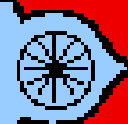


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“UNOLS 101”

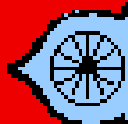
R. A. Knox

Associate Director, SIO/UCSD & UNOLS Chair

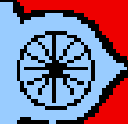
UNOLS Fall Council/Annual Meeting

November 15, 2001

Brookings Institution

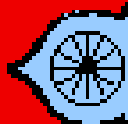


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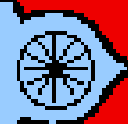


TWO MAIN TOPICS

- * UNOLS - what is it?
- * UNOLS issues of federal/Congressional interest
 - * Piracy and security
 - * Long-range fleet renewal

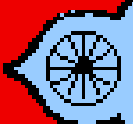


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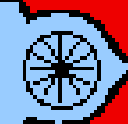


UNOLS BASICS

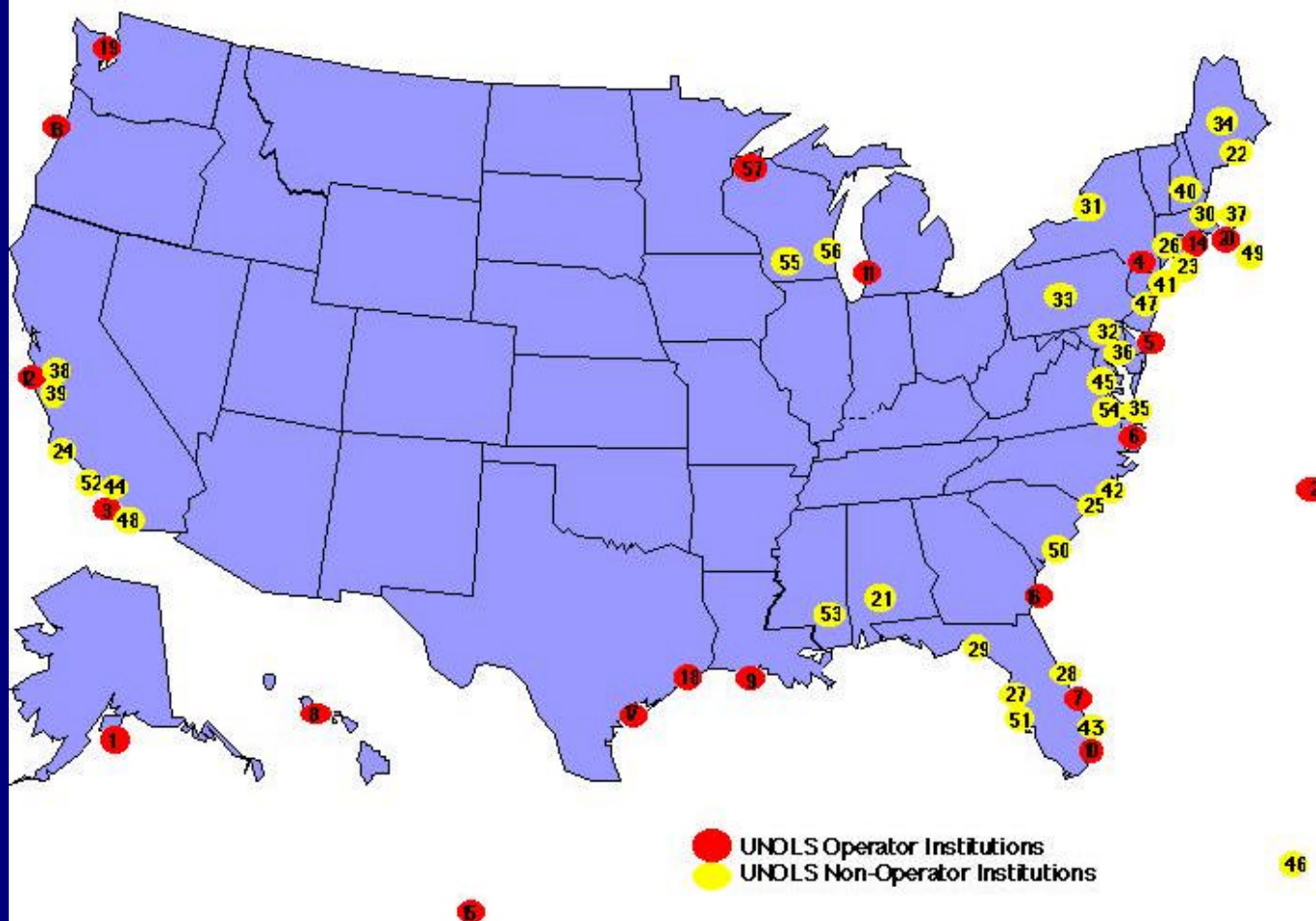
- * Founded 1971
- * Association of academic oceanographic institutions
- * Primary community voice/forum *re* research vessels
- * Advisory body - NSF, ONR, NOAA, etc.
- * Fleet-wide scheduling coordination and efficiency
- * Fleet-wide safety and capability standards
- * Capital planning advice
- * 61 members, 21 operators, 28 ships
- * Elected council, secretariat, major committees
- * Not a ship operator or funding source

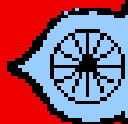


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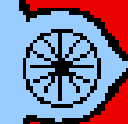


UNOLS Member Institutions





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Class I/II

R/V Roger Revelle

OPERATING INSTITUTION

Scripps Institution of Oceanography
 Woods Hole Oceanographic Institution
 University of Washington
Scripps Institution of Oceanography
 Woods Hole Oceanographic Institution
 Lamont-Doherty Earth Observatory
 University of Hawaii

SHIP

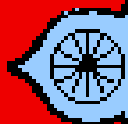
MELVILLE
 KNORR
 T. G. THOMPSON
ROGER REVELLE
 ATLANTIS
 MAURICE EWING
 KILO MOANA
 (under construction)

OWNER

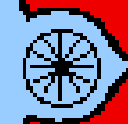
Navy
 Navy
 Navy
Navy
 Navy
 NSF
 Navy

LENGTH (ft)

279
 279
 274
274
 274
 239
 185



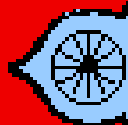
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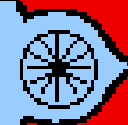
Class III

R/V Endeavor

OPERATING INSTITUTION	SHIP	OWNER	LENGTH (ft)
Harbor Branch Oceanographic Institution	SEWARD JOHNSON	HBOI	204
Oregon State University	WECOMA	NSF	185
University of Rhode Island	ENDEAVOR	NSF	184
Texas A&M University	GYRE	TAMU	182
Woods Hole Oceanographic Institution	OCEANUS	NSF	177
Scripps Institution of Oceanography	NEW HORIZON	SIO	170
Harbor Branch Oceanographic Institution	SEWARD JOHNSON II (ex EDWIN LINK)	HBOI	168



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Class IV *R/V Point Sur*

OPERATING INSTITUTION

Moss Landing Marine Laboratories

Duke University/UNC
 University of Alaska
 Scripps Institution of Oceanography
 University of Delaware
 Bermuda Biological Station for Research
 Harbor Branch Oceanographic Institution EDWIN LINK

Louisiana Universities Marine Consortium
 University of Texas

SHIP

POINT SUR

CAPE HATTERAS
 ALPHA HELIX
 ROBERT G. SPROUL
 CAPE HENLOPEN
 WEATHERBIRD II
 HBOI 113
 (ex. SEA DIVER)
 PELICAN
 LONGHORN

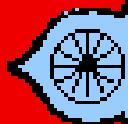
OWNER

NSF
 NSF
 NSF
 SIO
 UDel
 BBSR

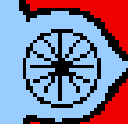
LUMCON
 UT

LENGTH (ft)

135
 135
 133
 125
 120
 115
 105
 105



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Class V

R/V Blue Heron

OPERATING INSTITUTION

University of Miami
Smithsonian Tropical Research Institute
University of Minnesota - Duluth
University of Michigan
University System of Georgia
University of Washington

SHIP

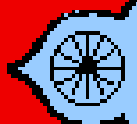
WALTON SMITH
URRACA
BLUE HERON
LAURENTIAN
BLUE FIN
C. A. BARNES

OWNER

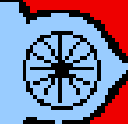
UMi
Smithsonian
UMn
UMich
UGa
NSF

LENGTH (ft)

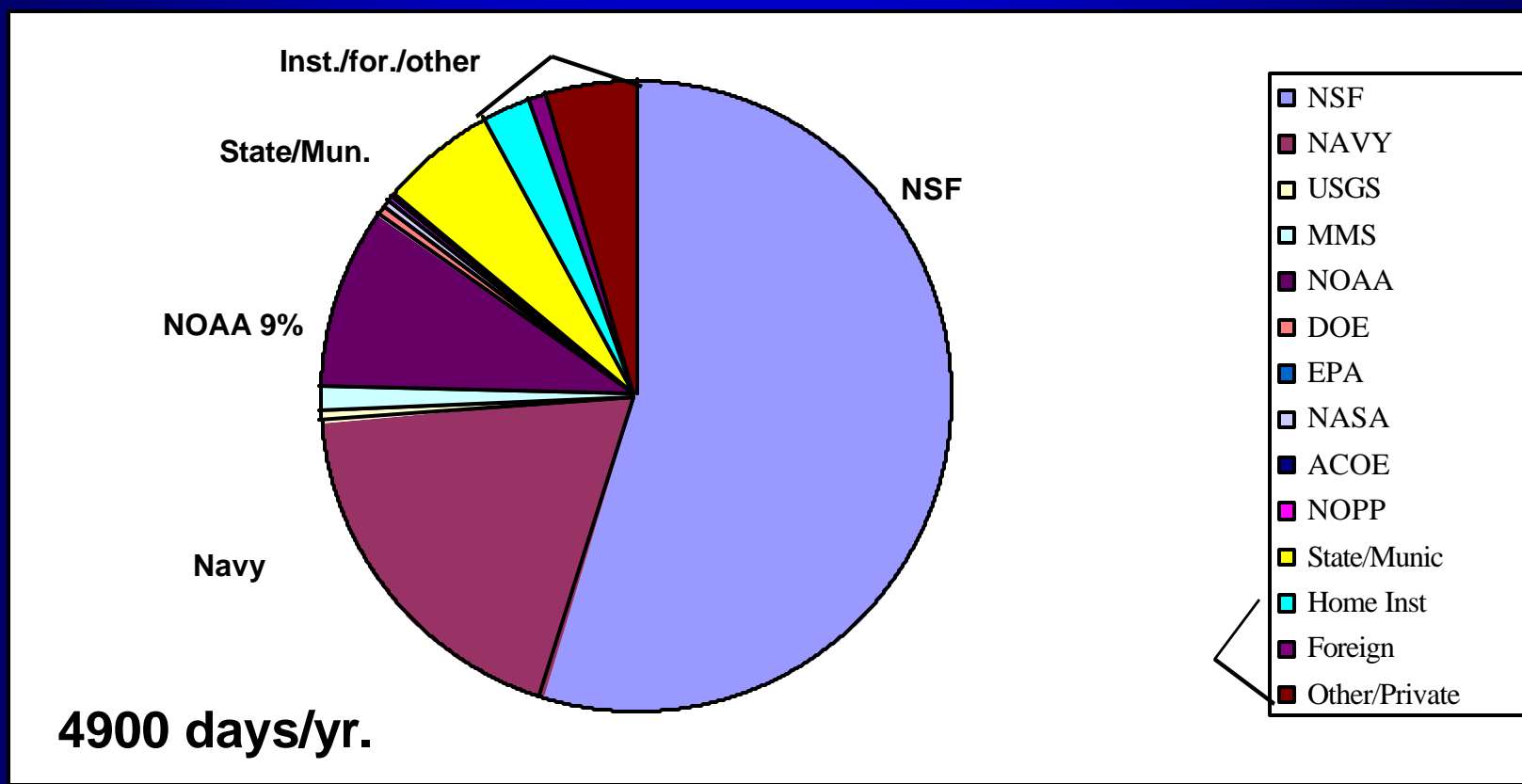
96
96
86
80
72
66

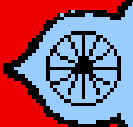


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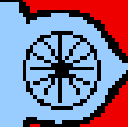


Operating Days 1996-2000 (%) by Fund Source

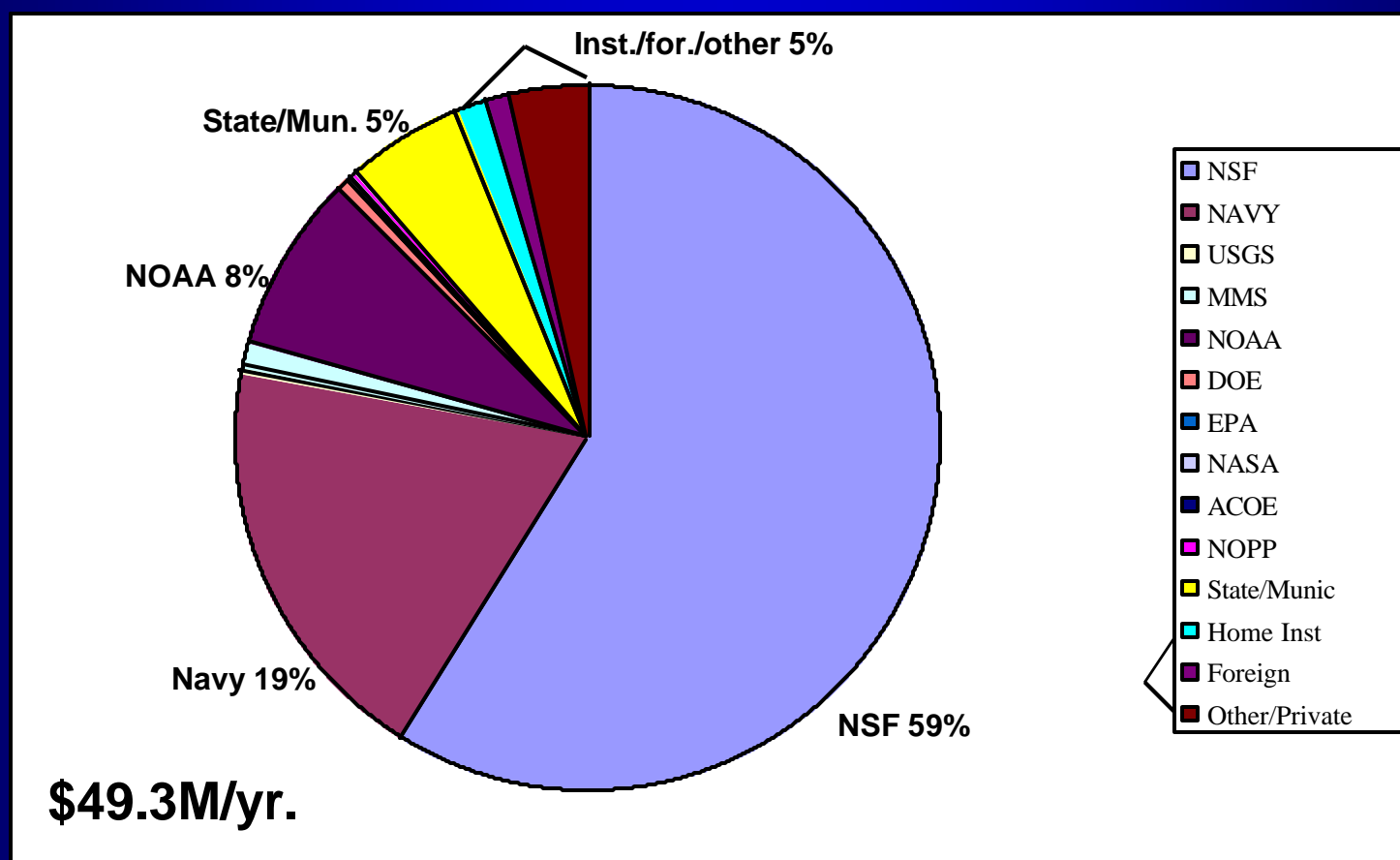


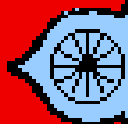


UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

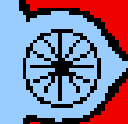


Operating Funds 1996-2000 (%) by Fund Source





UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM



THE ACADEMIC RESEARCH FLEET

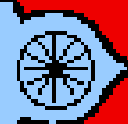
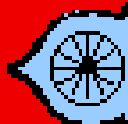


A REPORT TO THE ASSISTANT DIRECTOR FOR GEOSCIENCES
BY THE FLEET REVIEW COMMITTEE

“**The UNOLS system should be retained.** The NSF-UNOLS current practices, using institutional operators funded by NSF and other federal agencies with centralized scheduling through UNOLS, seems to provide excellent access to the sea for US investigators. To the extent the committee can assess, costs appear to be comparable to or better than government operators, and not evidently different from costs of contracting commercial platforms.”

www.unols.org

NSF, 1999



PIRACY

- * Attacks in 2000 up 57% (1999); 450% (1991)
- * 469 attacks, 307 boardings, 8 hijacks, in port/at sea
- * 72 sailors killed, 24 injured
- * Hot spots in Indonesia, Bangladesh, India, Straits of Malacca, Ecuador, Red Sea
- * Objectives - cargo and/or ransom
- * International Maritime Bureau - Piracy Reporting Center in Kuala Lumpur:
http://www.iccwbo.org/ccs/menu_imb_piracy.asp

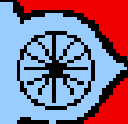
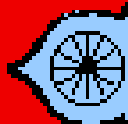


Attacks in South America 1 January to 31 December 2000



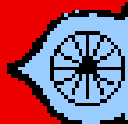
Attacks in S. E. Asia and the Far East 1 January to 31 December 2000



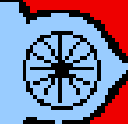


PIRACY AND UNOLS

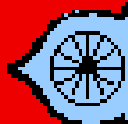
- * Red Sea Outflow Experiment (REDSOX)
- * REDSOX I: Feb.- Mar. 2001 - R/V *Knorr* - security professionals aboard
- * REDSOX II: Aug.-Sept. 2001 - R/V *Ewing* - security training on prior leg
- * Gulf of Aden. Work near shore (outside 12 n. mi.) driven by scientific objectives



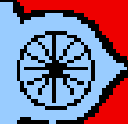
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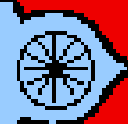
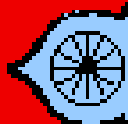
- * REDSOX II, August 31: R/V *Ewing* attacked approx. 18 n. mi. off Somalia in western Gulf of Aden
- * Small boat deployed from larger vessel
- * Small arms, grenade launcher used



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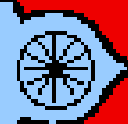
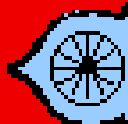


- ★ Personnel into staterooms, other defensive steps taken, scientific work stopped, ship headed to open sea asap, etc.
- ★ No injuries or damage
- ★ Origin/objectives of attackers not known
- ★ Subsequent scientific program modified/reduced

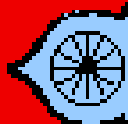


ISSUES FOR THE FUTURE

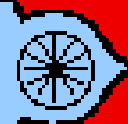
- ★ Assessment of risks for planned programs/areas.
 - * Decisions to relocate or not to do some programs?
 - * Basis for such decisions?
- ★ Increments of preparedness, watchfulness
 - * Training for crew/scientists?
 - * In-port and at-sea vigilance steps?
 - * Persons/materiel arriving and leaving; stowaways?
 - * Intelligence *re* threats?
 - * Additional security personnel?
 - * Arms, other devices?



- ★ Responses to impending or actual attacks
 - * Shipboard defensive steps
 - * Avoidance
 - * Law enforcement or military assistance, communication
- ★ Ordinary piracy vs. terrorism after Sept. 11
 - * R/Vs - minor targets? But also accessible?
 - * UNOLS vessels are American-flag
 - * Similar in-port and at-sea concerns and preparations?
 - * Obtaining appropriate intelligence/threat assessment for both?



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FLEET RENEWAL

- * Several ships getting old, especially Class III-V
- * Scientific requirements changing, increasing
- * Long lead times for federal budget, design, build - AGORs: 1983 (science reqmts.) -1997 (*Atlantis* in service)



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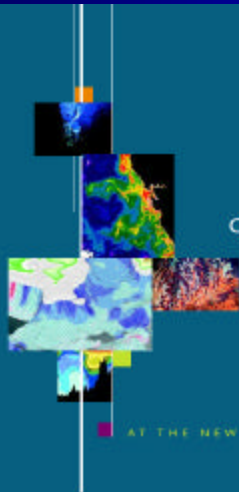
THE ACADEMIC RESEARCH FLEET



A REPORT TO THE ASSISTANT DIRECTOR FOR GEOSCIENCES
BY THE FLEET REVIEW COMMITTEES

1999

“The federal agencies funding research in oceanography should prepare and maintain a **long range plan for the modernization and composition of the oceanographic research fleet which reaches well into the 21st century**. This will avoid the high cost of obsolescent facilities and provide the Congress with a unified roadmap for out-year allocations for vessels to support oceanographic research.”

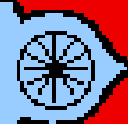
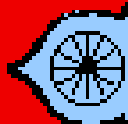


OCEAN
SCIENCES

AT THE NEW MILLENNIUM

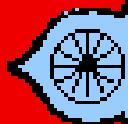
2001

“Maintaining a modern, well-equipped research fleet is **the most basic requirement for a healthy and vigorous research program** in the ocean sciences.”

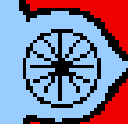


FLEET RENEWAL - SCIENCE DRIVERS

- * Cowles/Atkinson NSF-supported workshop at OSU, summer 2000: revolution in observing methods (floats, AUVs, ...) implies *increasing* need for ships:
 - * Global obs. suggest new research questions
 - * Human/lab style shipboard analyses needed for variables not measurable in unattended mode
 - * Targeted process experiments set in or suggested by global obs. context - including fast-response studies (ready reserve capacity)
 - * Deploy/service parts of ongoing obs. systems
 - * Past trends suggest 1 ship/decade increase



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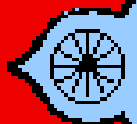
- * Federal Oceanographic Facilities Committee (FOFC) - interagency group reporting to ORAP/NORLC. UNOLS is non-voting participant.
- * Late 2000 - Initial draft plan
- * Early 2001 - extensive UNOLS/community review and comment - open, on UNOLS web.
- * Considerable UNOLS/FOFC agreement
- * Main difference - degree of fleet strengthening projected and advocated
- * Next draft (cover at right) now ready for FOFC approval, then to NORLC

Charting the Future for the National Academic Research Fleet

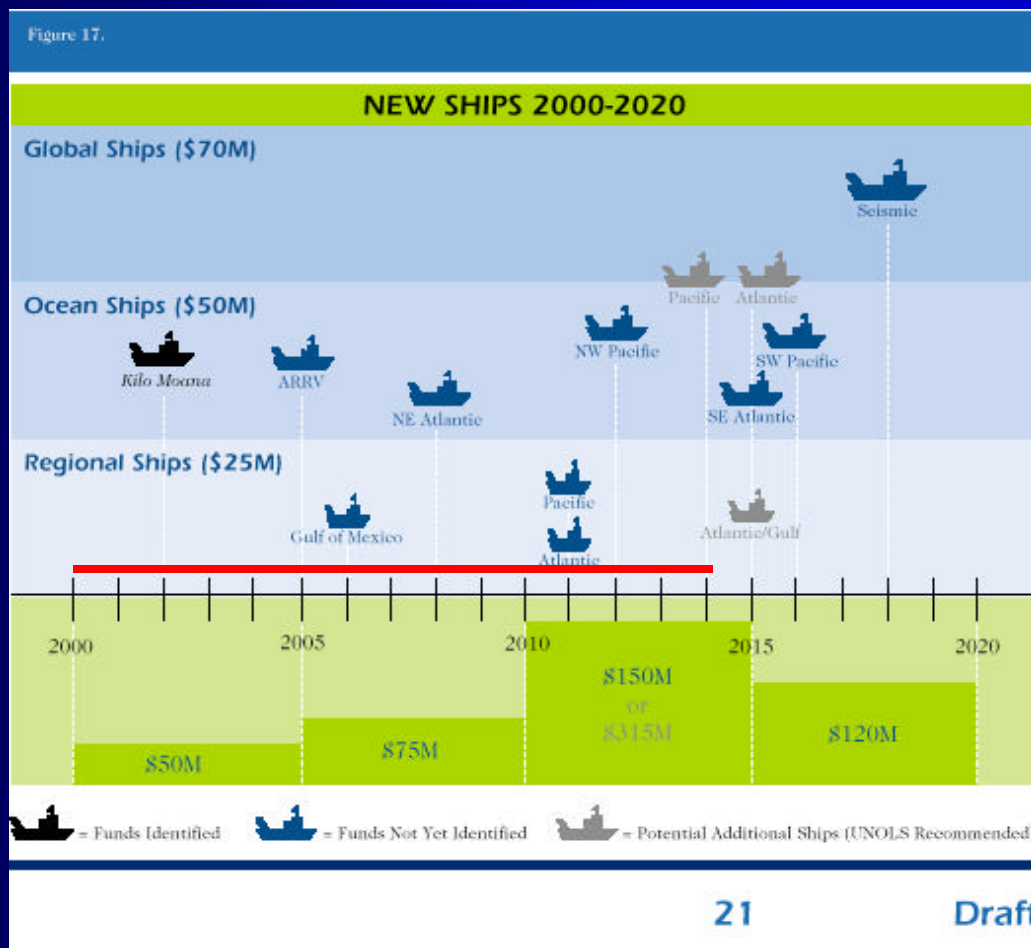


A Long-Range Plan for Renewal

Draft Plan
October 2001



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- ★ Major, long funding ramp, with or without enhancements (\$395M; \$560M)
- ★ Interagency cooperation vital
- ★ Funds/effort needed early to define mission requirements, do conceptual designs
- ★ Logical role for UNOLS/FIC
- ★ Need to keep up the pace (compare **AGOR timeline in red**)