



UNOLS CHIEF SCIENTIST TRAINING

Moss Landing Marine Laboratories

October 6, 2014

Jon Alberts/UNOLS –Executive Secretary



Topics to Cover

- History
- Purpose
- Structure of UNOLS & Fleet
- Proposals
- Shiptime Requests
- Scheduling

History- What lead up to the creation of UNOLS?

- Investigators from non-operating labs were seeking a positive means of gaining access to ship time, even adding new ships to each lab.
- Federal Agencies, (NSF, ONR) concerned over increasing costs, differing modes of operations, funding & concern over adding more ships.
- University ship operators concern over higher ship costs and increasing ship numbers
- No centralized ship scheduling or coordination

History of UNOLS

- Stratton Commission Report published 1/9/1969
- Recommendation for the National Oceanographic Laboratories, (NOLS) to be a partnership with federal agencies and academic institutions, (NOAA and Sea Grants also recommended)
- University labs agreed with goals, but opposed excessive federal control
- Joint Group of University & Federal Administrators worked out another approach with University control on community wide ship access, cooperative ship scheduling, standardized ship operations, uniform funding arrangements as an association of labs designated as UNOLS

History

- UNOLS Charter officially launched/adopted September 22, 1971
- Started with 17 Operating Labs, 33 Ships
- Focus on Ship Scheduling & Investigator Placement Procedures
- Uniform cost accounting, cruise reporting, ship operations, data, safety
- Ship Ops remained the responsibility of individual lab operator
- UNOLS not a ship funding activity
- Non-ship operating labs were brought in as members.
- Not an original agenda of UNOLS, but soon became engaged in fleet replacement, developing mission requirements and concept designs for new ships
- Role remains as first envisioned; to coordinate and serve the academic research fleet

What is UNOLS Today?

- What is UNOLS ?
- How can UNOLS help you get to sea ?
- Can I join a UNOLS committee ?
- Does UNOLS fund ship time ?
- If I am from an Institution without a ship, can I get access to a ship ?

UNOLS in a Nutshell

UNOLS today is an consortium of 61 U.S. institutions with ocean science programs

- 16 of the UNOLS institutions are facility operators that include:
 - 20 Research vessels,
 - National Deep Submergence Facility
 - National Oceanographic Aircraft Facility
 - National Oceanographic Seismic Facility
- Facilities are either owned by one of the Federal agencies or by individual institutions.
- Elected Council & 9 major committees (volunteers)
- UNOLS Office

UNOLS Today

- UNOLS is a staff of 5 full time people, 1 maritime lawyer/risk manager and 1 part time programmer.
- UNOLS is federally funded, operating under a cooperative agreement award.
- NSF, ONR, NOAA, BOEM, USCG, USGS
- Office moves to other UNOLS member institutions after 1 or 2 terms of (5) years each.
- Hosted by Univ. of Rhode Island/Grad. School of Oceanography from May 2009 to April 2019

UNOLS Mission Statement

“UNOLS provides a primary forum through which the ocean science research and education community, research facility operators and the supporting Federal agencies can work cooperatively to improve access, scheduling, operation and capabilities of current and future academic oceanographic facilities.”

UNOLS Vision Statement

“A healthy and vigorous United States research and education program in the ocean sciences with broad access to the best possible mix of modern, capable and well operated research vessels, aircraft, submersibles and other major shared-use facilities.”

UNOLS Goals

UNOLS is a coordinator or facilitator of community-wide efforts with these goals:

- *Promote broad, coordinated access to oceanographic research facilities*
- *Support continuous improvement of existing facilities*
- *Plan for and foster support for the oceanographic facilities of the future*

UNOLS IS NOT A FUNDING AGENCY

UNOLS: Council, Committees, and Federal Sponsors

UNOLS Member Institutions
Oceanographic Community

Supporting Federal Agencies
Navy (ONR), NSF, NOAA, USGS, BOEM

UNOLS Office

UNOLS Ship and Facility Operators
Research Vessels, Aircraft, Submersibles

UNOLS Council

Ship Scheduling Committee (SSC)

Research Vessel Operators' Committee (RVOC)

Research Vessel Technical Enhancement Committee (RVTEC)

Fleet Improvement Committee (FIC)

*Ocean Observing Science Committee
(OOSC)*

*Arctic Icebreaker Coordinating Committee
(AICC)*

*DEep Submergence Science Committee
(DESSC)*

*Scientific Committee for Oceanographic Aircraft Research
(SCOAR)*

*Marcus Langseth Science Oversight Committee
(MLSOC)*

*National Science Foundation (NSF) Ocean
Observing Systems*

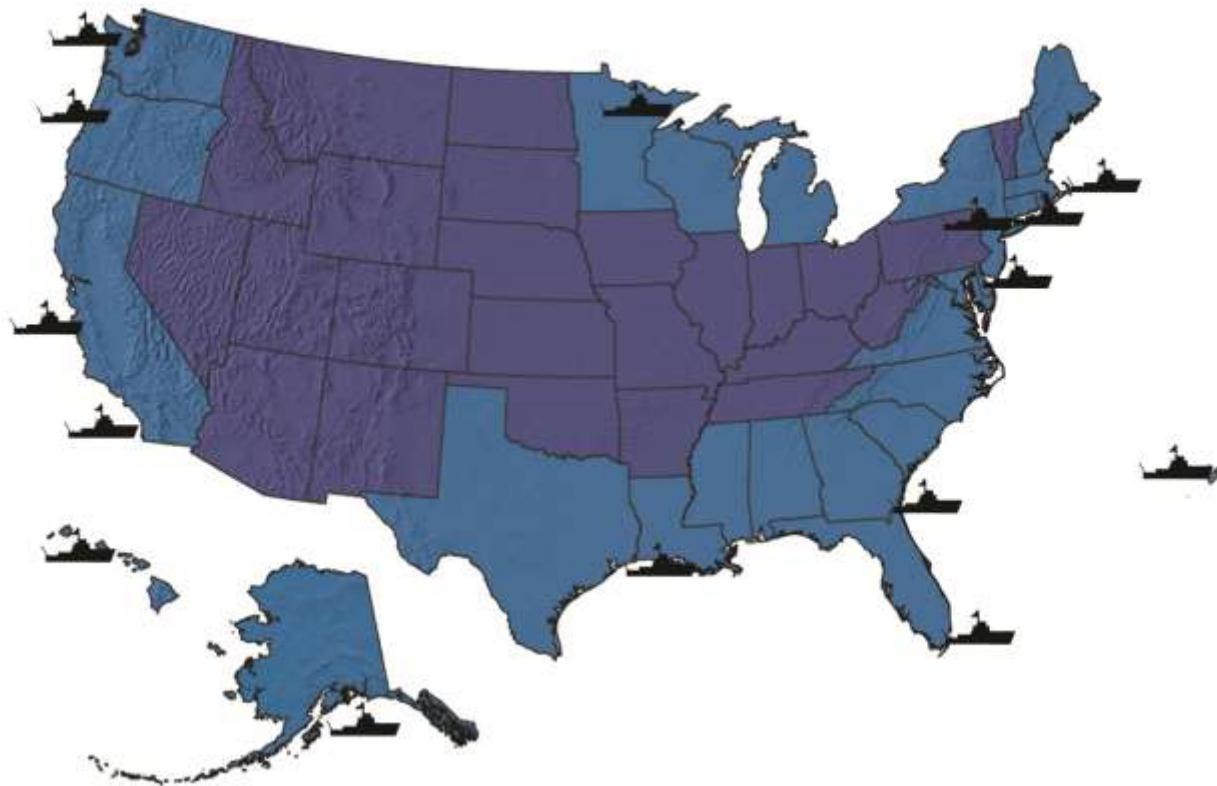
*U.S. Coast Guard (USCG) Polar
Icebreakers (Healy, Polar Star)*

*Woods Hole Oceanographic Institution (WHOI)
NDSF – Alvin, Jason, AUV*

*Naval Postgraduate School (NPS)
CIRPAS – Twin Otter and Pelican Aircraft*

*Lamont-Doherty Earth Observatory (LDEO)
R/V Marcus Langseth*

 UNOLS Homeport Location



Global Class



Marcus G. Langseth



Atlantis



Knorr



Roger Revelle



Melville



Thomas G. Thompson

Ocean/Intermediate Class



Oceanus



Atlantic Explorer



Kilo Moana



Endeavor



New Horizon

Regional Class



Hugh R. Sharp



Point Sur

Coastal/Local Class



Pelican



Robert Gordon Sproul



F.G. Walton Smith



Clifford A. Barnes



Blue Heron



Savannah

UNOLS National Oceanographic Facilities

In addition to the UNOLS Fleet, there are 3 specialized UNOLS Oceanographic Facilities.

UNOLS National Oceanographic Aircraft Facility – Center for Interdisciplinary Remotely-Piloted Aircraft Studies (CIRPAS)



Pelican OPV



Altus ST UAV



UV-18a 'Twin Otter'

UNOLS National Deep Submergence Facility



DSRV Alvin



AUV Sentry



ROV Jason II

UNOLS National Oceanographic Seismic Facility



Marcus G. Langseth

Center for Interdisciplinary Remotely-Piloted Aircraft Studies



Pelican OPV (Photo credit:
<http://cirpas.org/index.html>)



UV-18a Twin Otter

National Deep Submergence Facility



AUV Sentry



DSRV Alvin (Photo credit: WHOI)



ROV Jason II (Photo credit: WHOI - <http://www.divediscover.whoi.edu/tools/jason.html>)



DSV ALVIN- Operated by WHOI as part of NDSF



R/V SIKULIAQ- Newest
UNOLS Global Class Ship
Start Supporting Science
in November 2014





Towing nets



Collecting Water and Taking Measurements



Rock Sampling



Coring





A piston corer that contains 24 feet of samples from the upper seafloor sediments



Core Analysis

Shipboard Laboratories



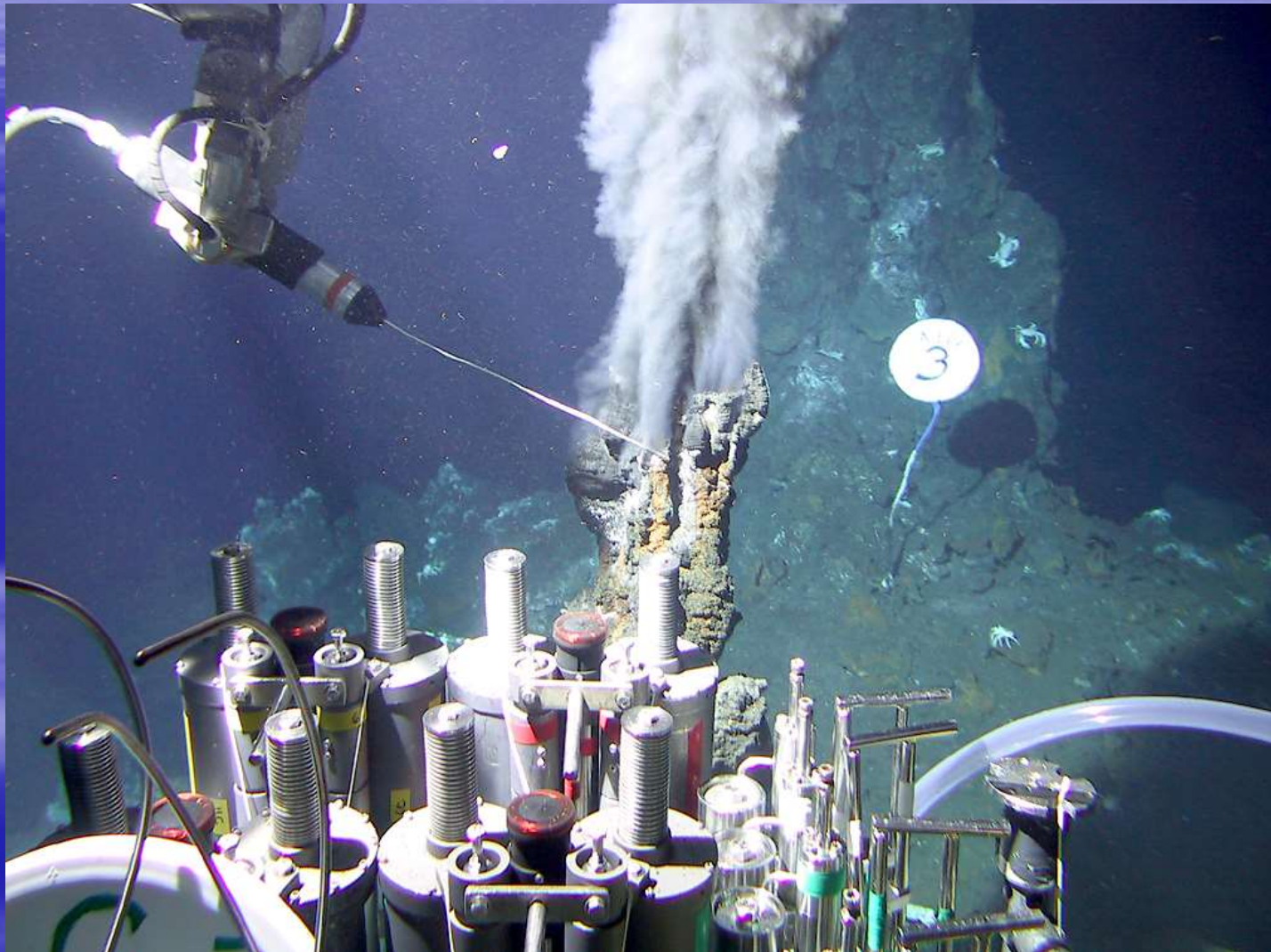
Mooring Deployment





Sediment Trap

Collecting Samples from ALVIN



Rough Seas



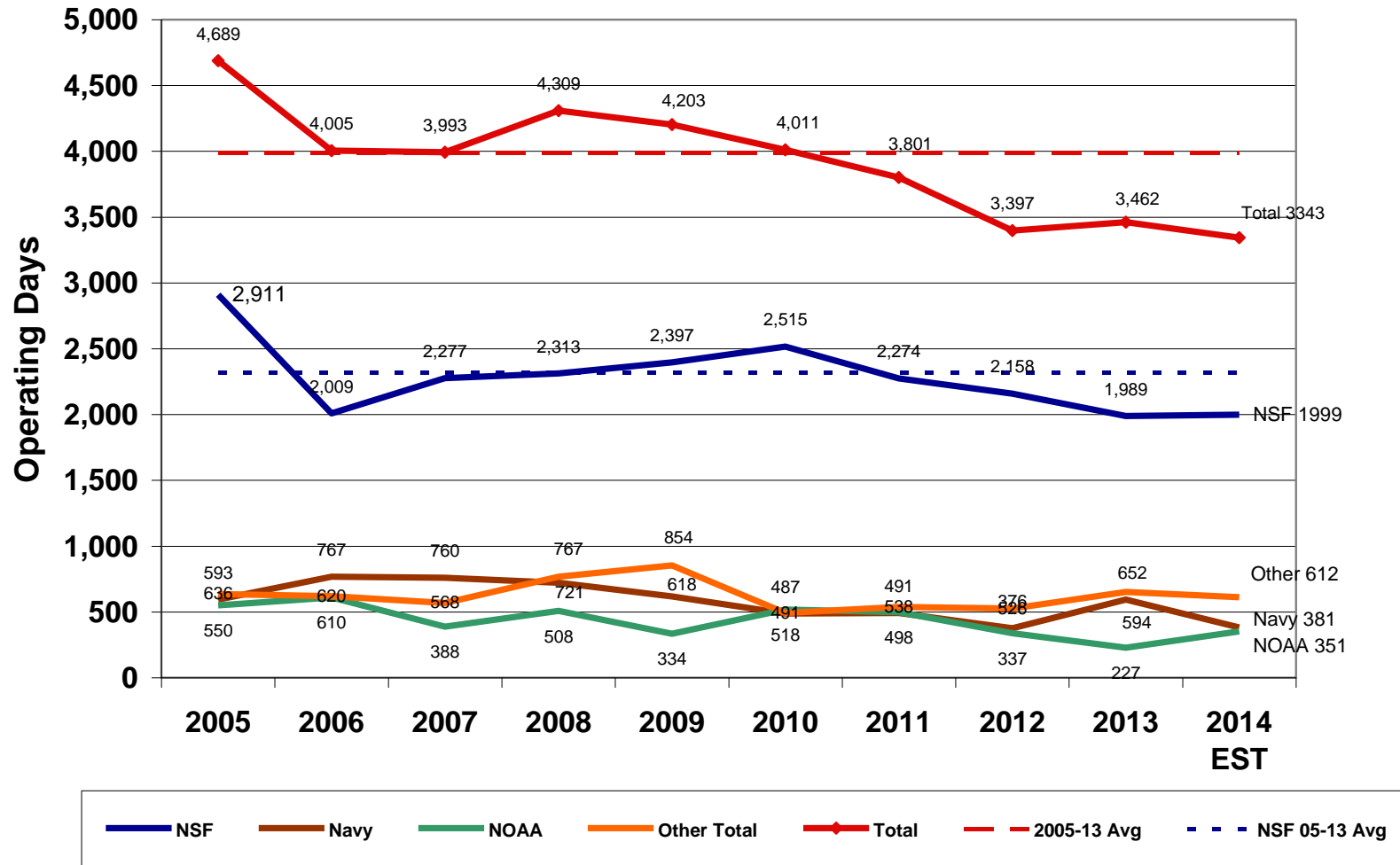
UNOLS Fleet Service Life Estimates

Updated: Sept 2013	BUILT				2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
SHIP/CLASS		Owner	LOA m (ft)	Science Berths																					
Global Class																									
Melville	1969	NAVY	85 (279)	38	---	---	---	---	-X																
Knorr	1970	NAVY	85 (279)	34	---	---	---	---	-X																
Thomas G. Thompson	1991	NAVY	84 (274)	36	---	---	---	---	---	---	---	---	---	---	---	-X									
Roger Revelle	1996	NAVY	84 (274)	37	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-X				
Atlantis	1997	NAVY	84 (274)	37	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-X			
Marcus G. Langseth	1991	NSF	71 (235)	35	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	→
Sikuliaq	2013	NSF	80 (261)	26					>---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	→
Ocean/Intermediate Class																									
Kilo Moana	2002	NAVY	57 (186)	29	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	→
Wecoma	1976	NSF	56 (185)	18	---	-X																			
Endeavor	1976	NSF	56 (184)	18	---	---	---	---	---	---	---	---	---	---	---	-X									
Oceanus	1976	NSF	56 (184)	19	---	---	---	---	---	---	---	---	---	---	---	-X									
Atlantic Explorer	1982	BIOS	51 (168)	20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-X				
New Horizon	1978	SIO	52 (170)	19	---	---	---	---	---	---	---	---	-X												
Neil Armstrong	2014	NAVY	73 (238)	24						>---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	→
Sally Ride	2014	NAVY	73 (238)	24						>---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	→
Regional Class																									
Point Sur	1981	NSF	41 (135)	12	---	---	---	---	-X																
Cape Hatteras	1981	NSF	41 (135)	14	---	---	---	X																	
Hugh R. Sharp	2005	UD	44 (146)	14	---	---	---	---	---	---	---	---	---	---	---	-M-	---	---	---	---	---	---	---	---	→
RCRV1	2019	NSF		16										>---	---	---	---	---	---	---	---	---	---	---	→
RCRV2	2020	NSF		16											>---	---	---	---	---	---	---	---	---	---	→
RCRV3	2021	NSF		16												>---	---	---	---	---	---	---	---	---	→
Coastal/Local Class																									
Robert Gordon Sproul	1981	SIO	38 (125)	12	---	---	---	---	---	---	---	---	-X												
Pelican	1985	LUMCON	32 (105)	14												-X									
Walton Smith	2000	Miami	30 (96)	16	---	---	---	---	---	---	-M-	---	---	---	---	---	---	---	---	---	---	---	---	---	→
Savannah	2001	SKID/UG	28 (92)	19	---	---	---	---	---	---	-M-	---	---	---	---	---	---	---	---	---	---	---	---	---	→
Blue Heron	1985	UMINN	26 (86)	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-X					
Clifford Barnes	1966	NSF	20 (66)	6								-X													
Total Number of Vessels in Fleet					21	21	20	20	20	19	19	19	18	17	18	16	15	15	15	15	14	12	11	11	11
X= Current projected Service Life End Date																									
M= Mid-life Refit																									

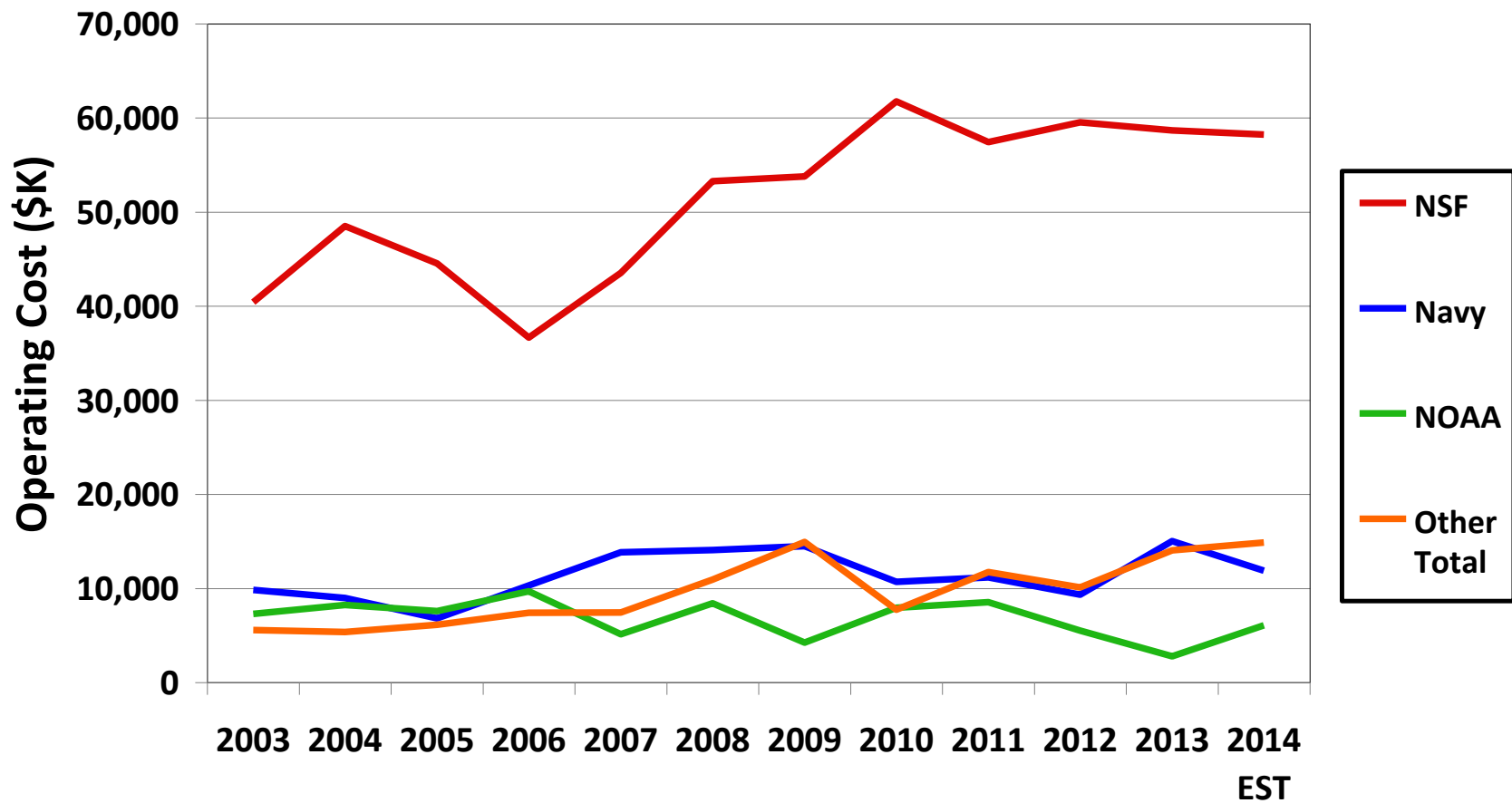
[illegible]

SSC

UNOLS Fleet Utilization (2005 - 2014)



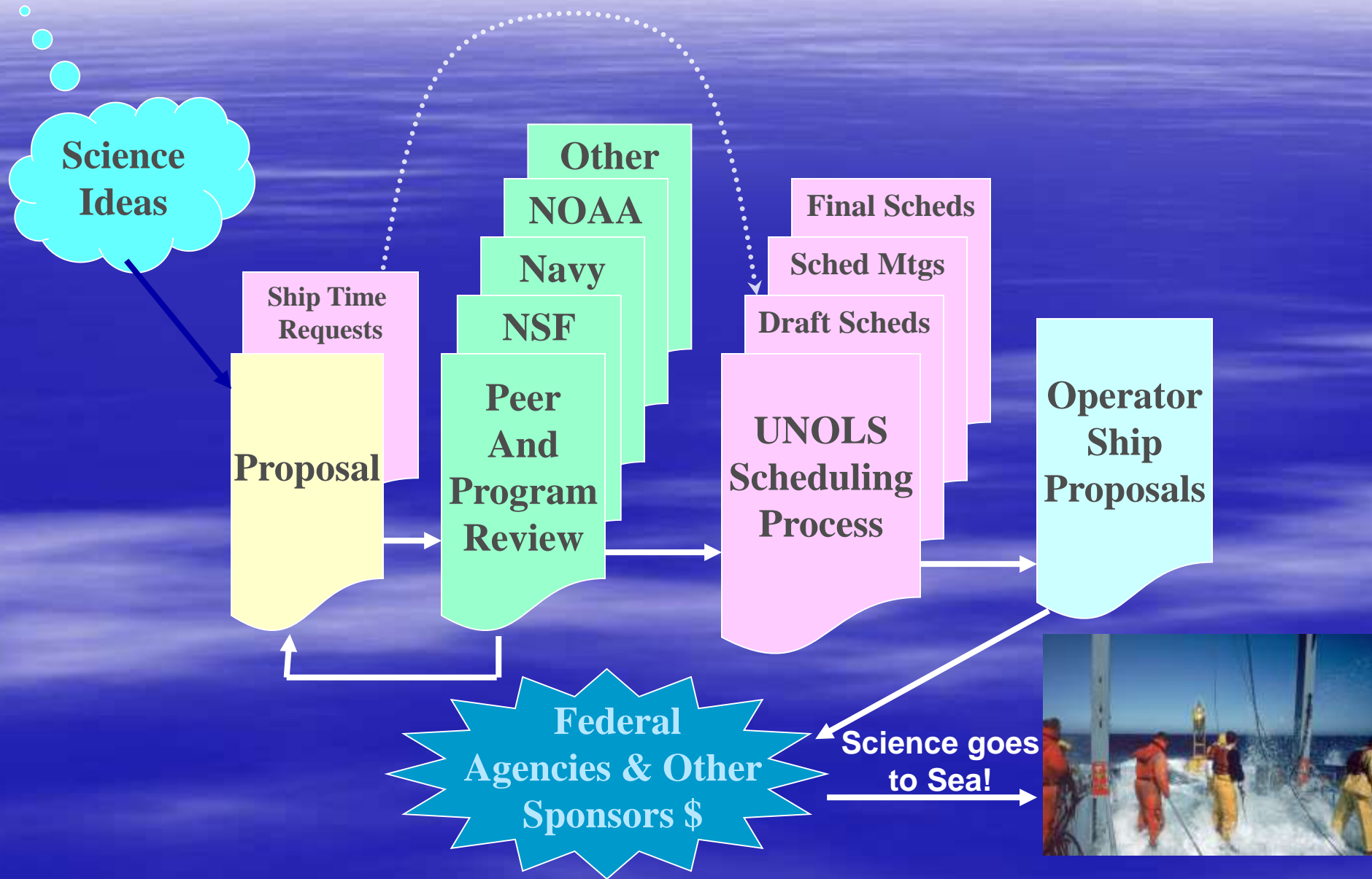
Fleet Cost by Funding Source





**Getting to Sea & being at sea can be a
daunting task !!**

Science Investigators and the Fleet



SCHEDULING PROCESS OVERVIEW

- AN ELECTRONIC SHIP REQUEST FORM IS FILLED OUT ONLINE AT THE UNOLS WEBSITE DURING PROPOSAL PREPARATION AND SUBMITTED TO FUNDING AGENCY.
- THE REQUEST IS THEN AUTOMATICALLY DISTRIBUTED TO SCHEDULERS BASED ON SHIP SIZE REQUESTED, SHIP NAME, LOCATION OF WORK, ETC. IT IS ALSO DISTRIBUTED TO PROGRAM MANAGERS IN THE FEDERAL AGENCIES WHO ARE RESPONSIBLE FOR FUNDING SHIP OPERATIONS.
- “TARGET DATES” FOR ACCEPTING PROPOSALS WITH SHIPTIME EACH YEAR: NSF is *FEBRUARY 15TH & *AUGUST 15TH.

UNOLS Ship Requests

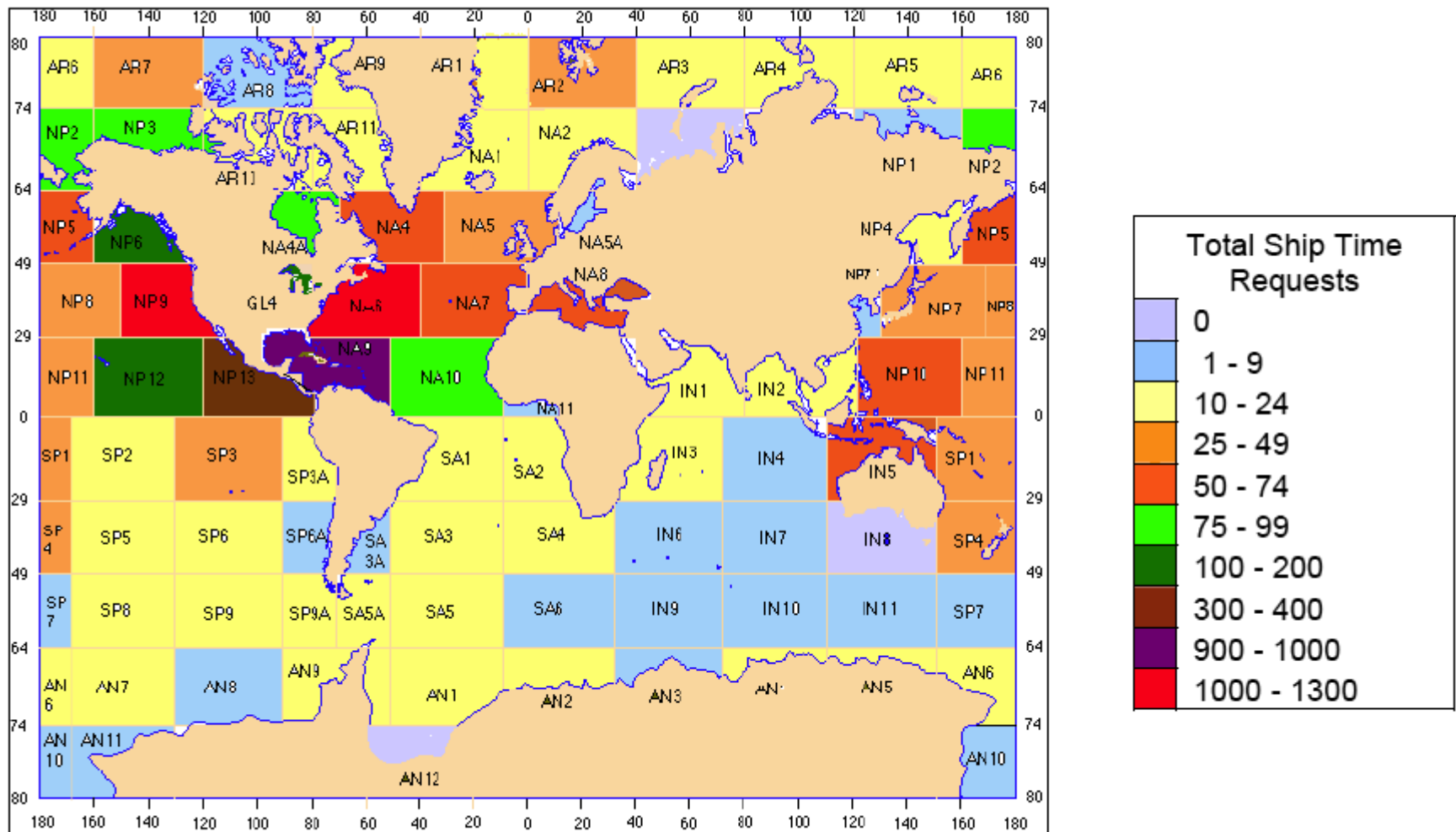


Figure 34. Geographic Distribution of Ship Time Requests (2000 to 2006)

UNOLS Ship Scheduling Committee

SSC Chair- Doug Ricketts/ Large Lakes Observatory- Univ. of Minnesota

SSC Vice-Chair- Richard Behn/RSMAS

UNOLS Exec. Sec.- Jon Alberts working with funding agency reps; Rose Dufour/NSF, Tim Schnoor/ONR, Tracy Miller/NOAA

UNOLS works along with each ship operating institutions ship scheduler



USCG Restricted regions

Port concerns

Multi-ship requirements

Congestion concerns

Marine Mammal & Turtle issues

Clean vessel

OBS Schedules

Funding decisions

Foreign Clearances

Personnel schedules

Ship maintenance

Weather considerations

Ship breakdowns

OSU piston coring availability

ITAR, EAR, OFAC .. i.e export control laws

RAPID Response to global events

Political unrest and coup d'état



Thank you!