

UNOLS Council Meeting

May 7, 2015

Rick Murray

Division Director, Ocean Sciences



Personnel

Section Heads

Bob Houtman (Integrative Programs)

Don Rice (Marine Geosciences)

Lisa Clough (Ocean)

Program Officers

Dan Thornhill (Bio. Ocean.)

Bill Miller (Chem. Ocean.)

Julie Kellner (Bio. Ocean.)

Two searches in MGG



Decadal Survey of Ocean Sciences, 2015-2025

NRC/NAS, Released Jan. 23, 2015



2013: David Conover, Div. Dir.

2014: Deborah Bronk, Div. Dir.

2015 - : Digestion, Planning,
& Implementation



Decadal Survey of Ocean Sciences, 2015-2025

NRC/NAS, Released Jan. 23, 2015

PREPUBLICATION COPY

SEA CHANGE

2015-2025
Decadal Survey of
Ocean Sciences

NATIONAL RESEARCH COUNCIL
OF THE NATIONAL ACADEMIES

2013: David Conover, Div. Dir.

2014: Deborah Bronk, Div. Dir.

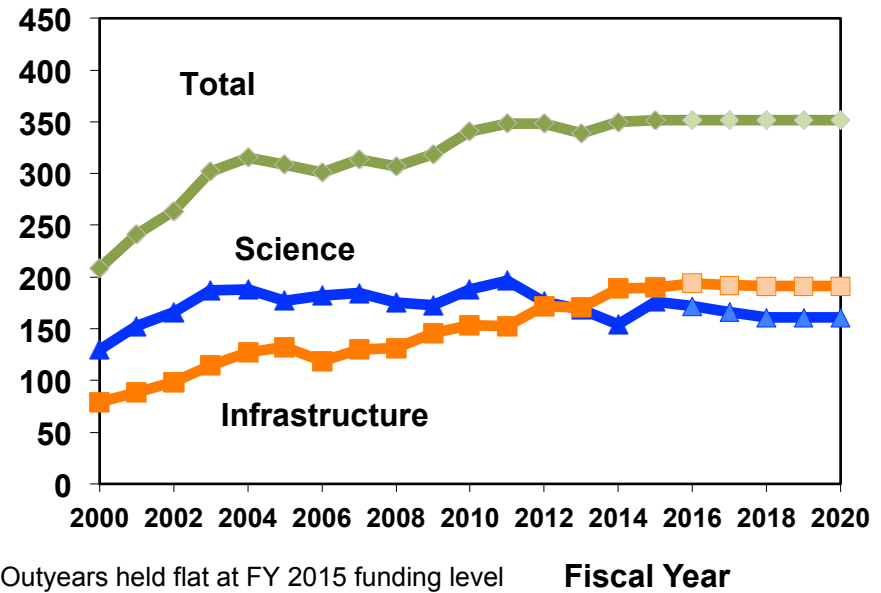
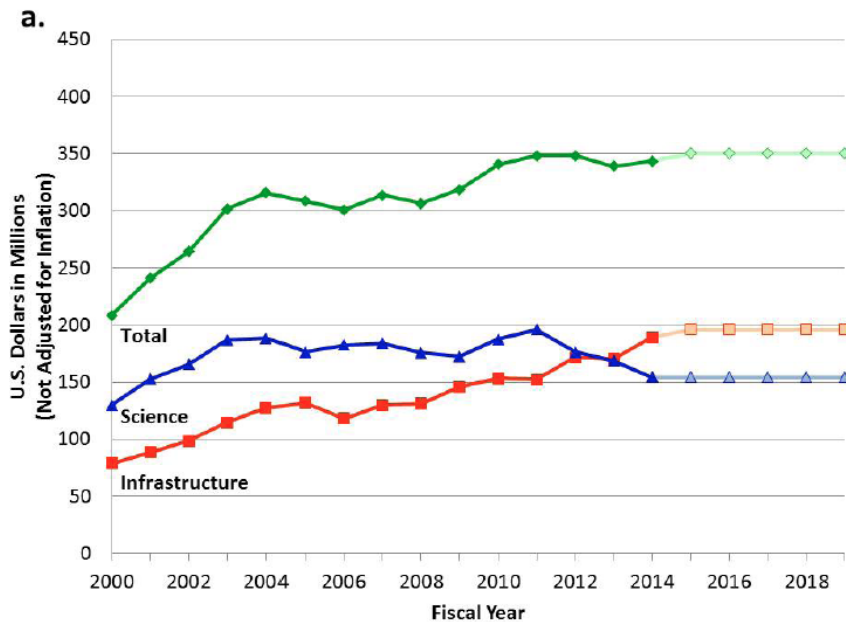
2015 - : Digestion, Planning,
& Implementation



Budget Trends

Sea Change
(2014)

Updated (so far)
(2015...)



Decadal Survey of Ocean Sciences

Comment #1

This is indeed a “Sea Change” report that is...

- *Carefully crafted and well presented,*
- *Hits the “big picture” accurately,*
- *Opportunities for NSF OCE to reorient for the near-, medium-, and long-term future, and...*
- *We (the community, including NSF) are indebted to the committee members, NRC staff, reviewers, etc., for their effort and their product.*



Decadal Survey of Ocean Sciences

Science Priorities

- Rates, mechanisms, impacts, etc....sea level rise?
- Coastal, estuarine ecosystems and linkages.
- Ocean biogeochemistry & physics...and climate.
- Biodiversity & resilience of ecosystems, & changes.
- Marine food webs in the coming century.
- Formation and evolution of ocean basins.
- Geohazards (quakes, tsunamis, landslides, volc.).
- Subseafloor biosphere; biogeochem. cycles & life.



Decadal Survey of Ocean Sciences

Comment #2

- *As noted by the report, these are **not prioritized**.*
- *"Rather, they are ordered from the ocean surface, through the water column, to the seafloor."*

...AND...

- *NSF has in the past, and will continue in the future, fund excellent ocean science regardless of topic, maintaining the highest standards of external and internal review.*



Mapping of Science and Infrastructure

Table 3-2 Alignment of current NSF-funded ocean research infrastructure to the eight decadal science priorities. A “C” indicates a critical asset, while “I” indicates an important asset. The approach taken to reach this alignment is discussed in the text. A list of other critical or important infrastructure is also included.

		1. Sea level change	2. Coastal and estuarine oceans	3. Ocean and climate variability	4. Biodiversity and marine ecosystems	5. Marine food webs	6. Ocean basins	7. Geohazards	8. Subseafloor environment
Fleet and Other Ships	Global/Ocean	C	I	C	C/I	C/I	C	C	C
	Regional/Coastal	I	C	C/I	C	C			
	3-D Seismic Ship						C/I	C	I
	Ice-Capable	C/I	I	C	C/I	C/I	I		
IODP	<i>JOIDES Resolution</i>	I		I			C	C	C
OOI	Coastal	I	I	I					
	Global			I					
	Cabled						I	I	I
Vehicles	<i>Alvin</i>				I	I			I
	ROVs						I	I	C
	AUVs		I		I	I	I		
	Gliders	I	I	I	I				
Other	OBSs						I	C	
	Field Stations / Marine Labs	I	C	I	C	C/I			
Other Critical or Important Infrastructure Assets		Argo, tide gauges, satellites, ice-ocean models, coring facilities and core repositories, mission-specific drilling platforms (MSPs)	River gauges, hydrologic models, satellites, coring facilities and core repositories	Argo, modeling, surface weather analyses, satellites, coring facilities and core repositories, acoustic tomography, MSPs	Fisheries surveys and vessels, sequencing facilities, manned/unmanned vehicles, satellites	Fisheries surveys and vessels, taxonomy, isotope facilities, manned/unmanned vehicles, satellites	global seismograph arrays, magnetotellurics, manned/unmanned vehicles, <i>Chikyu</i> , MSPs	Interferometric synthetic aperture radar, seafloor geodesy, satellites, magnetotellurics, coring, manned/unmanned vehicles, <i>Chikyu</i> , MSPs	Sequencing facilities, manned/unmanned vehicles, <i>Chikyu</i> , MSPs

Mapping of Science and Infrastructure

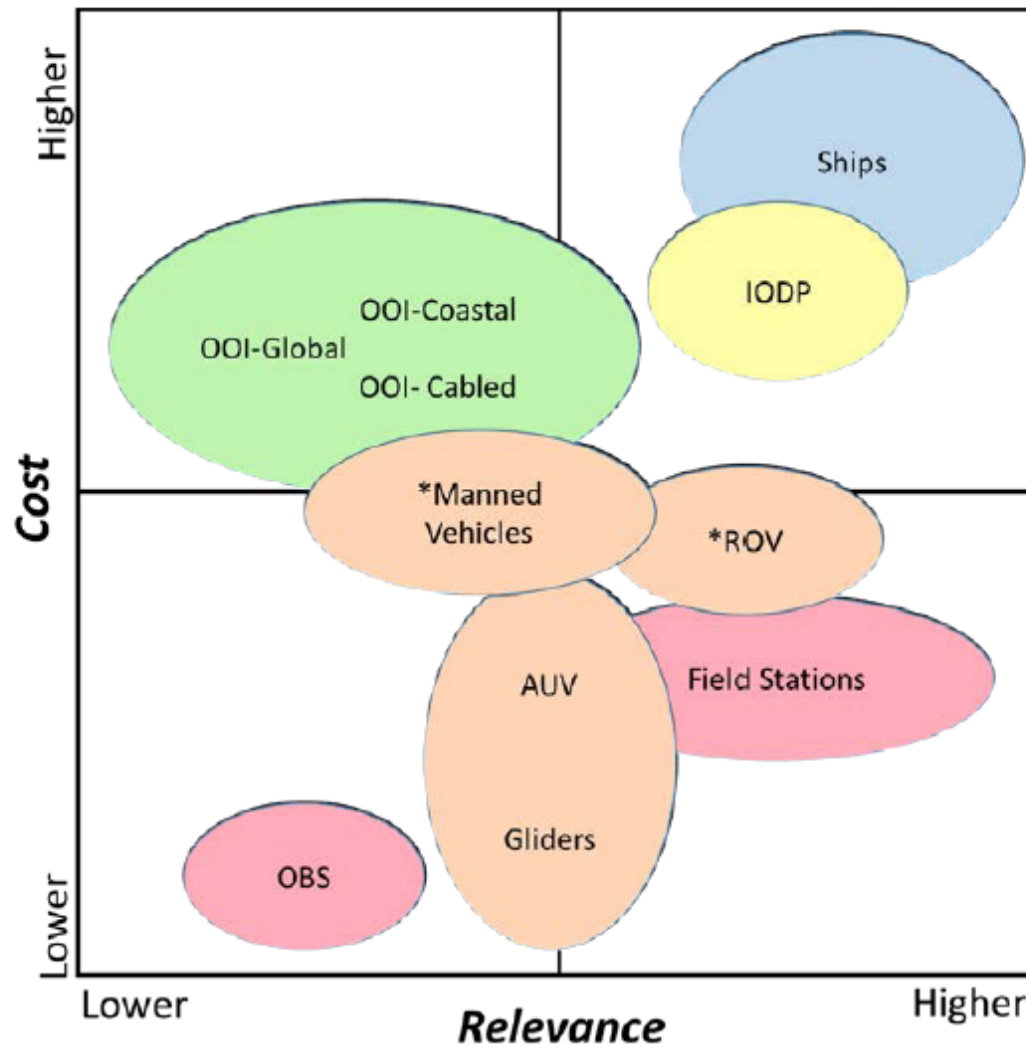


Figure 3-9 Relative cost versus relevance of the infrastructure presented in Table 3-2 (colors are keyed to the same infrastructure). Ships are clustered into one group for this figure. The asterisk next to manned vehicles and ROVs indicates that costs increase if the costs of necessary support vessels are included.

Mapping of Science and Infrastructure

Comment #3

Message to the community....

- *Do not over-interpret smaller details.*
- *Large-scale assessment is most important.*



Decadal Survey of Ocean Sciences

Recommendations

Chapter 4

*“The Path Forward: Maintaining Ocean Science in a
Constrained Budget Environment”*



Decadal Survey Recommendations

1. *Maintain balance b/w infrastructure & core research.*
2. *Reduce O & M, increase core; Infrastruct. \leq 40-50%.*
3. *Immediate 10% reduction in infrastructure, plus further 10-20% over next 5 years.*
4. *Weighted Cuts. OOI \sim 20%, IODP \sim 10%, Fleet \sim 5%.*
5. *Regional Class Research Vessels (RCRV). Two, not 3.*
6. *Infrastructure reviews every 3-5 years with a 10-yr outlook. Exit strategies, etc.*
7. *Initiate high-level standing infrastructure oversight committee.*
8. *Expand partnerships: Other agencies, international, other sectors.*



Comment #4

1. *Maintain balance b/w infrastructure & core research.*
2. *Reduce O & M, increase core; **Infrastruct. \leq 40-50%.***
3. *Immediate **10% reduction in infrastructure, plus further 10-20% over next 5 years.***
4. ***Weighted Cuts. OOI \sim 20%, IODP \sim 10%, Fleet \sim 5%.***
5. ***Regional Class Research Vessels (RCRV). Two, not 3.***
6. *Infrastructure reviews every 3-5 years with a 10-yr outlook. Exit strategies, etc.*
7. *Initiate high-level standing infrastructure oversight committee.*
8. *Expand partnerships: Other agencies, international, other sectors.*



Decadal Survey Recommendations

Comment #5

- *Staying focused on science.*
- *Will strive to maintain, or ideally enhance, science goals via the “return of funds to core”.*
- *How can we, as a community, do things differently now than we could in the past?*



Where Do We Stand As of Now?

Comment #6

- *Goal: "reply" in early-mid May.*
- *Other aspects...*
 - *Cyberinfrastructure throughout OCE.*
 - *Governance & community engagement of OOI.*
 - *Technology and development.*
 - *Partnerships (interagency, private, etc.)*



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