION PLAN HAS ESTABLISHED THAT THE RESEARCH AND MONITORING OF THESE MATERIALS IN THE MARINE ENVIRONMENT IS OF CRITICAL IMPORTANCE.

ON THE ISSUE OF DEEP SEABED MINING, I THINK IT HAS BECOME CLEAR THAT WE NEED TO PASS DOMESTIC LEGISLATION, AND THIS IS LIKELY TO HAPPEN THIS SPRING. IT APPEARS THAT NOAA WILL BECOME THE LEAD AGENCY FOR THIS ACTIVITY, AND, IN FACT, THIS MAY BE ONE CASE WHERE NOAA IS READY BEFORE THE INDUSTRY.

MUCH HAS BEEN SAID IN THE PAST ABOUT DEEP OCEAN MINING AND THE LAW OF THE SEA CONFERENCE SO I WILL NOT BELABOR THAT ISSUE. HOWEVER, IF AN LOS AGREEMENT IS NOT ACHIEVED AND RATIFIED, NOAA'S RELATIONSHIPS WITH THE STATE DEPARTMENT AND FOREIGN NATIONS WILL BECOME INCREASINGLY IMPORTANT. ONE OF THE MOST CRITICAL PROBLEMS WILL BE OBTAINING ACCESS TO COASTAL STATES' WATERS FOR RESEARCH PURPOSES, AND THIS COULD SIGNIFICANTLY RETARD OUR UNDERSTANDING OF MARINE AND COASTAL PROCESSES, SUCH AS UPWELLINGS. IT IS NOT CLEAR TO ME WHAT TYPE OF ARRANGEMENT NOAA SHOULD DEVELOP WITH THE STATE DEPARTMENT ON A NUMBER OF DIFFERENT ISSUES, BUT THIS IS CLEARLY SOMETHING FOR YOU PEOPLE TO WRESTLE WITH IN YOUR DISCUSSIONS.

OTEC DEVELOPMENT. GIVEN THE PLODDING R&D STRATEGY OF DOE WITH RESPECT TO OTEC, AND GIVEN THE LEVEL OF SUBSIDIES FOR OTHER ENERGY SOURCES, UNLESS THE DEPARTMENT OF COMMERCE BEGINS TO ADVOCATE OTEC DEVELOPMENT, WE ARE UNLIKELY TO SEE THE TECHNOLOGY DEVELOP UNTIL THE NEXT CENTURY.

NEVERTHELESS, WHEN THE SUBCOMMITTEE ON OCEANOGRAPHY RECENTLY HELD HEARINGS ON OTEC LEGISLATION, THE ADMINISTRATION OPPOSED IT. IT WAS NOT CLEAR, HOWEVER, THROUGHOUT THE HEARING WHETHER OMB SIMPLY OPPOSED THE LEGISLATION FOR THE REASONS STATED, OR BECAUSE THEY SENSED ANOTHER TURF-BATTLE COMING ON, AND RATHER THAN MAKE A DECISION WHETHER NOAA, MARAD, OR DOE WOULD BE THE LEAD AGENCY, THEY SIMPLY OPPOSED THE BILL. THIS TYPE OF BEHAVIOR BY THE ADMINISTRATION HAS OCCURRED IN THE PAST WITH OCEANS INITIATIVES AND IS LIKELY TO OCCUR IN THE FUTURE UNTIL WE REALLY HAVE AN OCEANS AGENCY WITH THE EQUIVALENT STATUS OF OTHER FEDERAL AGENCIES.

ON ANOTHER ENERGY-RELATED ISSUE -- THE SUB-SEABED EMPLACEMENT OF NUCLEAR WASTE MATERIALS -- OUR GOVERNMENT HAS NOT EVEN DONE THE ENVIRONMENTAL RESEARCH WHICH IS NECESSARY SO THAT AN INTELLIGENT DECISION COULD BE MADE IF OPPOSITION CONTINUES TO MOUNT AGAINST LAND-BASED SOLUTIONS. I'M CERTAINLY NOT ADVOCATING OCEAN DISPOSAL, BUT, AT SOME POINT, WHETHER THE U.S. DOES OR NOT, OTHER NATIONS, SUCH AS JAPAN AND THE U.K. ARE LIKELY TO CONSIDER THIS OPTION. AT THAT TIME, IT WOULD BE HELPFUL IF NOAA, DOE, AND EPA COULD HAVE COOPERATED SUFFICIENTLY TO HAVE THE NECESSARY DATA AVAILABLE TO MAKE A SOUND DECISION. AGAIN, HOWEVER, RESPONSIBILITIES REMAIN UNCLEAR.

THERE IS NO QUESTION THAT WE HAVE TO ACCEPT SOME DEGREE OF RISK AS WE DEVELOP OCS OIL AND GAS. HOWEVER, THE OCEANS AGENCY SHOULD BE DOING THE TYPE OF RESEARCH AND MONITORING AND DAMAGE ASSESSMENT WHICH CAN BE FACTORED INTO DECISION-MAKING ABOUT OCS DEVELOPMENT. WE SHOULD BE ABLE TO LEARN FROM SUCH DISASTERS AS IXTOC (ISH-TOK) SO AS TO BE ABLE TO MINIMIZE THE RISK OF SUCH DISASTERS IN THE FUTURE.

IN ADDITION, BECAUSE THE ENERGY ISSUE PERMEATES EVERYTHING THESE DAYS, WE NEED TO BEGIN TO LOOK MORE CLOSELY AT ALTERNATIVE ENERGY PRODUCING USES OF THE OCEANS. OCEAN THERMAL ENERGY CONVERSION (OTEC) IS ONE OF THE MOST RAPIDLY PROGRESSING AND EXCITING TECHNOLOGIES WITH CONSIDERABLE INTEREST IN THE PRIVATE SECTOR AMONG SUCH COMPANIES AS TRW, FAIRCHILD, GE, AND WESTINGHOUSE, AMONG OTHERS. OTEC IS STILL VERY MUCH AN INFANT TECHNOLOGY WITH MANY ENGINEERING AND SCALING PROBLEMS TO BE WORKED OUT, BUT ITS PRODUCTIVE POTENTIAL IS SIGNIFICANT AND I FEEL THAT WE NEED TO ATTEMPT TO ACCELERATE ITS DEVELOPMENT. THE VALUE OF OTEC IS THAT IT IS NON-HYDROCARBON AND NON-NUCLEAR, AND FOR THE MOST PART, IT APPEARS TO BE ENVIRONMENTALLY SOUND. I'M NOT SAYING THAT WE'RE LIKELY TO HAVE 50 OR 100 OTEC PLANTSHIPS "HUMMING AWAY" OFF HAWAII IN THIS DECADE, BUT OTEC APPEARS TO BE A PROMISING SOURCE OF ENERGY WHICH WE CANNOT AFFORD TO FOREGO. THEREFORE, I THINK WE NEED TO MAKE OTEC FACILITIES ELIGIBLE FOR TITLE XI LOAN GUARANTEES AS IS PROVIDED FOR IN H.R. 6154, THE EFFECT OF WHICH WOULD BE TO ACCELERATE THE FLOW OF CAPITAL INTO

HAS ALREADY OPENED UP DISCUSSION OF MANAGEMENT ALTERNATIVES, AND, IN MANY CASES, HAS ALREADY RESULTED IN IMPROVED MANAGEMENT DECISIONS. THE REFINEMENT OF THE FMP PROCESS FOR ALL HARVESTABLE SPECIES WILL BE A MAJOR TASK FOR THE OCEANS AGENCY IN THE 1980'S. AGAIN, WE HAVE TO ASK OURSELVES WHETHER THESE RESOURCE MANAGEMENT ISSUES CAN BE MORE EFFECTIVELY DEALT WITH IF WE HAVE A NOAA ORGANIC ACT AND A CLEARLY ESTABLISHED OCEANS AGENCY.

IN TERMS OF ENERGY-PRODUCING USES OF THE OCEAN, WE MUST RECOGNIZE THE IMPORTANCE OF THE OCS PRODUCTION OF HYDROCARBONS THROUGHOUT THE NEXT DECADE. THERE IS NO QUESTION THAT EXPLORATION FOR OIL AND GAS WILL INCREASE OFFSHORE AND ITS ECONOMIC VALUE WILL, IN THE SHORT-TERM, FAR EXCEED THAT OF OTHER OCEAN RESOURCES PRODUCED. THE PROBLEM, HOWEVER, FOR THE OCEANS AGENCY, IS ASSURING THAT THE RISK OF OCS PRODUCTION TO RENEWABLE MARINE RESOURCES IS MINIMIZED. THIS MEANS GIVING THE OCEANS AGENCY SOME DEGREE OF AUTHORITY OVER WHERE AND UNDER WHAT RESTRICTIONS DRILLING SHOULD OCCUR IN FRAGILE MARINE AREAS. THIS IS NOT TO SAY THAT NOAA SHOULD HAVE AUTHORITY TO REGULATE OCS DEVELOPMENT, BUT IT SHOULD HAVE THE AUTHORITY TO IDENTIFY HIGH-VALUE LIVING MARINE RESOURCE AREAS WHERE THE RISK OF CERTAIN TYPES OF OIL AND GAS OPERATIONS IS SIGNIFICANT; AND THE DEPARTMENT OF THE INTERIOR AND THE INDUSTRY SHOULD BE REQUIRED TO TAKE INTO ACCOUNT SUCH INFORMATION IN ITS LEASING AND OPERATIONS DECISIONS.

ONE FURTHER AREA IN FISHERIES MANAGEMENT WHICH NEEDS TO BE CAREFULLY CONSIDERED IN THE CONTEXT OF THE NOAA ORGANIC ACT IS THE CURRENT "COLD WAR" BETWEEN THE DEPARTMENTS OF THE INTERIOR AND COMMERCE AS TO WHO SHOULD MANAGE ANADROMOUS FISH STOCKS. BECAUSE I REPRESENT AN AREA WHERE ANADROMOUS FISH, NAMELY SALMON AND STEELHEAD, ARE PART OF OUR ECONOMY, AND CULTURE, I FIND IT EXTREMELY IMPORTANT THAT WE ATTEMPT TO RESOLVE SOME OF THE NON-PRODUCTIVE TURF-BATTLES OVER THIS IMPORTANT RESOURCE. IT SEEMS TO ME THAT WHEN ECONOMISTS TALK ABOUT THE SALMON RESOURCE BEING A COMMON PROPERTY RESOURCE, THIS RIGHTLY OR WRONGLY APPLIES TO AGENCIES AS WELL AS TO FISHERMEN. NOBODY OWNS IT, AND AS A RESULT WE TEND TO END UP WITH MORE CAPACITY THAN WE NEED TO ACTUALLY HARVEST THE FISH. I'M NOT SURE HOW FAR YOU CAN STRETCH THIS ANALOGY WITH OTHER OCEAN RESOURCES, BUT I DO KNOW THAT WHEN WE GET TO THE WATER'S EDGE, FEDERAL AGENCIES START STUMBLING OVER EACH OTHER IN ORDER TO SIMPLY CARRY OUT THE ACTIVITIES IN THE OCEAN, FUNCTIONALLY IN THE SAME WAY THEY DO ON LAND, WHETHER IT INVOLVES THE PRODUCTION OF ENERGY, MINERALS, OR FISH. THE PROBLEM IS THAT MANY USES, AS WELL AS AGENCY ACTIVITIES TEND TO CONVERGE AT THE WATER'S EDGE.

ORIGINAL PROPONENTS FOR THE CREATION OF NOAA, AND EARLY STRATTON COMMISSION FINDINGS EXPRESSED THE IMPORTANCE OF AN OCEANS AREA FOCUS AS A WAY OF BALANCING DIFFERENT OCEAN USES. THIS WAS A VALID CONCEPT THEN AND WILL BECOME INCREASINGLY IMPORTANT AS THE USES, AND THE INTENSITY OF THESE USES, OF OUR MARINE ENVIRONMENT INCREASE IN THE 1980'S.

THEREFORE, I MUST CONCLUDE THAT IF A NOAA ORGANIC ACT WOULD SECURE AND CLARIFY NOAA'S ROLE AS THE OCEANS AGENCY AND IMPROVE ITS ABILITY TO GET THE JOB DONE, THEN I WOULD HAVE TO SUPPORT SUCH LEGISLATION.

FINALLY, THERE IS ONE ISSUE WHICH I THINK THAT ALL OF US MUST GRAPPLE WITH IN DISCUSSIONS SUCH AS THESE -- AND THAT IS HOW WE CAN IMPROVE THE OVERALL PERFORMANCE OF OUR PUBLIC SECTOR WHILE RECEIVING LESS FUNDS, AND, AT THE SAME TIME, IMPROVE THE PRODUCTIVITY OF OUR ECONOMY AS A WHOLE. REGARDLESS OF THE ELECTORAL POLITICS OF 1980, THE ADMINISTRATION, THE CONGRESS, AND THE NATION AS A WHOLE WILL BE LOOKING FOR WAYS TO CUT WASTE AND DUPLICATION AND TO BALANCE THE FEDERAL BUDGET.

I AM CONVINCED THAT THE OCEANS WILL PLAY AN INCREASING ROLE IN PROVIDING VALUABLE RAW MATERIALS FOR A GROWING ECONOMY. NEVERTHELESS, WE MUST CONTINUE TO ATTEMPT TO STREAMLINE OCEAN RESOURCE MANAGEMENT DECISIONS AND CUT THROUGH THE BUREAUCRATIC MAZE WHICH OCCURS AT THE WATER'S EDGE. A TRUE OCEANS AGENCY SHOULD HAVE THE AUTHORITY TO PROMOTE, DEVELOP, PROTECT, AND, MOST OF ALL, <u>MANAGE</u> OCEAN RESOURCES. IF THIS IS NOT THE CASE, AND IF WE CANNOT CLARIFY THE OCEAN AGENCY JURISDICTIONS, THEN I MUST ASK YOU -- WHY DO WE REALLY NEED A NOAA ORGANIC ACT?

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STATE-FEDERAL INTERACTIONS FOR MANAGEMENT OF SHARED FISHERIES RESOURCES

by John P. Harville[1]

a contribution to the NOAA Organic Act Workshop
convened by the Coastal States Organization March 13-14, 1980

INTRODUCTION

Populations of fishes and other marine organisms range through ocean space in accordance with ecological limiting factors which coincide usually not at all with man-made jurisdictional boundaries. As result fragmented management jurisdiction over our living marine resources is the rule rather than the exception. Anadromous fishes such as salmon and striped bass traverse the territorial seas, estuaries, and river systems of a series of sovereign States in their extended migrations. For some important species these migrations also include the federally controlled offshore waters of the Fishery Conservation Zone. Tunas and other highly migratory species may span the world's oceans to enter the coastal waters of many nations on several continents. Most commercially important non-migratory species show geographic distribution through more than one political jurisdiction. Because of the genetic continuity of their populations, those species in the long run may be nearly as vulnerable to management inconsistencies as are the migratory species. For all these species, fishermen expect to be able to pursue their quarry across jurisdictional boundaries of no biological or oceanographic significance, despite their considerable political sensitivity.

To better protect and manage these living marine resources, we must improve the integration and coordination of our multijurisdictional management goals and operations. The United States Congress addressed this need in part by enacting the Fishery Conservation and Management Act of 1976. FCMA established U.S. fishery management jurisdiction over the Fishery Conservation Zone (FCZ) which extends from the three-mile limit of the States' territorial seas jurisdiction out to 200 miles from the U.S. shoreline. FCMA also created eight Regional Fishery Management Councils, and vested in them planning authority for management of fisheries within that extended jurisdiction zone. To guide those Councils and the multiple fisheries jurisdictions which must implement Council management plans, FCMA laid down seven National Standards which have truly revolutionized both process and product of U.S. fisheries management.

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[1]member, Panel 7: Management and Protection of Living Resources

The Fishery Conservation Act of 1976 was a landmark extension of regional rationality not only for management of fisheries but for government generally. However, the Act did not address certain of our continuing problems of fragmented jurisdiction, and it falls short of resolving a number of others. While administrative initiatives may address some of these problems, Congressional mandates will be required for others. Whether those Congressional initiatives should take the form of amendments to existing legislation or promulgation of new laws (such as a NOAA Organic Act) is a decision to be made by others who are knowledgable about legislative strategy.

As a contribution to that decision process, in this paper I propose to identify certain of the multijurisdictional problems which persist despite the impact of FCMA and to suggest some possible remedies. The following three general problem areas will be considered, with major attention in this paper to the first (since the others will be emphasized elsewhere):

a. the urgency for coordinated management of shared fisheries resources throughout the range of the species. (Note that management means not only planning and promulgation of regulations, but also includes fishery monitoring, data collection and interpretation, on-going relevant research, and effective enforcement practices.);

b. the need to accelerate U.S. development of fishery resources which presently are not effectively utilized by the U.S. fishing industry.

c. the importance of resolving ambiguities and built-in conflicts in existing federal laws which presently impede rational and effective protection and management of living marine resources.

A. COORDINATED FISHERIES MANAGEMENT THROUGHOUT THE RANGE OF THE POPULATION

INTER-RELATED PROBLEM ELEMENTS

(Note that these elements are identified to clarify the overall problem, not to suggest that each be changed. For example, I believe that the limitations in elements 1 and 2 are proper and appropriate; it is element 3 which needs remedial attention. See suggested remedial approaches.)

1. FCMA addresses principally the management of fisheries in the Fishery Conservation Zone (FCZ). The rule-making authority of the Secretary of Commerce encompasses the waters of the FCZ, for which FCMA established federal jurisdiction. However, the geographic range of most important commercial species, and the harvesting activities of fishermen, extend also into the territorial sea. FCMA quite properly did not abridge the authority of the States to manage living resources within their territorial seas; yet at the same time, National Standard #3 specifies that to the extent possible, fish stocks shall be managed as units throughout their geographic ranges.

2. Under FCMA provisions, the Regional Fishery Management Councils function principally as regional management planning entities. Their authority and funding encompass the highly complex area of management plan development, including recommendations for supportive regulations. Responsibility for all other aspects of management--fishery monitoring, data collection and analysis, relevant research, and enforcement, habitat protection--remain under the traditional jurisdiction of State and Federal fisheries (and other) agencies.

3. The broad aspects of fisheries management not specifically mandated under FCMA have failed to receive adequate attention from the Congress or from the Administration. As noted in problem elements 1 and 2, FCMA directly addresses only management planning and regulatory processes in the FCZ. This regional organization has been a quantum step forward in fisheries management, particularly in view of the greatly augmented scope of the management purview to address socioeconomic factors as well as more traditional biological-oceanographic considerations. Perhaps understandably, Congressional and Administrative attention has been almost totally preoccupied with facilitation of these primary tasks. The greatly increased burdens placed upon State and Federal agencies for implementation of management plans have been essentially ignored (e.g. for fisheries monitoring, data collection, research, enforcement, etc.). This problem has been exacerbated by related burdens placed upon the States by other Federal laws (e.g. Marine Mammal Protection Act, Endangered Species Act, NEPA, CZMA, etc.), too often without adequate facilitation for effective State-Federal cooperation and interaction.

SUGGESTED REMEDIAL APPROACHES

1. Maintain present FCMA definitions of management responsibility. Certainly the States strongly support FCMA's recognition of the traditional role of the sovereign States in management of living resources within their jurisdiction. On the Pacific Coast, our States have demonstrated the workability of cooperative implementation of fishery management plans developed by the Regional Councils and approved by the Secretary. The States have voluntarily enacted regulations governing fisheries within State waters which are parallel to and consonant with those promulgated by the Secretary for the FCZ. I believe this voluntary cooperative interaction will prevail so long as our States and their fisheries users continue to have an active role in development of management plans and supportive regulations.

   Similarly, I support the essentially administrative and planning role of the Regional Councils and their staffs. Operational implementation of plans certainly should remain with our State and Federal agencies. It would be a major error, wasteful of money and manpower, to set up a cadre of research, enforcement, and data management specialists within the Council structure in parallel with those resources already well established within State and Federal fisheries agencies.

However, as will be developed in some detail herewith, major Federal attention must be directed to assuring adequate support for implementation of management plans and for long-term improvements in the fundamental data base for those plans.

2. Establish and Support a Congressional mandate for cooperative State-Federal protection and management of shared fisheries resources.

   a. Fisheries management functions have been designated by the nation's State fisheries directors as highest priority area for augmentation of State-Federal programs.

      At the invitation of the National Marine Fisheries Service, the Directors of fisheries agencies for 28 coastal and Great Lakes States and five U.S. Territories met in Alexandria, Virginia January 29-31, 1980 for a workshop on State and Federal Roles, Responsibilities, and Interactions in the Management of Interjurisdictional Resources." Meeting with them were key NMFS and NOAA personnel and representatives of the eight Regional Fisheries Management Councils and the three interstate Marine Fisheries Commissions.

      As product of two days of regional workshop discussions, the State Directors concurred that the highest priority area for improved State-Federal programs relate directly to the management of shared fisheries resources in the broad context of four interdependent functions (all first priority):

      1) preparation of regional management plans for all shared fisheries (for fisheries subject to Regional Council jurisdiction and those outside Council purview--e.g. Territorial Sea species such as striped bass, menhaden);

      2) collection, organization, and interpretation of fisheries data derived from monitoring of fisheries to satisfy requirements defined in management plans;

      3) enforcement of regulations throughout the range of the fisheries; and

      4) management-related researches required to improve the information base (e.g., stock assessments, resource inventories, life history studies, etc.).

      While the State Fisheries Directors also indicated major concerns for other areas of State-Federal interactions, they assigned significantly lower priority to marine mammal and endangered species programs and to coastal zone management, and (with the exception of Territorial representatives) gave lowest priority to fisheries development programs.

Particularly the State Fisheries Directors called upon the federal government to recognize the major added burdens placed upon the States by Congressionally mandated programs[2] which require major changes and additions to the States' long-term responsibilities for fisheries data collection and interpretation, relevant research, habitat protection, and enforcement programs. They emphasized that while some federal support has been provided for planning and other special purposes, the States have received little if any federal assistance in meeting the burgeoning operational requirements mandated by these new federal laws. They indicated State willingness to accept a share of these tasks as consistent with State interests; however, they emphasized the need for reasonable federal participation in underwriting the heavy added costs of these new program requirements.

To address these needs, they urged more effective use of existing State-Federal programs (e.g., Commercial Fisheries Research and Development Act, Anadromous Fish Conservation Act) which have never been adequately funded despite the growing backlog of high-priority projects and the readiness of the States to provide requisite matching funds. They recommended use of Congressionally approved but yet unfunded programs such as Sec. 309 of CZMA (for cooperative multi-State programs); also they saw the need for an explicit overall Congressional mandate for more effective support of State-Federal cooperative programs for management of shared fisheries resources. Finally, they urged more effective coordination of NOAA and other federal programs relating to fisheries management, with particular emphasis upon the need for mutually supportive interactions among National Marine Fisheries Service, Coastal Zone Management, and Office of Sea Grant programs and staff.

Responding for the National Marine Fisheries Service, on Jan. 31, 1980, NOAA Assistant Administrator for Fisheries Terry Leitzell commended the recommendations of the State Fisheries Directors as useful input to the current review of NMFS State/Federal programs by his staff. He pledged prompt action by NOAA components (NMFS, OSG, CZM) to move toward greater coordination of fisheries-related projects and programs. He indicated full acceptance of the need for regional diversity in national planning, and the intent to follow up promptly with regional exploration of ways to improve State/Federal interactions for fisheries conservation and management.

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[2]Federal legislation placing significant added burdens upon State management of living resources include the Fishery Management and Conservation Act (FCMA), Marine Mammal Protection Act (MMPA), Endangered Species Act (ESA), National Environmental Protection Act (NEPA), and Coastal Zone Management Act (CZMA).

b. Proposed Congressional/Administrative actions (summary). In view of the concerns which generated the recent conference of State Fisheries Directors with NMFS/NOAA personnel and which are the focus also of the present CSO-sponsored workshop, I suggest the following actions:

1) Congressional action to establish the intent of Congress that Federal support will be provided to assist the States to carry out the much increased responsibilities for fisheries protection and management which are a product of new Federal legislation. These include relevant fisheries monitoring programs, data collection and analysis, management-related research, and enforcement of regulations.

2) Congressional extension of existing legislative authority (or enactment of new legislation if necessary) to encourage development of comprehensive management plans for multijurisdictional fisheries not subject to Regional Council planning (e.g., fisheries essentially restricted to the Territorial Seas of contiguous States); and to support implementation of these plans.

3) Congressional insistence upon and support for adequate funding under existing laws of Congressionally mandated programs designed to provide support for these State-Federal cooperative interactions. Programs already approved by Congress but never adequately funded due principally to resistance from the Administration's Office of Management and Budget include:

   a) Commercial Fisheries Research and Development Act (P.L. 88-309 as amended): authorized at $10 million; level-funded at $3.7 million until 1978, at $5 million since 1978.

   b) Anadromous Fish Conservation Act (P.L. 89-304 as amended): authorized at minimum of $10 million through Depts. of Interior and Commerce; Commerce portion level-funded at $2 million since 1971.

   c) Coastal Zone Management Act (P.L. 92-583, as amended): Sec. 309, authorizing cooperative interstate grants, has never been funded despite major needs for multi-State attention to protection and management of shared bays, estuaries, and other coastal areas of vital importance for fish passage, spawning, and nursery-ground uses. Unless Congressional action prevents it, this potentially useful section of the Coastal Zone Act may be deleted due to OMB opposition to its funding.

B. DEVELOPMENT OF FISHERY RESOURCES PRESENTLY NOT EFFECTIVELY UTILIZED BY THE U S. FISHING INDUSTRY

One of the six purposes stated in the Fishery Conservation and Management Act of 1976 was "to encourage the development of fisheries which are currently underutilized or not utilized by United States fishermen..." Clearly FCMA--the 200-mile bill--took a key enabling step toward that objective by endowing the U.S. fishing industry with priority access to rich fishery resources which previously had been harvested almost exclusively by foreigners. However, priority access alone does not assure development of U.S. capacity to take advantage of that access. Given the multi-million dollar value of these rich renewable resources off our shores, but given also our high wages, standard of living, and environmental quality standards, can we as a nation establish the favorable economic climate, develop requisite technologies, and commit the resources of manpower and materiel to fully use these resources for U.S. benefit?

MAJOR IMPEDIMENTS TO FISHERIES DEVELOPMENT INCLUDE:

1. Lack of a clear Congressional mandate for effective governmental assistance to fisheries development. Legislation is pending, but significant policy differences must be resolved among alternatives proposed.

2. Legal and economic constraints, many of them rooted in Federal laws depress the climate for private investment and/or actively constrain the development process. Examples include unduly restrictive maritime laws (e.g., Jones Act restrictions against use of foreign hulls in the Pacific Island Territories), unrealistic point-discharge effluent standards for fish processing plants, and failure to recognize the key importance of processing, distribution, and marketing in fisheries development, with resultant limitations on appropriate financial assistance (e.g., extension of Capital Construction Fund opportunities to fisheries shoreside support facilities).

3. Technological problems of high-risk nature, therefore requiring reasonable governmental participation in their resolution (e.g., poor keeping qualities of unprocessed Pacific hake; need for more complete recovery of marketable products from large-volume low-value fisheries such as hake and pollock; need for new product development from these fisheries, etc.).

RECENT SUPPORTIVE ACTIONS:

1. Results of Eastland Fisheries Survey (1975-77) provided Congress and the Administration with recommendations concerning the Federal role in fisheries development based upon input from thousands of individuals and organizations from all three coasts of the United States, the Great Lakes, and the Pacific Island Territories. A major section of the Survey's official Report to the Congress[3] offered

[3]Eastland Fisheries Survey--a Report to the Congress. 1977, 91 pp.

recommendations for federal participation in development of commercial fisheries. A summary of that section is appended to this paper.

Recommendations of particular interest include:

- designate "fish for food" as highest national priority;
- establish an Office of Fishery Policy with strong fishing industry representation;
- improve economic climate for private investment through tax incentives, long-term loans, etc., which include shore-side support facilities;
- consolidate and where necessary revise tax and insurance provisions to encourage fisheries development;
- expand domestic and foreign markets by improving techniques for storage, transport, and retail sales of fisheries products;
- revise fish processing effluent standards to take into account their biodegradable character.

2. Over-ride of OMB deferral of Saltonstall-Kennedy funding for fisheries development by action of the Senate (S.R. 50, passed March 13, 1979). This action clearly established the intent of Congress that S-K funds be used to stimulate fisheries development programs.

3. Formation of fisheries development foundations through initiatives by the fishing industry, with assistance from and support of the Federal government. Fishery development foundations now are operational in the Pacific Basin (Pacific Tuna Development Foundation), South Atlantic-Gulf Coast, West Coast, and Alaska as vehicles for joint private sector-governmental support for coherent regional fishery development programs.

4. A new Administrative policy for fisheries development was announced by the President at a NOAA/Department of Commerce National Conference on Fisheries Development in Springfield, Va., May 23-24, 1979. This new policy constitutes a major direction change from the previous Administration position which denied any significant role for the Federal government in fisheries development.

   The Presidents' new national policy established six principles which can be summarized as follows:

   - Reaffirmation of the goals of FCMA to include conservation and management of fishery resources to assure continuing optimum yield and provide a major source of employment and economic benefits to American coastal communities.

- Development of an active and innovative partnership among the fishing industry, State and local governments, and the Federal government, which does not rely on massive infusion of federal funds, but rather is based on a mutual desire to limit federal intervention, protect our environment, perpetuate our resources, expand our harvesting and development potential, and meet our responsibilities to produce sufficient food.

- Respond to the need for federal financial assistance through legislation to support development of new fisheries.

- Coordinate federal governmental services to assure improved utilization of existing federal programs for fishing industry assistance and economic development.

- Reduce the burden of unnecessary federal regulation by analyzing economic impacts on the fishing industry and insuring that both impacts and benefits are considered before regulations are adopted or modified.

- Improve access for U.S. fish products to foreign markets.

SUGGESTED SUPPORTIVE ACTIONS

1. Congressional action to establish and fund a National Fisheries Development Program with emphasis upon, but not restricted to, development of fisheries resources not presently effectively utilized by the U.S. fishing industry (per draft legislation presently under consideration in both Houses of Congress).

2. Congressional action to establish support for:
   a. continuation of Saltonstall-Kennedy funding for private sector and governmental initiatives in fisheries development (and thereby resist Administration attempts to replace S-K funding with in-house-controlled funding);

   b. strong support for development of coherent regional plans for fisheries development, and therefore for preferential funding of projects consistent with those regional plans; also insistence that these programs be developed with significant guidance and input from the private sector; (note that the regional fisheries development foundations were created to facilitate this private sector role.)

   c. immediate extension of Capital Construction Fund opportunities to shoreside processing and other fisheries support services and facilities;

   d. revision of unnecessary legislative constraints on fisheries development (e.g., strict application to the Pacific Islands of Jones Act and FCMA limitations on vessel hull origins).

C. RESOLVE CONFLICTS AMONG EXISTING FEDERAL LAWS

Through a NOAA Organic Act or other appropriate mechanisms, inconsistencies or unnecessary conflicts in existing federal laws should be resolved. Areas of significant conflict which presently inhibit effective protection, management and development of marine living resources include:

- unrealistic fish processing effluent standards established under NEPA;
- unnecessarily cumbersome administrative practices required of the Regional Fishery Management Councils to conform with requirements of NEPA and the Federal Advisory Committee Act;
- serious inconsistencies between the ecological management principles of FCMA and the exempt status accorded selected components of the ecosystem by the Marine Mammal Protection Act.

Since these areas of inconsistency and conflict have been reviewed extensively elsewhere, they will be noted only briefly in the present paper.

1. Seafood processing effluent standards

Seafood processing wastes are fully biodegradable, and in proper dilution may actually constitute enrichment to nutrient-deficient waters. Yet EPA guidelines, based on the point-discharge approach to effluent control, take no account of this ecological compatibility of seafood processing wastes, given intellegent control of dilution factors.

In order to prevent enormous added costs for unnecessary removal of potentially useful nutrients from seafood processing wastes, a change in EPA policy and practice must be brought about. EPA guidelines should take into account the biodegradable nature of seafood wastes, and therefore establish standards based upon the carrying capacity of the receiving waters.

This rationale was effectively presented in 1973 by the National Water Commission in its final report to the President and the Congress: "New Directions in U.S. Water Policy--Summary, Conclusions, and Recommendations." The following excerpts are pertinent:

> Water quality is only one of many goals for a whole society. Public expenditures for water pollution abatement must compete for limited tax moneys with social demands for housing, education, medical care, slum clearance, full employment, and price stability...
>
> The Federal Water Pollution Control Act Amendments of 1972, while making landmark improvements in the Nation's attack on water pollution, have made a fundamental error in establishing as a national goal the elimination of all

pollutant discharges into national bodies of water by 1985. This "zero-discharge" policy has strong emotional appeal, but in the Commission's judgment is an impractical and unattainable goal. Striving to achieve it will involve exorbitant costs, confusion in planning, misallocation of resources, and will risk public disillusionment with the entire national effort to protect the environment.

...These costs of achieving the no-discharge goal must be viewed in terms of the sacrifices society will be compelled to make in other social demands and in terms of the large amounts of scarce energy and natural resources which will be consumed...

...In the Commission's view a water quality control program should endeavor to ascertain the economically desirable and the socially preferred uses of specific water bodies and set quality standards in relation to the preferred uses. To adopt a "zero-discharge" policy for the return of all waters to their natural state precludes the use of waters for waste disposal purposes in circumstances where that use is environmentally and economically sound, socially acceptable, and utterly rational.

...Discharge limitations should be based on local receiving water standards, taking into account the self-purifying capacity of natural water bodies. Such capacity should be allocated, with appropriate safety factors, to existing discharges, conservation and recreation reserves, and a reserve for future discharges in accordance with applicable land use and comprehensive water quality plans.

2. Removal of needless constraints on Regional Council operations. Congressional action may be required to remove unnecessary and expensive bureaucratic constraints upon efficient operation of the Regional Fishery Management Councils. From more than three years of service on two Regional Councils, I believe that valuable time and excessive public funds are being wasted by enforced compliance of FCMA operations with other Federal laws. Quite possibly the only action required is a statement of Congressional intent to avoid these needless bureaucratic impediments. The following examples should be considered.

   a. Requirements for an Environmental Impact Statement to satisfy NEPA standards to accompany Fishery Management Plans. The public review and comment requirements written into the Fishery Conservation and Management Act are at least as exacting as those under NEPA. There appears to be no defensible need for a duplicative parallel NEPA review process, which always costs staff time and money, and usually delays the public review process.

b. Enforced compliance of all Council operations with Federal Advisory Committee Act (FACA) requirements. For obvious practical reasons, we need to consider some amelioration of the rigorous constraints imposed by FACA on Council meeting arrangements and schedules. Advertisement of every meeting of Councils, Advisory Panels, and Scientific and Statistical Committees in the Federal Register imposes a 45-day setback time on all planning. In most cases, this serves no useful purpose since most concerned individuals and organizations never see the Federal Register. In the interests of effective public information as well as efficient Council operations, some reasonable alternatives involving local and regional advertising should be considered as a reasonable alternative.

3. Rationalization of Marine Mammal Protection Act requirements with the ecosystem management principles of FCMA. Most fisheries managers and users of fishery resources are united in the conviction that marine mammals should be subject to the same conservation and management principles which apply to other elements of the marine ecosystem. Instead, under the provisions of the Marine Mammal Protection Act of 1972, all marine mammals, regardless of their population size or impacts upon the ecosystem, are blanketed under the total protection of a moratorium on taking or even harassment. While a permit system allows for exceptions in special cases, it is cumbersome and costly to administer, and not a realistic answer to the problem.

Past resolutions of the Pacific Marine Fisheries Commission have addressed this problem repeatedly, emphasizing the severe economic impact of burgeoning marine mammal populations upon fisheries through destruction of gear and unchecked predation on desirable fish species, and urging that the Marine Mammal Protection Act be brought into conformance with the Endangered Species Act and the Fisheries Conservation and Management Act.

PMFC's 1975 resolution stressed the unrealistic restrictions placed upon responsible management of the nation's living marine resources by certain of the definitions set forward in the Marine Mammal Protection Act, and emphasized the cumbersome procedures whereby States are permitted to participate in management of marine mammals. The resolution urged that such terms as "depletion", "moratorium", and "take" be redefined "so that State and Federal agencies can consider all animals in the marine ecosystem when managing the ocean's fisheries resources"; also that the Marine Mammal Protection Act be amended so that the goal of reducing mammal mortality incidental to commercial fishing be defined in more practical and realistic terms. PMFC's 1976 resolution reaffirmed its recommendations of the previous year concerning amendment of the Act to redefine terms and definitions in a manner that would permit an ecosystem approach to marine

mammal management. The resolution further urged that the Act be revised to encourage the States and other competent research entities to conduct biologic, ecologic, and economic studies to evaluate the impacts of the Act upon the ecosystems affected, and upon the conservation and utilization of the total resources of those ecosystems. A 1977 resolution reiterated these earlier positions and urged that the Congress "amend the Marine Mammal Protection Act to bring the objectives of that Act within the framework of the concept of conservation, development, and utilization of fishery resources, and facilitate return to the States of marine mammal management within the limits of State jurisdiction."

In support of those carefully considered and unanimously supported resolutions, I urge that in the very near future the Congress review the areas of extensive inconsistency, overlap, and confusion brought about in our attempt to implement simultaneously the Marine Mammal Protection Act of 1972, the Endangered Species Act of 1973, and the Fishery Conservation and Management Act of 1976. I believe the Marine Mammal Protection Act of 1972 either should be superceded entirely by the Endangered Species Act, or should be fundamentally restructured to parallel the Endangered Species Act in concept and be consistent with it and with the Fishery Conservation and Management Act of 1976.

My reasons for this recommendation reflect both ecological and practical considerations. The Endangered Species Act and the Fishery Conservation and Management Act are rational and cost-effective in three critical areas wherein the Marine Mammal Protection Act is seriously flawed.

First, the Endangered Species Act applies special protective measures only to those species and stocks which, on the basis of best available scientific information, are designated either endangered or threatened. Therefore expensive protective measures are undertaken only where there is consensus concerning need. By contrast, the Marine Mammal Protection Act places all marine mammals under moratorium--which means no taking"--a term defined to include even harassment! Exceptions from this blanket total-protection mandate may be allowed only on the basis of cumbersome, time-consuming, and expensive processing of permit applications.

Second, the FCMA provides for management of marine resources in accordance with the ecosystem concept, and establishes important new national Standards which truly rationalize the management process. Three of those Standards are truly innovative, calling for optimum yield (rather than maximum yield), management of each stock as a unit throughout its range, and promotion of economic efficiency. For any fishery significantly impinged by marine mammal predation or competition, these Standards inevitably will be infringed by the limitations of the Marine Mammal Protection Act. One cannot truly optimize yield if a dominant predator within the ecosystem is beyond management

control (e.g. by blanket protection under the marine mammal moratorium). If the only relief from this total restriction is via the complex permit system required under the Marine Mammal Protection Act, these expensive processes place a heavy cost overburden on the entire process.

Third, both the Endangered Species Act and the FCMA provide for effective, easily administered interactions between Federal and State management agencies in the cooperative pursuit of shared objectives. By contrast, the Marine Mammal Act preempted State jurisdictions entirely, and provided for return of controls to the States only via extremely cumbersome and costly processes.

The need for rationalization of this legislation is particularly acute for protection of fisheries resources along the Pacific coast where the cost of marine mammal depredations increases yearly. In the Pacific Northwest, sea lions and harbor seals are prime predators on valuable salmon and groundfish stocks. These species have never been either "threatened" or "endangered" in population strength, yet the Marine Mammal Protection Act has accorded them the kind of total protection that would be provided only for truly endangered species under the Endangered Species Act. We believe the time is right for a careful review of this entire complex of conflicting legislation, and revision where necessary to make it rational and operational in accordance with the concept of total ecosystem management.

This concludes discussion and recommendations for the present paper.

STATEMENT OF GUSTAVE FRITSCHIE

DIRECTOR OF GOVERNMENT RELATIONS

THE NATIONAL FISHERIES INSTITUTE

The development of a National Ocean Policy for the government with particular emphasis on resource development and management has long been of interest to the National Fisheries Institute. The Institute is a broad based national trade association representing more than 900 member companies and affiliated trade associations which harvest, process and distribute fish, seafood and marine products. As harvesters and processors of one of the major ocean resources, the Institute's membership recognizes that it will be impacted by the evolution in this nation's approach to ocean policy and the organizational structure which will be designated to implement that policy.

In recent years the ocean has been increasingly recognized as a source of important renewable and non-renewable resources, including fisheries oil and gas manganese nodules and as an environment utilized for recreation, commercial transportation, military activities and the dumping of waste. In addition, man's activities within the land segment of the coastal zone have been determined to have a significant impact on all resources located within the coastal zone.

The growing complexity of ocean uses and the interrelationship between ocean activities are factors somewhat unique to the marine environment. The diversity of ocean uses, the immensity of ocean resources and the legal status of such resources places a demand on the government to resolve conflicts between potential uses and to ensure that the development of the ocean's wealth is done in a manner which protects the marine and coastal environments. This already complex scenario is further complicated by the interest which other nations have in resources located in the oceans, particularly within ocean areas over which the United States exercises varying degrees of control.

An early government response to fishery conflicts was President Truman's proclamation in 1945 regarding the establishment of conservation zones for the purpose of regulating fishing activities. This proclamation also asserted inclusive U. S. jurisdiction over the subsoil and seabed of the Outer Continental Shelf.

Another response was the report of the Stratton Commission, published in 1969 concerning problems dealing with oceans management. The major recommendation of the Stratton Commission - that an independent oceans agency be established - resulted in the establishment of the National Oceanic and Atmospheric Administration pursuant

to Reorganization Plan No. 4 of 1970. Congressional actions which have added to this oceans management quilt include the National Environmental Policy Act of 1969, the Marine Mammal Protection Act of 1972, the Coastal Zone Management Act, the Marine Protection Research and Sanctuaries Act, the Fishery Conservation & Management Act of 1976, Amendments to the Federal Water Pollution Control Act in 1972, in 1977, the Outer Continental Lands Act Amendment to 1978, and finally the National Ocean Pollution Research and Monitoring Planning Act of 1978.

While each administrative or legislative action has significant merit, no single proposal enunciates a comprehensive national policy for the ocean. More importantly, the legislation is not administered in integrated coordinated fashion which would permit the defacto formulation of an ocean policy.

The absence of an integrated ocean policy with a strong focal point within the federal government is not a new revelation. Staff papers prepared by the Reorganization Project within the Office of Management and Budget recognized this fact. The Food and Nutrition Study prepared by the Reorganization Project identified as a major problem in the area of aquatic food resources, the lack of an overall United States policy to guide the development of fisheries and aquaculture. That study identified more than 21 agencies and 14 congressional committees which are involved in the ocean fisheries and aquaculture areas and stated, "fisheries tend to take a backseat" in overall oceans policy planning. The National Advisory Committee on Oceans and Atmosphere in a report to the President in November of 1978 found that the United States has not yet succeeded in developing a full economic potential of the oceans and concluded that the heart of all is "the fragmentation of policy making and the scattering of ocean activities through the myriad of agencies, departments and fiefdoms."

Members of Congress, including Senator Ernest Hollings, Chairman Jack Murphy, and Chairman John Breaux, have analyzed the current situation and all have reached conclusions similar to that stated by Senator Hollings in 1976, "with so much at stake, the United States should have long since have developed and implemented a comprehensive ocean policy."

The failure of current U. S. policy to manage ocean and coastal resources in a manner which balances the development of ocean and coastal resources with the protection of such resources has directly impacted the seafood industry. Significant over-fishing even under the auspices of international regimes, the elimination of wetlands areas through dredge and fill activities, the discharge of toxic materials such as mercury, pesticides, and other contaminants into the marine environment,

the establishment by the Congress of divergent resource management goals for various components of the marine ecosystem and the threats posed by efforts to meet the nation's energy goals both through energy transportation and OCS oil and gas exploration are illustrative of existing conflicts. The role of fisheries within the federal agencies charged with ocean responsibilities has often been less than visible and even within NOAA there appears at times to be more of an emphasis on other components of that agency's program. In short, the economic development of this nation's fishery resources by American industry has not in the past been a major government policy objective.

Given the premise that there is the lack of a coordinated ocean policy and that the seafood industry is impacted by this deficiency, what role will a NOAA Organic Act play in providing a solution? The enactment of organic legislation will provide a statutory mandate for the agency designated to implement the nation's ocean management policy. The legislation should serve to minimize contradictory mandates articulated by other federal agencies, including the Departments of State, Treasury, Agriculture, and others and provide a needed coordination mechanism.

An understanding by other entities in the government that NOAA is to play a lead role in the management and development of ocean fishery resources under the Fishery Conservation and Management Act and related statutes will benefit the industry. Heightened emphasis on the development of our fishery resources and the achievement of the full economic potential of these resources will also benefit the industry. Deserved or not, there is a feeling within the seafood industry that much of the current focus on fishery issues is devoted to management with resulting budgetary and personnel reductions in development efforts.

Finally, the designation of NOAA as the lead agency for ocean's policy should help ensure that the person appointed will have an oceans orientation and will recognize the peculiar characteristics of ocean uses and the interrelationships between such uses. A more independent status for NOAA should assist the agency in meeting the various mandates prescribed by the Congress. It goes without saying that this argument could be more effectively made if NOAA was to have the status of an independent ocean agency or a new department within the executive branch.

I believe the adoption of an organic act will resolve many administrative difficulties which have beset NOAA, as a result of the cumulative impact of added authority over the past decade and will assist in ensuring that oceans interests, including fishing, are considered more effectively within the government system.

I do not believe the legislation will resolve difficulties associated with oceans management.

As we move into the 1980s there is continuing debate with regard to the most productive use of the oceans. Offshore oil and gas development, marine mammal and endangered species management, fisheries management and development, ocean mining, ocean research, are just a few of the activities which take place in that environment. When viewed from the perspective of the seafood industry, the diversity of the uses within the marine environment necessitates movement toward a more structured management of the ocean and coastal areas.

While there has been much legislation, rule making and litigation involving the management of onshore lands under federal control, there has been relatively little activity with regard to ocean areas and the coastal zone. Landward areas under federal control are regulated under the Multiple Use Sustained Yield Act, the National Forest Management Act, the National Wildlife Refuge System Administration Act, the Wilderness Act and specific statutes regarding the management of birds and other wildlife. While an examination of a compilation of federal laws relating to this nation's fish and wildlife resources environmental quality and oceanography identified many statutes and programs affecting the environment, fish resources, oceanography, water resources and water pollution, there is no single statute which sets forth a comprehensive multiple-use management regime for ocean and coastal area resources.

Much of the legislation enacted by the Congress, such as the Fishery Conservation and Management Act is predicated on a dominant use management principle. Of concern to the industry are other statutes based on the same management scheme which may either impact fisheries or even preclude fishery activities within the areas regulated under other statutes. Fortunately for the industry the Congress has recognized the significant value of fishery resources. Other statutes contain clear language emphasizing the importance of such resources and in many instances mandating consideration of the impact on fishery resources of other ocean uses.

As stated above, the organic act does not address the complicated issues involved in the development of any resource management plan. Much of the conflict that exists has been caused by differing mandates enacted by the Congress and it will be necessary at some point to address the issue. At this time the Institute has no position on the type of legislation necessary, but stands willing to participate in the debate on this issue.

The subject of most interest to the seafood industry at this time is fisheries development. There is much legislative activity related to that topic which is completely separate from consideration of organic legislation. In testimony before both the House and Senate Committees, NFI has strongly indicated that the adoption of legislation to expand and restate the Saltonstall-Kennedy fund and to extend certain financial programs to the shoreside segments of the fishing industry is imperative if this nation is to develop the resources within the 200 mile zone. The industry has been concerned that emphasis within the National Marine Fisheries Service on its fisheries management responsibility under the FCMA has diverted money and staff from fisheries development activity both at the national office and in the regional offices. Also impacted by this emphasis on fisheries management has been the state/federal program. The legislation introduced by Chairman Breaux provides for an Assistant Administrator for fisheries development and if supported with appropriate funding and staff, this proposal may assist in upgrading the visibility of the government's fishery development functions. The legislation does leave unclear the future role of the National Marine Fisheries Service and how the components of that Service would be split between the Assistant Administrators for Management and Development.

An important component of fisheries development will be efforts by the government to assist in expanding overseas markets by taking steps to eliminate overseas tariff and non-tariff trade barriers and to encourage those nations which wish to have access to resources within the Fishery Conservation Zone to import more fishery products from the United States. This effort has been limited by a long-standing diminished role for fisheries in the arena of the United States, Foreign and International Trade Policy. Provisions of the Organic Act which upgrade NOAA's involvement in international meetings and negotiations should assist the agency in carrying out this segment of a fisheries development policy.

A final issue which this panel has asked to address is the subject, "Is the FCMA working?" The FCMA can be viewed as the most comprehensive and in some respects complicated management statute enacted by the Congress. While for many parts of the seafood industry the basic rationale for the bill was to eliminate foreign fishing within the zone, the Act goes further than that and provides for comprehensive management plans to be drawn up by the regional fishery management councils.

Such plans must be consistent with national standards set forth in the Act and with other applicable law.

In testimony last year before Chairman Breaux's Fishery Subcommittee, the Institute took the position that, in general, the Act is working. Management plans are being developed by each of the councils, foreign fishing has been significantly reduced, industry members are participating in the development of plans both as members of the councils and as members of advisory committees and there is in place a mechanism to prevent over fishing and to permit the rebuilding fish stocks.

That is not to say there have not been problems. The industry questions the status of the councils, the role of the Secretary and the Federal government in managing the fisheries, time spans associated with the FMP process caused by NEPA and rule-making requirements, the relationship between the fishery management and fisheries development, the definition of OY and debates the Act's potential to completely eliminate foreign fishing in all or most of the U. S. fisheries. On balance, the Act has been effective and while there are problems, the government, industry and other interested parties are working toward solutions.

In summary, the adoption of a NOAA Organic Act will provide a needed statutory basis for NOAA as it continues to administer its many responsibilities granted by the Congress. Such legislation may also preclude the likelihood that the executive branch may seek to transfer the agency to another department of the government which for many reasons may not be as equipped to implement a major oceans program. Conversely, the legislation is not the proper vehicle to address the complex issue of comprehensive oceans management, an expanding government role for fisheries development, except in a limited sense, or to address problems associated with implementation of the Fishery Conservation and Management Act. It is important that the United States seafood industry recognize that we do not utilize ocean resources in a vacuum but must be prepared to engage in significant debate within and outside the government regarding the role of the ocean as a significant asset to the nation and the priority placed on fishery resource management and development by the federal and state governments.

COMMENTS ON STEWARDSHIP

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I wish to point out a deficiency in the draft legislation - a lack of emphasis that bears on the welfare of all living resources and the commercial and recreational fisheries alike.

The current drafts of the organic act were written by people interested in administration, research, management, development, and harvest of the fishery resources. Also by those interested in the physical, chemical, and to some extent the biological aspects of the oceans and atmosphere. Data collection, monitoring, assessments, coordination, and enforcement of regulations are mentioned often, as are services to industry and the public. This is not unusual or objectionable, considering the many legislative mandates received by NOAA and its predecessors in their long history.

However, within NOAA, the National Marine Fisheries Service works almost exclusively with living natural resources of many kinds, usually fishes and mammals of many species. The Service must be aware not only of the complicated relationships among these resources (predator-prey connections among fishes, or between fishes and mammals, for example), but also their vulnerability to harvest by man. It must also recognize the environmental needs for each species, and accept the responsibility for seeing that these needs are met so that the species survive and prosper.

In the draft, little recognition is given to the fact that if the biological features of the oceans and estuaries are not protected and enhanced, there will be fewer living resources to develop, harvest, and manage. The fundamental provision lacking in the legislative drafts is an acknowledgement of existing authorities and responsibilities within NOAA for protection against environmental degradation or complete loss of habitat,

especially in the face of competing economic developments. Whole resource bases can be lost when spawning and nursery areas are drained, channeled, bulkheaded, or polluted, or when sources of essential nutrients are walled off from inshore areas where conversion into biomass takes place.

To pursue the obvious a little further, many of the uses made by man of oceans and estuaries are based upon undiminished biological production. Growth of fish and shellfish for human food, yields of animal feeds in great quantity, generation of oxygen, and degradation of wastes are important biological functions. The biological part of the ocean is the fragile part. The living components are renewable and harvestable only if the right conditions are maintained.

Some of these conditions are not under the control of NOAA even though they affect living resources. Other agencies control the dumping and dredging and filling, or the mining and pumping, or the chemical applications on agricultural lands that eventually drain into streams and shallow shores. To give NOAA some voice in the control of environmental factors that govern its primary resources, inspection and permit systems or strong surveillance procedures should be retained when existing laws are blanketed into an organic umbrella.

The concept that is almost lacking in H.R. 5347 and is barely acknowledged in current NOAA drafts is an emphasis on stewardship - on caring for the marine and estuarine environment. This concept needs visibility in the findings, purposes, policies, and titles of the organic legislation, and an organizational home. We are told: "It's in there", but it should be in strong words, not by inference. It is a responsibility not only to industry and to the public but also to the resources themselves, for today as well as tomorrow.

NOAA Organic Act Workshop
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Marine Mammals and Endangered Species

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I will confine my remarks to marine mammals. They are excellent examples of a wide variety of subjects before us, especially the need for conservation and management of coastal and marine species and habitats in the face of our ignorance about their ecosystems, and, how such management must be guided through an array of often conflicting agency policies, mandates, and goals.

Prior to the Marine Mammal Protection Act of 1972, marine mammals were managed by various state, federal, and international means. Some species were not considered at all. Basic research was most varied in the Office of Naval Research, with a token in the National Science Foundation and the National Institutes of Health, rather than in government agencies responsible for management. Marine mammal research was, in fact, in a crack between oceanography, which concerned itself with post-planktonic matters hardly at all, and fisheries which in many cases considered marine mammals to be the "enemy". After all, seals and whales eat fish don't they, and they also get tangled in nets.

Then, about 1970, the lid blew off the pots which had been steaming for a number of years regarding exploitation of whales and seals and endangered species such as manatees. And with very good reason. The Marine Mammal Protection Act tried to put some rationale into the very diverse opinions involved. It set up a Marine Mammal Commission to oversee agencies involved in marine mammal affairs on behalf of the President, the Congress, and the People. Marine mammals, further, were to be managed and/or conserved within policies of "optimum sustainable population" and "health of ecosystems". The MMPA was, in may ways, milestone legislation. The MMC was a new kind of Commission. OSP and ecosystem policies were correct, if theoretical and difficult. Maximum sustainable yield was, rightly, put to sleep for all sorts of good reasons, not the least being the unsound biological and ecological basis on which its determinism rests -- at least in the cases of marine mammals and other large oceanic predators.

And so we came upon challenging times, not made easier by the fact that marine mammals -- and endangered species too -- were divided into two agencies, Interior's Fish and Wildlife Service and NOAA's National Marine Fisheries Service. This admittedly artificial division could, I think, have been overriden should both agencies have mutually come to the aid of marine mammals and to collaborate in their behalf. Needless to say, it did not always work out that way. Nor did the states, excluded from jurisdiction by the MMPA, always cooperate as fully as they might. Thus, the agencies did not perform adequately at first, in either research or management. They were short of manpower and attitudes had to change to meet changing demands. Certainly, the OMB did not give them sufficient funds. In the gap, the Marine Mammal Commission was looked upon as a filler, but OMB and the Congress gave it woefully little help, even given great public concern.

There are now signs of considerable improvement. The FWS, for example, has a functioning manatee program, though its efforts on behalf of sea otters and walruses are very inadequate. And, NMFS is evidently serious in its intent towards habitat protection and resolution of fishery-marine mammal conflicts. However, neither agency has reached the point of considering marine mammals -- or fish either for that matter -- as functional components of their ecosystems. That is, the ecosystem itself must emerge as the objective for management, not its bits and pieces. This is not merely theoretical. It is deadly serious.

Consider that even in this Space Age we are still hunter-gatherers in the ocean. We largely depend on the natural productivity of ecosystems for economic and subsistence yields from the sea. We have not yet entered the marine equivalent of the Agricultural Revolution of several millenia B.C., though I made an analogy to a "marine revolution" a decade ago to express man's massive entry into the sea in his bodily and technological forms. This places us at nature's mercy and we dare not make the ultimate ecological experiment of toying with marine development in ignorance, as some seem intent on doing. In this respect, it is hard not to recall recent events wherein NOAA took the part of conservation and Interior of development in the case of leasing on George's Bank.

I make this point to highlight two matters. First, it is probably the case that marine mammals and large fishes are indicators of oceanic ecosystem state. Theory tells us that predators have great influence in maintainence of productivity on a sustainable and predictable basis. Thus, what is the nature of fishery-marine mammal conflict? Is it conflict at all? Do we yet know enough to do ecosystem regulation for ourselves? Second, where are those "critical", "vital", or "essential" habitats on which marine mammals and others depend? How do they function?

Can we afford not to know? I can only say that the agencies' approach to "critical habitat" continues to be primitive in both ecological and management terms.

So we come to the question of how such emphases can be accomplished. First and foremost, such important resources as marine mammals cannot be separated from their habitats. Therefore, marine mammals need to be placed with an agency having marine, oceanographic, even climatic expertise. Given such criteria, the choice would clearly be NOAA and the need for an "organic" approach mandatory. However, NOAA's NMFS has not yet suceeded in integrating marine mammal and oceanic research. Marine mammal affairs, both federally and with the states, seem largely to be concerned with numbers-- how many there are -- despite the fact that we can count most marine mammals only within orders of magnitude; for a very few, we might succeed coming within 50% or a bit better. This is surely "management within uncertainty" to restate an often stated phrase.

This leads me to a conclusion. We have ignored the basic biology of marine mammals long enough. This is also true of their colleagues, the large commercial fishes. We know dangerously little about home range, basic habitat requirements, physiology, behavior, etc. We have been trying to count the almost uncountable and we use the numbers yardstick to determine endangerment too. We still use uncertain MSY models to predict yields in disregard of the basics of ecosystem function. Yet, at the same time, we demand more from a stressed ocean which can respond only in ways natural to itself, but unknown to us.

The need for an "organic" agency is clear. But I am not certain how new legislation and new organization can change old ways. Thus, how can truly integrated coastal and ocean programs be generated? It seems to me that Congress must find a way to ensure interagency cooperation even more that it needs further to define neat packages which concern themselves with oceans, atmosphere, land, or space. This speaks clearly to me for enlargement of the "planning" function within NOAA, similar to OCZM's ORCA program, but greatly expanded.

A case in point is the recognition that conservation and development are really the same things, except to those of limited vision. Thus, marine sanctuaries are essential. The NOAA organic act as so far drafted, leaves sanctuaries out, to the best of my knowledge. This is a great mistake; it is not cause to toss the baby out with the bathwater just because the baby is a bit undefined. A misnomer is actually involved. The real world shows us that very large areas indeed are "critical" for many commercial species, and the ecological processes which support them. Within these large areas, many of man's uses are compatible. However, some areas are of special concern

--"cores" as it were, within larger "buffers". Neither can exist in present form without the other. Together, they comprise what one might term "multiple use management areas". We are well aware of the need for such large management areas by land; I wish someone would tell me why not for the sea? Our task is to recognize the fact that oceanic productivity will not endure unless we greatly increase our efforts to select, establish, and manage such core/buffer systems, i.e. to protect them. At present, the marine sanctuaries program appears to be the only legislative mandate for the purpose.

Please note that while I am firmly a proponent of an "organic" approach to marine resources, as exemplified by marine mammals, I am more concerned with processes of protection and enhancement -- one could say "development". No new structures or organizations can alter the need for cross-agency fertilization, rather than the sterilization which surfaces all too commonly. Whatever act is passed, this issue of cooperation must be forced on the often reluctant bureaucracy. Also note that while I call attention to our frail ignorance, this does not mean that we know and can do nothing. We do know enough to take intelligent actions of many kinds which are not being pursued. This is not a matter of legislation, but of desire and innovation.

"Managing the Coastal Zone in the 1980: Will a NOAA Organic Act Help?"

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OCEANIC AND ATMOSPHERIC POLICY ISSUES OF THE 1980'S:
THE ROLE OF THE NOAA ORGANIC ACT

Workshop Sponsored by the Coastal States Organization
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Managing the coastal zone, in the broadest possible sense, provides a focus for this panel's discussion at workshop on the role of the NOAA Organic Act. Taken broadly, coastal zone management includes: the Coastal Zone Management Act and all its elements and subprograms, the Marine Sanctuaries Program under the Marine Protection, Research, and Sanctuary Act of 1972, the Federal Coastal Programs Review ordered by President Carter in his second Environmental Message, and the Barrier Island initiative directed by President Carter in his first Environmental Message. The full gamut of coastal issues affected by these important laws, the programs, and study documents form the agenda for this discussion. The closely related but secondary issue is whether a NOAA Organic Act will help either articulate national policy facilitate coastal resource management or and/or by itself help management of these resources.

The concept of coastal zone management is like Prohibition. It is "a noble experiment", but unlike Prohibition, this program is alive and well. It is an experiment because for the first time the nation has undertaken, for several years now, a program of comprehensive management of land and water resources in a limited but complex and diverse region. The diversity of views on this panel mirror the diversity and complexity of the coastal zone. The hallmark of this experiment is the central role of states in the enterprise. It is through the states, and with local governments through the activities of the states, that this experiment in cooperation and involvement is succeeding.

Now is indeed the proper time to consider this primary issue of how best to the manage the coastal zone. Due to the demonstrated record of the coastal states organization in facilitating national consensus in this area, now is also the proper time for the Coastal States Organization to organize this conference to frame this discussion.

First, the reorganization of the Federal Coastal Zone Management is under consideration this year. Regional oversight hearings have been completed by the House Subcommittee on Oceanography. An Administration bill with amendments to the Federal Coastal Zone Managment Act is expected to be introduced shortly. The discussion draft gives appropriate credit to the final report of the Coastal States Organization's workshop on this program held last January in Fredericksburg, Virginia.

Second, the Marine Protection, Research, and Sanctuaries Act of 1972 is also under consideration for reauthorization in this session.

Third, the Barrier Island Draft Environmental Statement, posing three broad sets of alternative federal policies for protecting East Coast and Gulf Coast Barrier Island, is now out for public review and debate, after a painfully long and slow gestation period.

Fourth, NOAA/OCZM is nearing completion of the Federal Coastal Programs Review mandated by President Carter's second Environmental Message in August 1979.

Fifth, Congressman Breaux has already introduced legislation entitled the "National Oceanic and Atmospheric Admistration Organic Act" (H.R 5347) to begin the debate on this topic. An Administration draft is circulating. Certainly, the results of this workshop will help shape that proposal.

Sixth, this is the Year of the Coast. This is a splendid oportunity to have fun, involve a wide range of groups in coastal activities, focus public attention on the challenges and threats facing the coast, as well as to create moments of reflection on the managements problem ahead.

Seventh, this is the beginning the second environmental decade, as well as the second decade of NOAA. These milestones call for a renewed commitment in years to come.

From the state perspective, the coastal management program, is the key part of NOAA, as the budget and personnel facts also make this clear. If NOAA's 15,000 employees are 38% of the Department of Commerce staff, then OCZM's 100 employees are less than 1% of NOAA's staff. However, OCZM's budget of million is 25% of NOAA's budget. In short, OCZM is a major element if not the most significant new element of NOAA. The role of the National Marine Fisheries Service, particularly under the Fisheries Conservation and Management Act, is also important for managing the living marine resources on the "wet side" of the coastal zone.

Let me begin this panel by providing the state perspective on the coastal resource management issue. As the 1980's begin, it is a time of coming of age for state coastal management programs. For example, 19 of the 35 eligible state programs are now federally approved. This includes two-thirds of the 18 states which have coastlines greater than 1,000 miles in length. A total of 68% of the nation's coastline is federally approved, an area accounting for 47% of the population living in coastal counties. While this recitation of statics may sound like I am a "cheerleader" for OCZM, this is indeed a proper role, since the successes of states are the true achievements OCZM has to report. OCZM lives vicarously through the states. This is entirely proper, given the nation's tradition on reserving land use type management to states and their political subdivisions.

At the national level, the coastal management program is also at a time of reflection and refinement. The draft Administration bill reauthorizing the Coastal Zone Management Act recognizes that the coastal management program is a long term, process, a process that has only just begun. The Coastal Zone Management Act has succeeded exceedingly well in unleashing the creativity of states, interest groups, local governments and citizens in confronting various coastal conflicts and problems. The Administration widely urges at least five years of full funding under Section 306 of the Act for states with approved coastal programs. The need now is for institutional stability to make secure and consolidate the programs now established, to "fine tune" those programs, and to build upon the framework that had been put into place.

The coastal management process provides an excellent framework for coping with complex issues. If I may be parochial and cite New Jersey examples, the established coastal management program provides the focus for addressing major issues such as the siting of a new natural gas pipeline from offshore New Jersey through the coastal zone and onto a connection point where the existing interstate natural gas pipeline system from the Gulf Coast to metropolitan New York. The same program provides the framework for steering growth in Atlantic City and its surrounding coastal region that is resulting at an unbelieveable rate from the stimulus of casino development. The coastal management program has provided the impetus for a major reexamination of relook at the development opportunities and the requirements of regional cooperation along the Hudson River Waterfront. Indeed, this inquiry has spawned a Riverlands Renaissance program around the entire state.

The NOAA Organic Act is important as a symbol, and national recognition that this institution, charged with overseeing and, through assistance to states, facilitating the proper management of coastal resources. These issues force managers and scientists planners and politicians, citizens and bureaucrats to work together to solve those problems. The solutions are sometimes messy and awkward to develop, but the process has a basic honesty and deliberative pace. Symbols are important in a democracy. The NOAA Organic Act is a symbol that will clarify and may even improve the management of coastal resources.

Remarks of Hans Neuhauser
at the Coastal States Organization workshop on
"Oceanic and Atmospheric Policy Issues of the 1980's
The Role of the NOAA Organic Act"
Washington, D.C. March 14, 1980

It has become almost a truism that technological advances far outpace society's ability to direct and control those advances. Examples as diverse as our inability to prevent the proliferation of nuclear weapons or our fumbling policies to guide genetic engineering research serve to illustrate my point. Our coastal and ocean resources are no exception. The technical capabilities to exploit the mineral, petroleum, fisheries and other resources of the ocean exceed the ability of the government to control and manage those resources. Again and again we are confronted with demands for coastal and offshore development and exploitation right away. Our armaments of defense all too often consist of an inadequate policy framework on which to base decisions and grossly inadequate data. The necessity for the existence of lead federal agencies to carry out the nation's policies for the oceans and coastal areas is clear; with that, I think there is little disagreement.

There is, however, room for debate as to where that agency or those agencies should be placed within the federal bureaucracy and what its mandates should be. There is a good deal of logic to the proposition that the agency should be incorporated within a reorganized Department of Natural Resources or even within the existing Department of the Interior. The arguement that the functions of NOAA would be lost in the Department of Interior (or Natural Resources) as compared to its position in the Department of Commerce doesn't hold up under scrutiny. A Secretary whose skills and responsibilities are directed towards resource management is far more likely to pay adequate attention to NOAA than is a Secretary whose primary responsibilities are commerce and trade. There is also a good deal of logic to splitting up NOAA in other ways.

In spite of the logic to move in several directions though, I don't expect NOAA to be moved to the Department of the Interior; nor do I expect a Natural Resources Department to be created. At least not in the forseeable future. When Governor Carter reorganized state government in Georgia, and amalgamated some 33 agencies into a single Department of Natural Resources, there was no strong institutional-

ized structure in either the Georgia House or Senate to contend with. The Georgia General Assembly merely reorganized its committees around the functions of the new Department. In Washington, the scene is quite different. The Congress has a number of highly institutionalized committees and subcommittees with strong willed and politically powerful chairmen. I do not see a committee voting to subjugate its known powers and functions to an unknown future in another perhaps yet-to-exist committee, unless such a move is part of an overall Congressional reorganization. Because Congressional committees by and large track the agencies of the Executive Branch, I don't believe that Congressional reorganization will come until the Executive Branch reorganization. In other words, for major reorganization to occur, it must take place with simultaneous and cooperative efforts of the Administration and both houses of Congress. If you thought that getting a National Energy Policy is tough, "you ain't seen nothin yet."

The alternative, then, is to insure that the functions of NOAA get their appropriate place in the sun within the Department of Commerce. An organic act may be just the vehicle to provide the necessary attention. If a NOAA organic act is appropriate, it must contain a central theme for the management of coastal and ocean resources. That theme is derived from Genesis: the responsibility of man to be a steward of the earth's resources.

Stewardship means that the resources under NOAA's purvue are to be managed, protected and used wisely for the benefit of all the people of this nation, now and in the future. Stewardship does not mean that the resources are to be plundered by special interests for short term gain. Such an obvious point would seem unnecessary were it not for the fact that one proposed approach to a NOAA organic act sides with the exploiters. The public interest is forgotten. Some of the most important protective programs available to NOAA, the marine and estuarine sanctuaries, are omitted or ignored. Barrier island and beach protection and acquisition are unmentioned.

For the NOAA organic act initiative to be successful, it must embrace the concept of stewardship. NOAA must be able to act capably and forcefully as a manager of this nation's coastal and ocean and atmospheric resources for the benefit of all.

Critical to NOAA's stewardship are the concepts of protection and public involvement. I will elaborate on them briefly because they have not been given their proper recognition in some approaches to organic legislation. The specific provisions would best be contained in the specific legislative programs administered by NOAA such as the Coastal Zone Management Act, but the NOAA organic act should contain the policy directions that requires those special provisions to be included in all of NOAA's programs.

Protection -

When I speak of protection, I do not intend to imply that NOAA's only management option should be protection. Protection is just one option among many that should be available to NOAA in the management of resources. It should be available for all of NOAA's programs.

Of particular importance is the protective option for estuarine and marine sanctuaries and for barrier islands.

The estuarine sanctuary program has been one of the most successful of the programs authorized by the Coastal Zone Management Act. Since the program's inception, seven National Estuarine Sanctuaries have been established, in Georgia, Oregon, Hawaii, Ohio, California and two in Florida. More than 218,000 acres of the nation's coastal zone has been or soon will be protected by the established Sanctuaries. The Estuarine Sanctuary program should be reauthorized and funded. The funding ceilings should be raised and new strategies need to be examined.

What I believe the President will do in the next few days in regard to budget cuts should help persuade all of us that in the 1980's we will have to develop new ways to accomplish land protection goals. While in a few instances we may still be able to establish a new National Seashore or a new Wildlife Refuge, we have to realize that we cannot buy all the lands that need to be protected in this country. Much as some of my colleagues and I would like to, we cannot afford to purchase all of the remaining 290 some remaining natural barrier islands. Even if we could purchase them, we couldn't afford to manage them as we have done in the past. We have to explore new strategies that include less than fee simple acquisition and management by consortiums of interests. Examples already exist; the cooperative

management and multiple ownership or control of the resources of the Apalachicola Bay and River in Florida is an excellent one. The Pine Barrens National Reserve is another.

The marine sanctuaries program likewise is a valid and worthwhile program for NOAA. Contrary to the opinions of some, I am convinced that the marine sanctuary program can and does accomplish something that no other program or combination of programs can do. A terrestrial example might serve to illustrate my point. Yosemite Valley in California can be protected by a number of existing authorities such as the Endangered Species Act, NEPA, the Clean Air Act and so on. But it is not until you establish a Yosemite National Park that all of the valley's resources can be protected for all of the people of this nation to enjoy.

NOAA also needs the authority to protect other coastal ecosystems. Estuarine sanctuaries are established for the purpose of creating natural field laboratories to gather data and make studies of the natural and human processes occurring within the estuaries of the coastal zone. The need for information from natural field laboratories in the coastal zone is not limited to that which can be provided by the study of estuaries. Barrier islands, tidally-influenced fresh water wetlands and river-estuarine interrelationships are among the subjects critically in need of additional study, both in terms of understanding ecosystem structure and function and in terms of providing information useful in decision making regarding the allocation of coastal resources.

Public involvement -

My remarks about public involvement will be brief. It is my view that the resources under NOAA's jurisdiction are held in trust for the people of this nation, present and future generations. The people should have ample opportunity to be informed about those resources and be able to participate in the decision processes that determine how those resources are to be managed. For the occasions when the administering agency strays from the authorized path, citizens should have the right to sue for the redress of grievances. The legal standing for a citizen -- any citizen -- to initiate such a proceedure must be an integral part of NOAA's policy.

ROSE, SCHMIDT, DIXON, HASLEY, WHYTE & HARDESTY

NOAA ORGANIC ACT CONFERENCE

March 14, 1980

Panel No. 8
Coastal Zone Issues
Outline of Remarks of
J. Roy Spradley, Jr.

I. NOAA

A. NOAA's highest and best use is as an ocean science advisor.

B. NOAA's functions are principally informational. See Table 1.

C. Further consolidation of federal services is appropriate.

II. Office of Coastal Zone Management

A. Has limited substantive authority (sanctuaries, endangered species, etc.). See Table 2.

B. Function is management consultant--not regulator/enforcer.

C. Federal consistency review is "one more window." As to sited facilities, it is redundant, overlapping and duplicative review.

III. Electric Energy Facilities

A. Regulated under many overcoordinated statutes. See Table 3.

B. NOAA Organic Act will not resolve energy facility conflicts.

C. Priority siting legislation allows case-by-case review of national interest facilities.

TABLE 1

NOAA

Reorganization Plan No. 4 of 1970 (October 3, 1970)

- National Oceans Survey (1807)
- National Marine Fisheries Services (1871)
- Environmental Science Services Administration
- Coast and Geodetic Survey
- Environmental Data Service
- National Environmental Satellite Center
- ESSA Research Laboratories
- Sport Fisheries and Wildlife
- Commercial Fisheries
- Marine Minerals Technology Center
- Sea Grant
- U.S. Lake Survey
- National Oceanographic Instrumentation Center
- National Data Buoy Project

Marine Mammal Protection Act of 1972

Marine Protection Research Sanctuaries Act of 1972

CZMA of 1972

Endangered Species Act of 1973

Fishery Conservation and Management Act

National Ocean Pollution Research and Development and Monitoring Planning Act of 1978

National Climate Program Act of 1978

TABLE 2

OCZM	State Programs CEIP Marine Sanctuaries Estuarine Sanctuaries Barrier Islands Shorefront Access Federal Consistency

TABLE 3

Electric Energy Facilities

- 30 Coastal States
- Clean Water Act (EPA, Corps States)
- Clean Air Act (EPA, States)
- Atomic Energy Act (NRC)
- Rivers & Harbours Act (Corps, USCG)
- Resource Conservation & Recovery Act (EPA)
- Toxic Substances Control Act (EPA)
- Endangered Species Act (DOI, NOAA)
- Power Plant & Industrial Fuel Use Act (DOE)
- Federal Power Act (DOE)
- Energy Supply and Environmental Control Act
- Federal Water Pollution Control Act as amended
- Fish & Wildlife Coordination Act
- Coastal Zone Management Act of 1972
- Endangered Species Act
- Federal Land Policy & Management Act (FLPMA)
- Outer Continental Shelf Lands Act
- Water Resources Planning Act of 1965
- Oil Pollution Act of 1961
- Deepwater Ports Act of 1974
- Mineral Leasing Act of 1920
- Federal Highway Act
- Natural Gas Act
- Natural Gas Pipeline Safety Act
- Energy Reorganization Act of 1974
- Wild and Scenic Rivers Act
- Rural Electrification Act of 1936