



University – National Oceanographic Laboratory System (UNOLS)

1



Robert S. Winokur
Technical Director,
Oceanographer of the Navy
15 October 2004





Key Inter-Agency Activities

2

- FOFC fleet renewal plan
- USCOP Update
- NOPP Strategic Plan
(Briscoe)
- Ocean.US update
(Malone)





Interagency Activities

3

NORLC

NOPP

IWG

NFRA

FOFC

JSO

DMAC

TFOO

EXCOM

OCEAN.US

NPOESS

GEOSS

WRF

OCEAN.ED

CEQ

COP

IOPG

IOOS



Interagency Activities Are Working!

4

- Extensive Interagency Coordination
- Highlighted by “Cooperation”
- Stimulated by NOPP
- FY05 and FY06 budget activities
- Setting the stage for FY07
- Agency specific interests maintained with interagency focus



Federal Ocean Facilities Committee Background - A Reminder

5

- Established over 20 years ago as FOFCC
- Reports directly to NORLC
- Includes Oceanographic Facilities, not just the “Fleet”
- Interagency coordinating group
 - Members include: NSF, Navy, NOAA, USCG, EPA, MMC, NAS
- Rotating Chair
- FOFC Working Group
- FOFC Working Strategy



Federal Ocean Facilities Committee Objectives

6

- Provide a forum for the exchange of information on long-range plans regarding oceanographic vessels
- Review federal oceanographic facilities and recommend common standards and approaches
- Address interagency programmatic and operation questions of facilities management
- Improve planning, coordination, and communication among federal oceanographic facility managers
- Monitor international oceanographic facility activities and issues



Current Federal Oceanographic Fleet ⁷

MULTI-PURPOSE

RESEARCH

Thompson(91) **Ewing(83/90)**
Revelle(96) **Wecoma(76)**
Atlantis(97) **Endeavor(76)**
Knorr(70/89) **Oceanus(76)**
Melville(69/91) **Point Sur(81)**
Kilo Moana(02) **Cape**
Brown(97) **Hatteras(81)**
Ka'imimoana(89) **Alpha Helix(66)**
Hi'ialakai(84) **Lake**
Foster(91) **Guardian(81)**
 Bold(89)

SURVEY

Pathfinder(94)
Sumner(95)
Bowditch(95)
Henson(98)
Heezen(00)
Sears(01)
Rainier(78)
T. Jefferson(92)
Fairweather(68)

POLAR

PALMER(92) **Polar Star(76)**
GOULD(97) **Polar Sea(78)**
 Healy(99)

(Vessels > 40m length)

FISHERIES

Miller
Freeman(67/74)
Oscar Dyson(04)
Albatross(63)
Gordon Gunter(89)
McArthur II(85)
Oregon II(77)
Oscar Elton Sette(03)
David Starr
Jordan(66)
Delaware II(75)

SUBMERSIBLE

DSV Alvin(64)

OTHER

R/P FLIP(62)

JOIDES

RESOLUTION#

55 Buoy Tenders,
175 Multi-Mission
Cutters

Legend

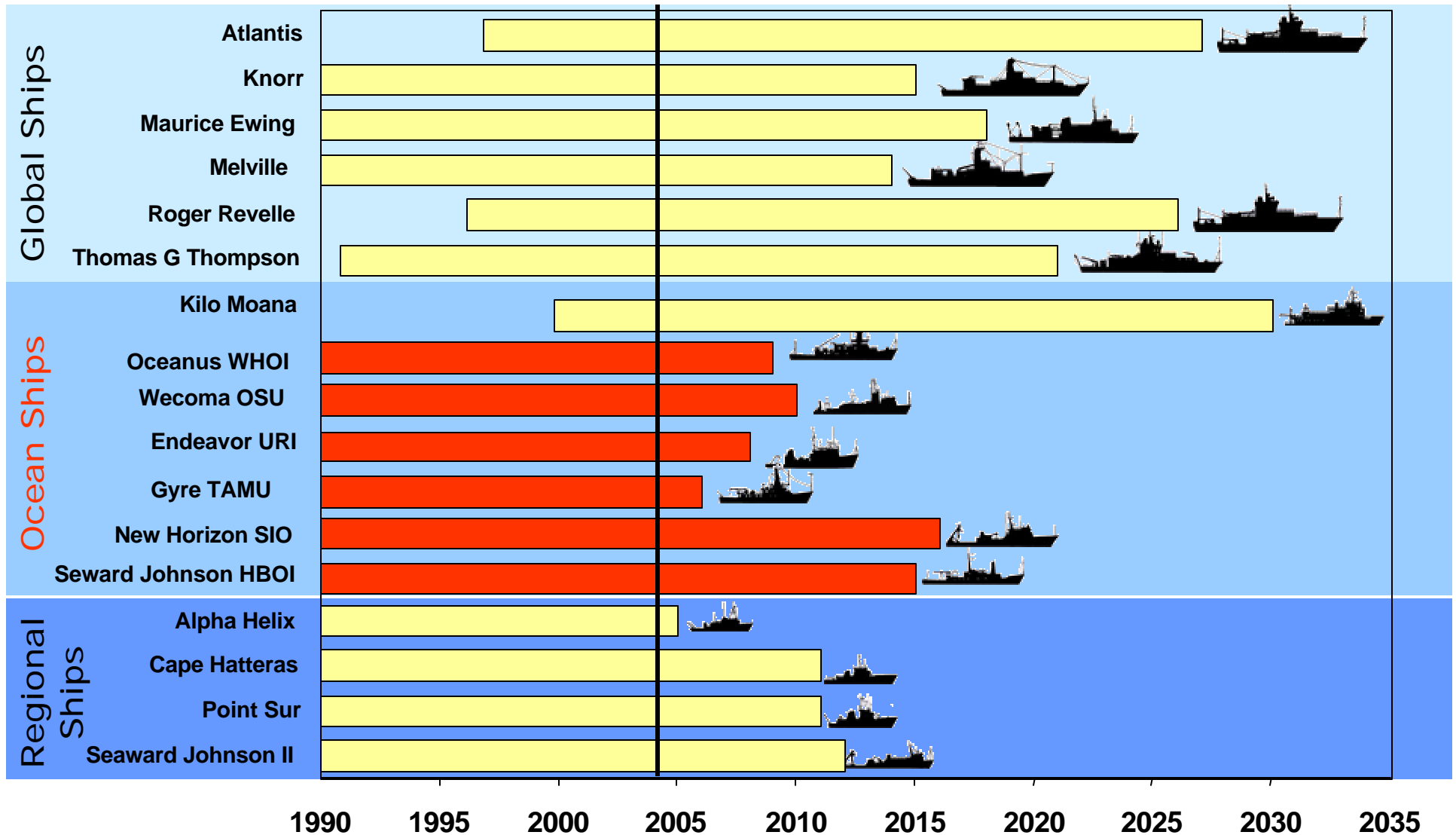
NAVY **USCG**

NSF **EPA**

NOAA



Retirement of Vessels in the National Academic Research Fleet





FOFC Activities

8

Federal Fleet Renewal Plan – Main Focus

- **September 2003 – FOFC agencies requested to provide formal response to participation in an integrated fleet renewal plan**
- **April 2004 – FOFC agencies surveyed on Fleet Renewal Plans**
- **July 2004 – FOFC Retreat to create a renewal plan for the Federal Oceanographic Fleet**
- **Additional Workshops – TBD**
- **First Draft – 31 March 2005**
- **Draft for NORLC Approval – 31 July 2005**
- **Report Release – 30 September 2005**



Fleet Survey Questions

9

1.
 - A) What requirements does your agency have for oceanographic vessels?
 - B) What types of missions or research disciplines do the vessels require?
2.
 - A) What is the composition of your agency's current oceanographic fleet?
 - B) What capabilities does it meet?
3.
 - A) What are your agency's views on the composition of the academic fleet?
 - B) Does the composition need to change from the current plan for renewal?
4.
 - A) Does your agency have a renewal plan for its oceanographic vessels?
 - B) Is there an implementation plan for the renewal?
 - C) Is it funded?
 - D) What controversial issues need to be considered?
5. Can your agency provide an estimate of the higher costs for maintaining an aging fleet vs. vessels that are operating within their expected life span?
6. Can your agency project how unmanned underwater vehicles (UUVs) may affect your use of the research fleet over the next 5-10 years?
7. Should local class vessels be considered in the next version of the FOFC plan?



4. A) Does your agency have a renewal plan for its oceanographic vessels?
 B) Is there an implementation plan for the renewal?
 C) Is it funded?
 D) What controversial issues need to be considered?

A) Agencies with renewal plans- NSF, NOAA, ONR, USCG

B) Agencies with current implementation activities- NSF, NOAA, ONR, USCG

C) Funds for implementation- NSF, NOAA

D) Issues to be addressed- Ocean Class, IOOS/ORION, UUV



The Federal Oceanographic Fleet Renewal Plan: “A Coordinated National Plan”

11

- **Identify renewal cost and schedule for federally funded fleet**
- **Articulate needs with balance between operational missions and science initiatives**
- **Agency specific and coordinated funding strategies**
- **Address specific/special purpose vessel requirements**
- **Increase partnering opportunities, where possible, with respect to fleet operations and renewal**
- **Assess impact of emerging technologies, i.e. unmanned Vehicles**
- **Assess impact of emerging needs, i.e. ORION, IOOS**
- **Reference ship design and concept studies**
- **Includes ships > 40m in length**
- **Includes polar vessels**



The Federal Oceanographic Fleet Renewal Plan: “A Coordinated National Plan”

13

Chapter Summary:

- **Executive Summary**
- **Introduction**
- **Missions and Requirements**
- **Existing Capabilities/Capacities**
- **Gaps/Impacts**
- **Concept Designs**
- **Recommendations**
- **Implementation Strategies**
- **Summary**



Chapter Introduction

Agency “A”

Description/History

Tools/technologies

Vessel(s) type

Days At Sea

Other vessel requirements

(< 40m)

Agency “N”

•

•

•

Implementation Strategy

Potential future missions

Partnership Opportunities



The Federal Oceanographic Fleet Renewal Plan: “A Coordinated National Plan”

14

Chapter Summary:

- **Executive Summary**
- **Introduction**
- **Missions and Requirements**
- **Existing Capabilities/Capacities**
- **Gaps/Impacts** →
- **Concept Designs**
- **Recommendations**
- **Implementation Strategies**
- **Summary**

Gaps

Gap in Ship Days

Impacts

Graph

Mission based summary
of science loss due to
gap in ship days

Examples:

Impacts to the Nation

Cannot implement IOOS

Loss of National

competitiveness

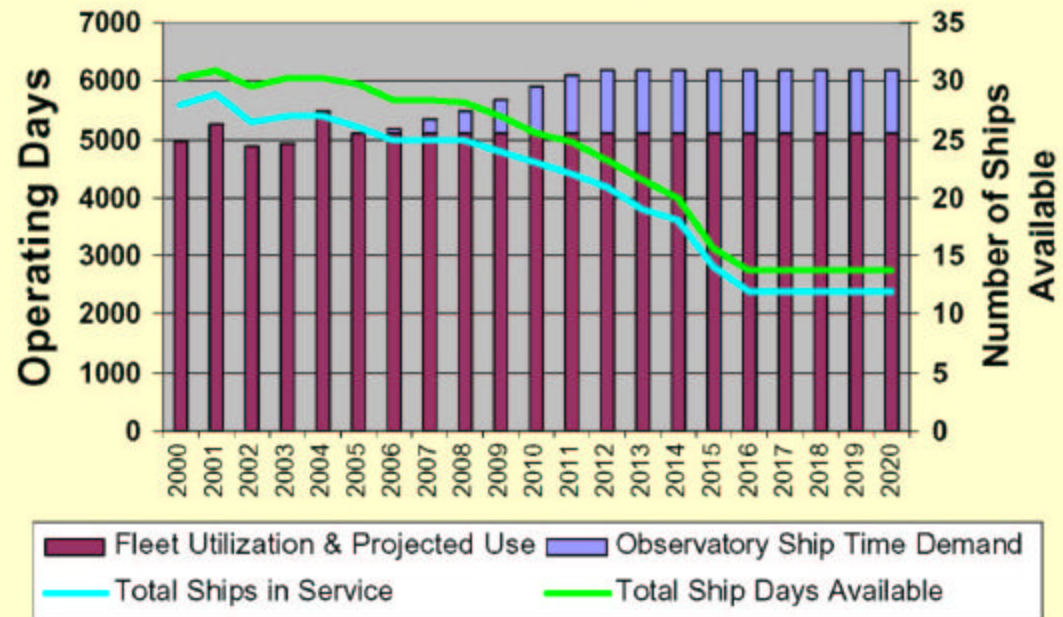
Increased maintenance cost



Evolving Pressure on UNOLS Fleet

- Annual ship time demand will approach 3 ship years per year of Global time for maintenance
- Reports call for increased capabilities:
 - Double Global heavy lift capabilities (Cranes, winches, A frames)
 - Enhanced and redundant Dynamic Positioning
- FOFC Fleet Renewal 5 year update
 - FOFC Agency workshop – July 2004
 - Status report at UNOLS Annual meeting
 - Draft report due in July 2005

**UNOLS Fleet Utilization and Projections
(2000 - 2020)**



* Only new construction with funds identified have been included in the total.



FOFC Key Challenges

16

- Right fleet size and composition to meet current and evolving needs – Regional, ocean, global class and special purpose
- Lessons learned from Academic Fleet Renewal Plan
- Agency specific plans
- Affordable
 - Construction
 - Operating costs
- Role of service life extension
- Timing – up to 10 years from concept to launch
- Partnering opportunities
- Charter vs. ownership for special facilities, i.e. cable layers
heavy lift ships
- Leverage COP report recommendations
- Ensure balance



The Way Ahead

17

- National Oceanographic Fleet Renewal Plan
 - Commencing 1 November 2004 – concerted effort for completion by 30 September 2005
- FOFC / UNOLS dialogue to attain goals
- FOFC / UNOLS consistent and complementary message(s)
- FOFC and UNOLS need to work together to attain mutual goals – harmonize schedules

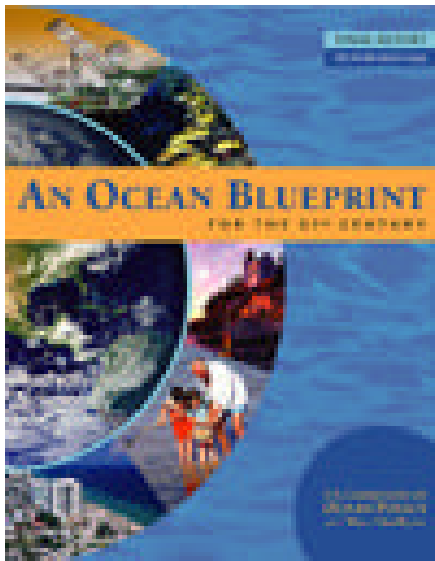


USCOP Update

18

- Final report issued 20 October
- Final recommendations applicable to UNOLS:

#27-4(n): Congress should create a mechanism to ensure a dedicated funding stream for critical ocean science infrastructure and technology needs. Spending priorities should be based on the National Ocean Council's ocean and coastal infrastructure and technology strategy.



High priority areas for funding include the following:

- *the renewal of the University-National Oceanographic Laboratory System fleet and other essential air fleets and deep-submergence*
- *the ongoing modernization of existing assets, including telecommunications assets, laboratories, and other facilities.*

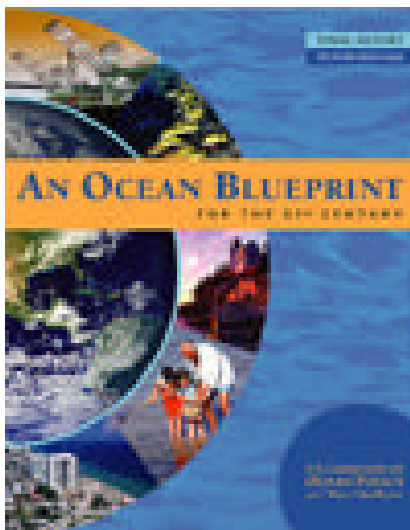


USCOP Update

19

#8-9 (c): Ocean.ED should promote partnerships among government agencies, school districts, institutions of higher learning, aquariums, science centers, museums and **private marine laboratories** to develop more opportunities for students to explore the marine environment, both through virtual means and hands-on field, laboratory, and at-sea experience.

#27-6 (c): The National Oceanic and Atmospheric Administration should establish four to six national virtual marine technology centers at existing institutions to provide coordinated access through electronic means, to cutting-edge, large-scale research technologies.





COP Response Process

20

- Administration has 90 days to respond and provide a statement of proposals to Congress
- CEQ has the lead
- Interagency Ocean Policy Group with 9 working groups, i.e. maritime transportation, education, research, etc.
- Public comments welcomed by CEQ – Federal Register notice for 30 day comment period via e-mail to CEQ
- Recommendations vetted by IOPG/CEQ
- Focus on improving effectiveness and performance
- Report delivered to Congress by 20 December 2004



NOPP Strategic Plan Background and Objectives

21

- **Public Law 104-201 (1997); objectives to be accomplished through improved knowledge of the ocean...**
 - **National and Homeland Security**
 - **Sustainable Economic Development**
 - **Quality of Life**
 - **Communication/education**
- **Identify and carry out partnerships between sectors (government, academia, industry, etc.)**



NOPP Strategic Plan

Challenges and Value Proposition²²

- **Challenges**
 - Data (collection, management, archiving)
 - Knowledge and Understanding
 - Tools and Infrastructure
 - Public Awareness and Education
 - Collaboration for Efficiency and Synergy
- **Why NOPP?**
 - Provide integrative value to individual agency missions; the common pursuit of overarching objectives



NOPP Strategic Plan

Strategic Goals

23

1. Achieve and sustain an Integrated Ocean Observing System
2. Promote lifelong ocean education
3. Modernize ocean infrastructure and enhance technology development
4. Foster interagency partnerships to increase and apply scientific knowledge



NOPP Strategic Plan

Next Steps

24

- NORLC Action – Approved Ten-Year Strategic Plan for the National Oceanographic Partnership Program
- Develop action plans (with metrics) for each Goal
- Present status:
 - Goal 1 - IOOS implementation plan nearing completion
 - Goal 2 - National Research Council proposing study on impacts and effort levels based on ORAP and USCOP education recommendations
 - Goal 3 - FOFC revising oceanographic fleet renewal plan
 - Goal 4 - FY05 BAA to solicit proposals on biogeochemical sensors; IWG proposing to adopt ocean exploration



1st Annual IOOS Development Plan

- **Part I – Structure and Governance**
 - Vision & IOOS design principles
 - Planning ⇔ Implementing Bodies & Process
- **Part II – Building the Initial IOOS (FY 05 – 06)**
 - Integrate existing observing subsystem assets across agencies
 - Data management & communications
 - Coordinated regional development
- **Part III – Improving the IOOS (FY 07 – 14)**
 - Enhance the initial IOOS
 - R&D priorities



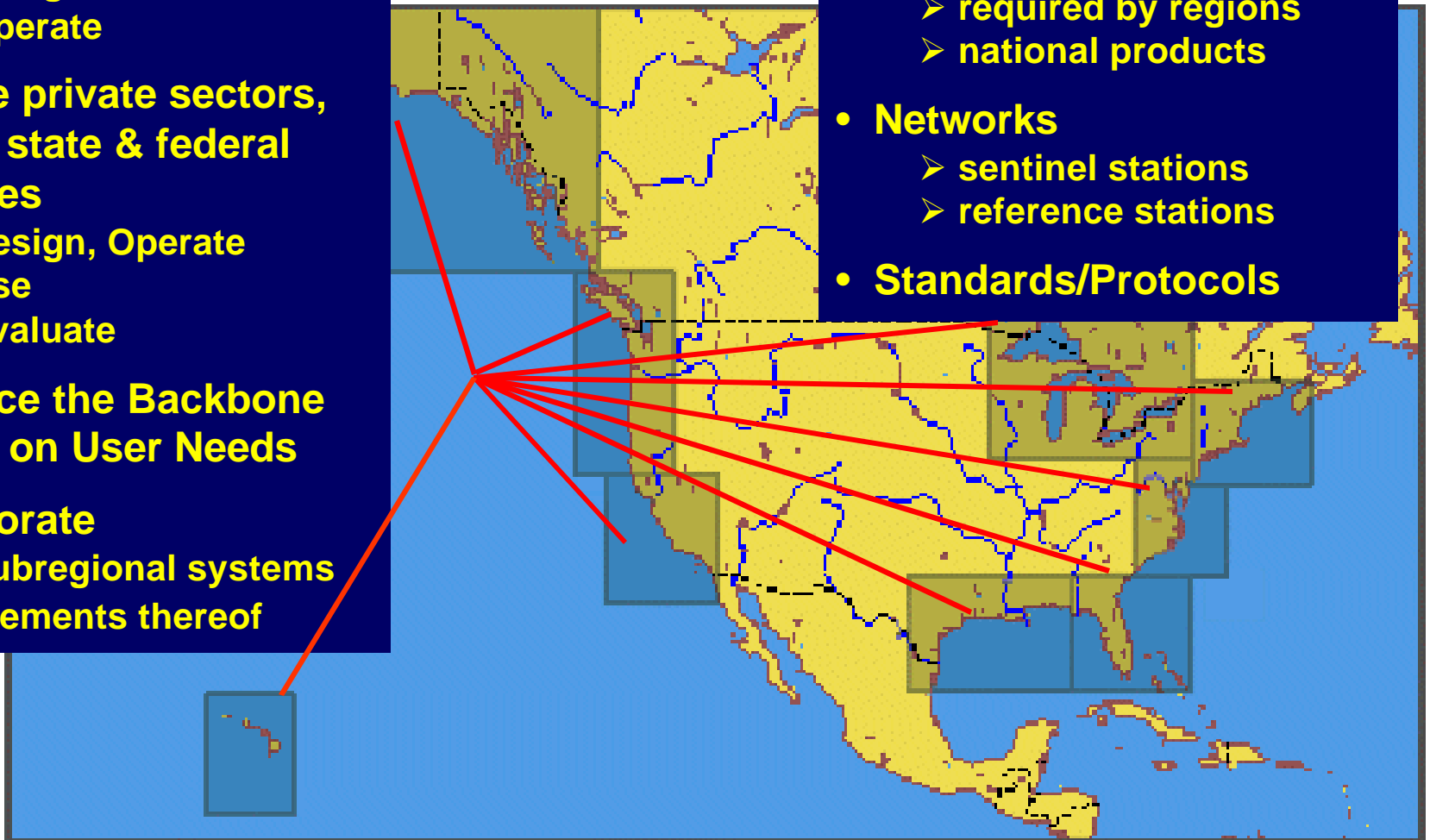
IOOS / Ocean.US Coastal Component

Regional COOS's

- **Regional Associations**
 - Design
 - Operate
- **Involve private sectors, NGOs, state & federal agencies**
 - Design, Operate
 - Use
 - Evaluate
- **Enhance the Backbone based on User Needs**
- **Incorporate**
 - Subregional systems
 - Elements thereof

National Backbone

- **Operated by Federal Agencies**
- **EEZ & Great Lakes**
- **Core variables**
 - required by regions
 - national products
- **Networks**
 - sentinel stations
 - reference stations
- **Standards/Protocols**





1st Annual IOOS Development Plan

Five Priorities

- 1) coordinated development of global and coastal components
- 2) integrated (across disciplines, federal agencies, and global-local scales) data management and communications
- 3) establishment of regional associations for engaging user groups and managing regional coastal ocean observing systems
- 4) making more effective use of existing operational observing subsystem capabilities, and
- 5) enhancing these capabilities through both the incorporation of additional operational capabilities and research and development





1st Annual IOOS Implementation Conference

28

Recommendations:

- Continue to implement and strengthen current plans for the global ocean-climate IOOS component
- Implement immediately the DMAC plan
- Establish and adequately fund the RA's and the NFRA
- Implement selected coastal ocean data assimilation experiments as pilot projects to facilitate development of global and coastal components

Strong Agreement for:

Sustain existing elements of observing subsystem for national backbone

Sustain current investment in coastal ocean observing systems





Response by the Federal Agencies to the Recommendations of the 1st Annual IOOS Implementation Conference

- 1) Accept the stated priorities (1) development of RA's and the NFRA, (2) DMAC and (3) regional pilot projects
- 2) Pending appropriations for FY05/06, cannot make commitments
- 3) To extent of FY05/06 budgets, use priorities to guide investment strategies
- 4) Construct an interagency funding agreement
- 5) Committed to using recommendations for FY07 and beyond to guide agency-specific program development contributing to global and coastal IOOS components





Questions?

