

IOOS – The “Early” Years



A Brief History

David L. Martin, Ph.D.

August 1, 2019

Background



- **GOOS late 1980s** ... a number of international & national workshops, reports, & recommendations.
 - IOC passed resolution (1989) to establish a GOOS
 - By 1992, GOOS was endorsed by WMO, UNEP, and IPCC
 - “Regional” scale concept introduced in 1993
- **1997 Formation of U.S. GOOS Steering Committee**
- **1997 National Ocean Partnership Program**
 - Congressional push to promote national ocean goals through partnerships (14 federal agencies, academia, industry, NGO’s, etc)



The National Oceanographic Partnership Program

The National Oceanographic Partnership Program (NOPP), led by the National Ocean Research Leadership Council (NORLC), was Established by Legislation in Public Law 104-201 [FY 1997 National Defense Authorization Act]

1. To promote the National Goals of:

- Assuring National Security**
- Advancing Economic Development**
- Protecting the Quality of Life**
- Strengthening Science Education and Communication through Improved Knowledge of the Ocean**

2. And to Coordinate and Strengthen Oceanographic Efforts in Support of these Goals by:

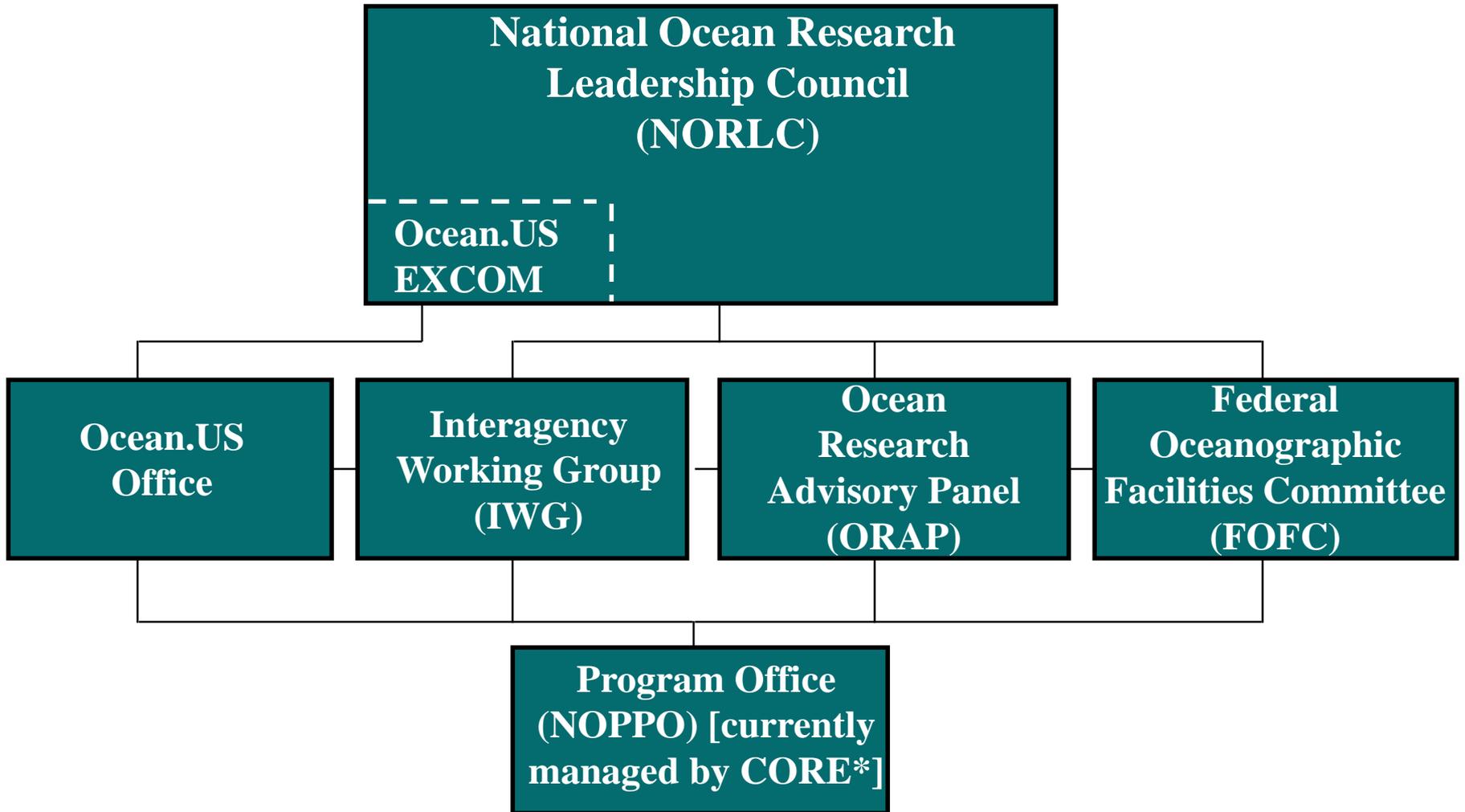
- Identifying and Carrying out Partnerships among Federal Agencies, Academia, Industry, and Other Members of the Oceanographic Scientific Community in the Areas of Data, Resources, Education, and Communication**
- Reporting Annually to Congress on the Program**

Background

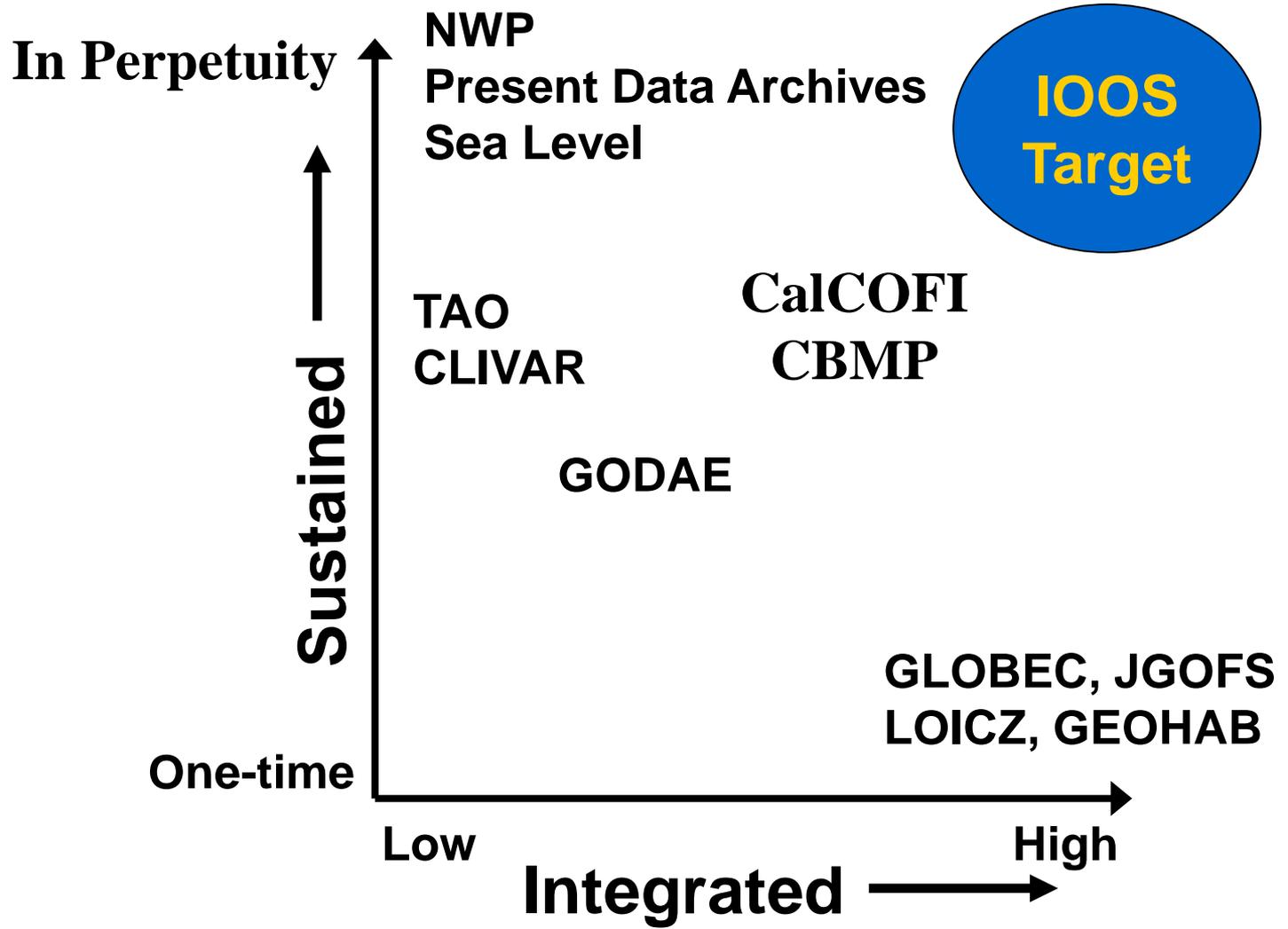


- 1999:** Two **NORLC**-commissioned reports recommended the establishment of a national capability for integrated and sustained ocean observations & prediction including the establishment of a national interagency program office
- 2000:** (1) NORLC directed establishment of Ocean.US Office (to serve as a Program Office for the IOOS).
(2) Formation of Ocean.US Office announced to Congress.
- 2002:** (1) Congressional endorsement of national ocean observing system (Senate appropriations bills 107-42 and 107-43) and to deliver interagency plan with FY2003 President's Budget
(2) Commitment of OSTP to participate in planning and implementation of national system

NOPP Organizational Structure



Integrated and Sustained



Letter to the Senate from the President's Science Advisor

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20502

February 4, 2002

The Honorable Judd Gregg
Ranking Member, Subcommittee for the
Departments of Commerce, Justice
And State, and the Judiciary
Committee on Appropriations
393 Russell Senate Office Building

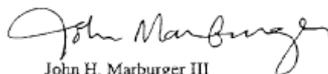
Dear Senator Gregg:

The Subcommittee on Appropriations for the Departments of Veterans Affairs, Housing and Urban Development, and Independent Agencies, in its fiscal year 2002 report (S.107-43), asked the Office of Science and Technology Policy (OSTP), working through the National Science and Technology Council and with the external oceans community, to develop an interagency plan for a national integrated ocean observing system and to submit this report to the Committee with the President's fiscal year 2003 budget request.

OSTP is using an ongoing interagency process to develop a strategic plan for an integrated, comprehensive, and sustained national ocean observing system. Due to the importance of obtaining broad and diverse input, inside and outside the federal government, we are working through the U.S. Integrated Ocean Observing Program Office (Ocean.US), which was founded in October 2000 by the member agencies of the National Oceanographic Partnership Program (NOPP). Stakeholder workshops will be held during the spring and will culminate in a plan to be delivered in early summer 2002.

My point of contact on this matter is Dr. Paul Anastas who may be reached at (202) 456-6061 or by email at panastas@ostp.eop.gov, should you or your staff require more information about this effort.

Sincerely,



John H. Marburger III
Director

“Due to the importance of obtaining broad and diverse input, inside and outside the federal government, we are working through the U.S. Integrated Ocean Observing Program Office (Ocean.US), which was founded in October 2000 by the member agencies of the National Oceanographic Partnership Program (NOPP). Stakeholder workshops will be held during the spring and will culminate in a plan to be delivered in early summer 2002.”

Airlie House Conference

(Sunday, 10 March – Friday, 15 March, 2002)



National Ocean Community- Consensus Building

- The national ocean community at the Ocean.US (Airlie House) workshop consisted of:
 - Representatives from government (federal, state, and local), academia, private/industry
 - Individuals with necessary scientific and technical expertise
 - Representatives from coastal regions around the country
 - Individuals with a clear understanding of the needs of the many users of the data

An Integrated Ocean Observing System {IOOS}



- **What do we need?** (What ocean observations are necessary to address particular goals and objectives?)
- **What do we have?** (To what extent do current or planned observational systems address these same goals. Note: this is NOT merely a listing of extant or planned systems.)
- **What are the gaps?** (To what extent do current or planned systems fail to address the goals.)
- **What are the resource implications in filling the gaps?** (How to address these in a phased, prioritized manner?)

The IOOS: Why



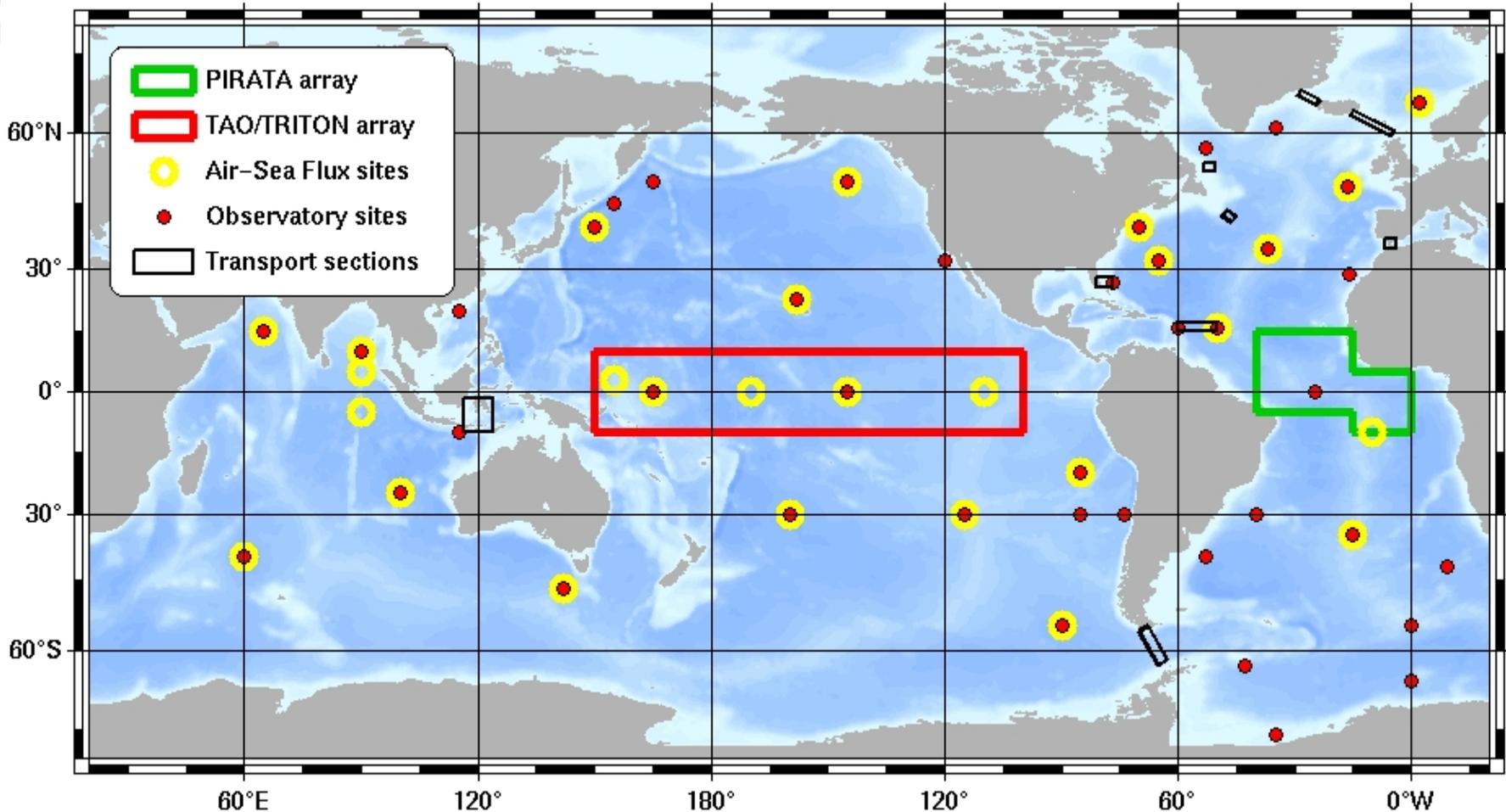
- To address operational and research needs in:
 - **Detecting and predicting climate variability**
 - **Facilitating safe and efficient marine operations**
 - **Ensuring national security**
 - **Managing resources**
 - **Preserving and restoring healthy marine ecosystems**
 - **Mitigating natural hazards**
 - **Ensuring public health**

*These are the principal objectives for
a national ocean observing system.*

Defining the IOOS: The Overall Process

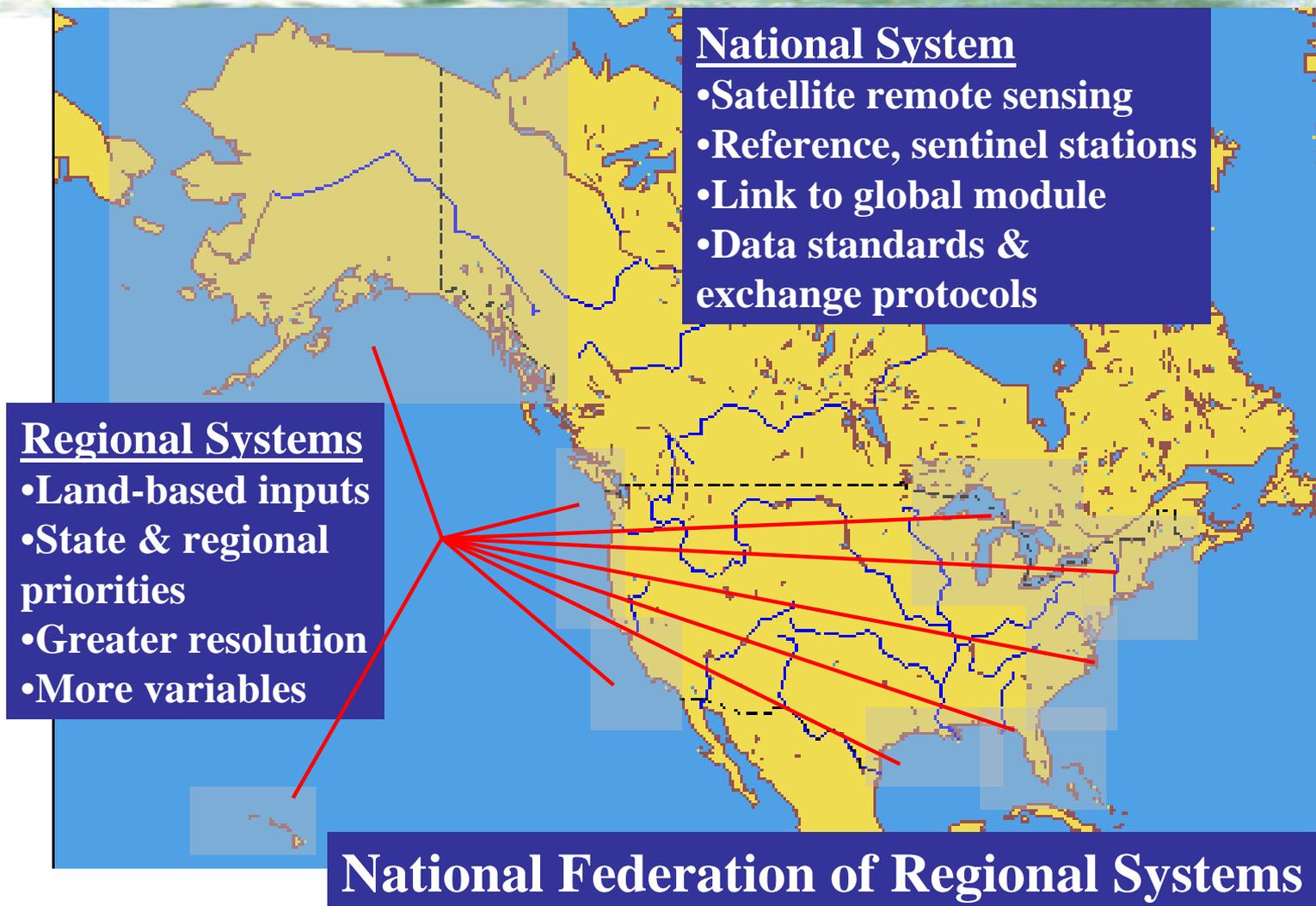
- Phase 1: Theme focus to define and itemize thematically-required ocean observations
 - Based on Review Background Papers
 - Quantified in matrices (Subgoals/Products vs Variables)
- Phase 2: Stakeholder Inclusive Working groups
 - Prioritize Variables
- Phase 3: (a) Geophysics Discipline-based WGs examine technologies; (b) DAC WG define scope of IOOS D/IM; (c) Economics WG – define structure of regional IOOS analyses
- *Phase 4: Implementation Plan*
- *Phase 5: Next steps & beyond*

IOOS Global Component



- **With substantial investments in Lagrangian systems as well**

IOOS Coastal Component



Airlie Recommendations & Cost Estimates for immediate actions



- Accelerate implementation of U.S. commitment to GOOS for global climate change (\$30M)
 - Initiate an IOOS DMAC (\$18M)
 - Enhance/extend existing federal elements (\$40M)
 - Initiate Regional Ocean Observing Systems (\$50M)
-
- New investment for IOOS of **\$138M**
 - Estimated annual cost of **\$500M** for fully realized coastal and open ocean IOOS

Letter to the President's Science Advisor from the NORLC



Dr. John H. Marburger
Director, White House Office of Science and Technology Policy
Eisenhower Executive Office Building, Room 424
Washington, DC 20502

Dear Dr. Marburger:

On behalf of the National Ocean Research Leadership Council (NORLC) of the National Oceanographic Partnership Program (NOPP), we are pleased to forward the attached report that articulates the ocean community consensus on the necessary first steps to begin implementation of a national integrated and sustained coastal and ocean observing system. This summary plan was developed under the auspices of the NOPP Ocean.US office to meet the reporting obligations contained in Senate Appropriations bills 107-42 and 107-43.

As detailed in the attached report, additional documents are in preparation containing more specific technical details including a multi-year, phased implementation plan that will provide the strategic basis for achieving full capability by the end of this decade. The multi-year implementation plan will be reviewed annually. Our point of contact on this matter is the Director of Ocean.US who may be reached at (703) 588-0848.

A handwritten signature in black ink, appearing to read 'Rita R. Colwell', is written over a horizontal line.

Rita R. Colwell
Director, National Science Foundation
Chair, National Ocean Research Leadership Council

5-23-02
Date

Attachment

“On behalf of the National Ocean Research Leadership Council (NORLC) of the National Oceanographic Partnership Program (NOPP), we are pleased to forward the attached report that articulates the ocean community consensus on the necessary first steps to begin implementation of a national integrated and sustained coastal and ocean observing system.”

Evolving Towards a Formal Program



- **Early-on supportive role of and funding provided by the NOAA Coastal Services Center (CSC) was crucial in enabling nascent regional associations and systems (2003 ~ 2007)**
- **Report by the President's Ocean Commission (2004) strongly supported IOOS (including Regional approach) and agreed with funding estimates**
- **Ocean.US continued to articulate community consensus across a wide spectrum of ocean thematic areas (2003 – 2008)**
- **February 2007, NOAA stands up official IOOS[®] program**
- **March 2009, President signs Omnibus Public Lands Management Act – includes authorization of IOOS[®] as a formal program.**

DISCUSSION



Summary



Quoting from Briscoe, et. al. (2008)¹:

“We believe, even after all these years and ponderous movement, that GOOS is important to the world, that IOOS s important to the nation, that regionalization is the right IOOS approach, that movement will continue to be slow but relentless, and that tenacity wins. We will remain tenacious, and so must you.