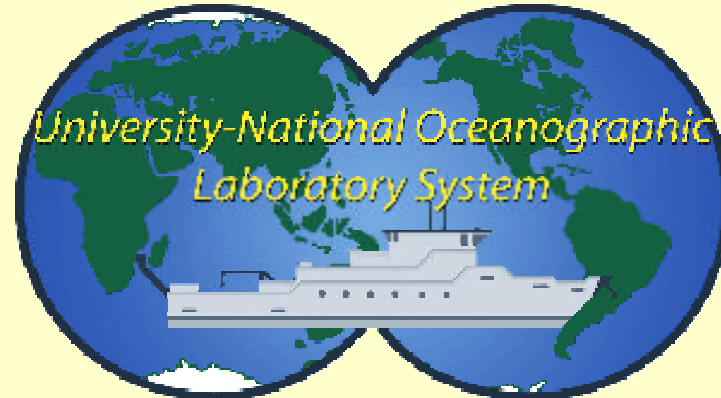


Fleet Improvement Committee Report to Council



October 5, 2006

FIC Meeting Agenda – October 4, 2006

- **Accept the minutes and Review FIC Action/Task List from March meeting**
- **Fleet Renewal Activities:** - Regional Class, ARRV, Ocean Class
- **FOFC Long-Range Fleet Renewal Plan Status and Recommendations**
- **Ocean Observatories Status report – ORION and IOOS**
- **Global Science Mission Requirements (SMRs) Update**
- **Load Handling Systems**
- **American's with Disabilities Act (ADA) Guidelines**
- **Fleet Improvement Plan (FIP) – Review and Discussion**
- **Review FIC Action Items and Assignments**
- **Other business - FIC membership and Winter Meeting Dates**

Regional Class Acquisition Status

two design teams working - final designs around mid-year next year

RFP for first operator working through NSF system - release soon

Alaska Region Research Vessel Status

in MFERC account; RFP for construction and operation working through NSF system

Ocean Class Acquisition Status

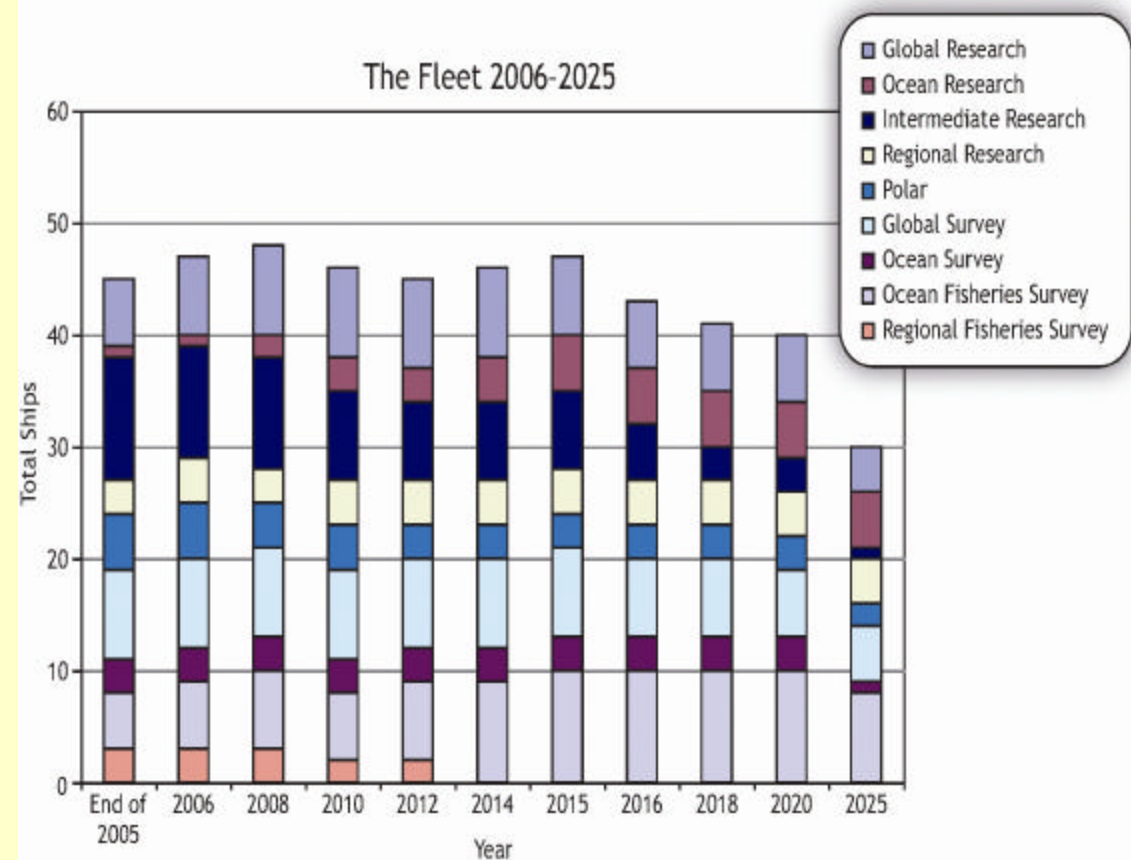
Navy conducted study on their involvement in UNOLS.

NRAC recommended 2 (instead of 4) Ocean Class ships built by Navy. Funds suggested to come from SCN but actual source is unknown.

The Federal Oceanographic Fleet Plan

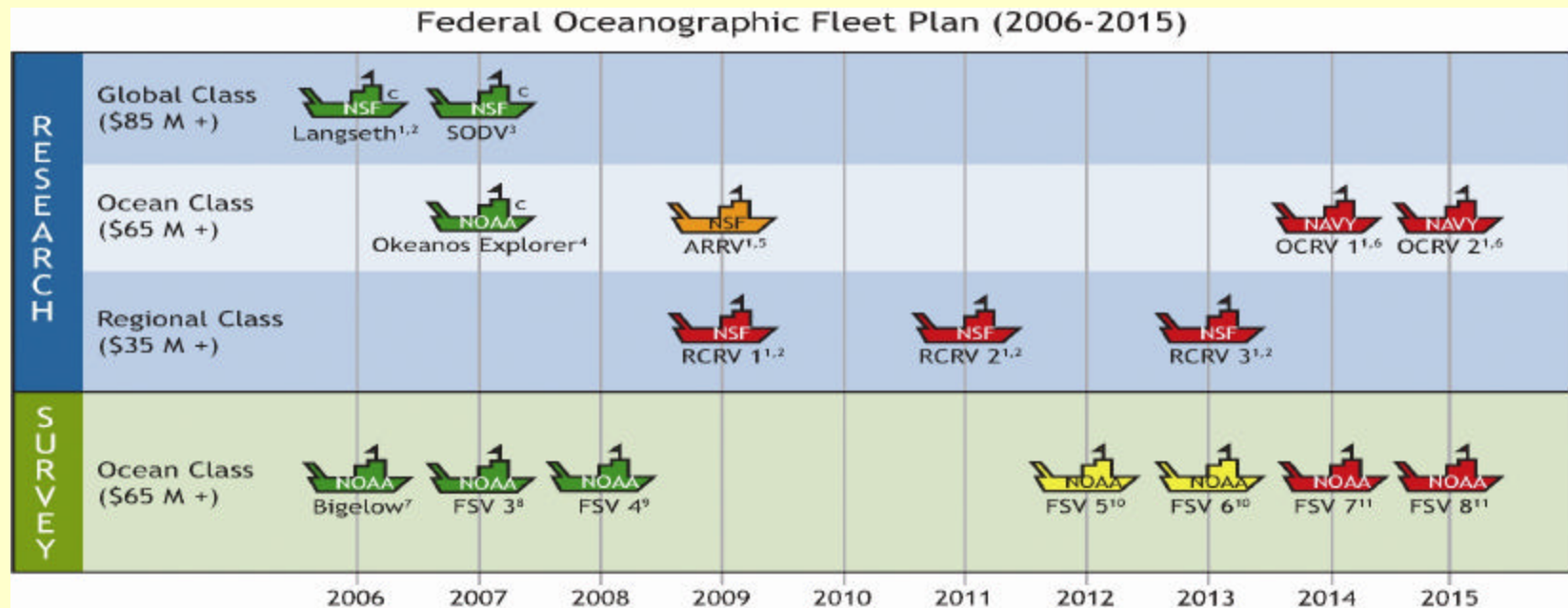
Fleet Projections

- Increase:
 - Ocean Research
 - Ocean Fisheries Survey
- Decrease:
 - Intermediate Research
 - Regional Fisheries Survey



The Federal Oceanographic Fleet Plan

Planned Renewals



¹ It is anticipated that the operator will apply for status as a UNOLS vessel

² Construction/acquisition/conversion funded through NSF Division of Ocean Sciences budget

³ FY 2005 and FY 2006 appropriation for conversion; FY 2007 President's Budget for conversion funds

⁴ FY 2005 Appropriations for vessel conversion, operating funds in FY 2007 President's Budget

⁵ FY 2007 President's Budget for Year 1 construction funds through NSF MREFC account

⁶ Vessels planned by Navy

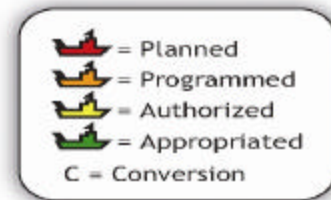
⁷ FY 2007 President's Budget for operating funds

⁸ FY 2005 appropriations for vessel construction

⁹ FY 2006 appropriations for vessel construction

¹⁰ Public Law 106-450 "Fisheries Survey Vessel Act of 2000" dated November 7, 2000 authorizes up to six fishery survey vessels

¹¹ FY 2008-2012 NOAA internal agency planning documents



General Purpose Global Vessel SMR and Mid Life Refit Considerations



2006 - *THOMPSON*

Bruce Howe (UW), Chair



2011 - *REVELLE*



2012 - *ATLANTIS*

Global Class Science Mission Requirements

- **Community Survey - In Progress:**

<http://www.unols.org/committees/fic/global/GCSMR_Survey_Form.asp>

- **Project Website:**

<http://www.unols.org/committees/fic/global/global_smr.html>

Mid-Refit Improvements

- **New Approach to Implementing Improvements**
- **Input from Operators**

Kilo Moana Handling System

- System manufacturer - Caley Ocean Systems (Glasgow)
- Delivery Status - ?
- Jason 2 test on KM: 17-21 November, 2006.

Fleet Improvement Plan

- ? Review Status of Working Draft
- ? Discuss the changes in the Federal plans (Ocean Class and Ocean Observatories) and how they will impact utilization projections and needs
- ? Compare recommendations of the draft FOFC (IWG-F) plan with that of the draft 2006 FIP
- ? Identify areas where additional information is needed.
- ? Review draft document – changes since the last meeting.
- ? Review assignments
- ? Review timeline – Schedule Phone Conferences

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UNOLS Fleet Improvement Plan — 2006

Executive Summary

I. Introduction

II. Identify Future Science Initiatives:

A. Introduction

B. Physical

C. Biological

D. MG&G

E. Chemical

F. Education and Public Outreach

G. Large Science Program Initiatives and Cross cutting Initiatives

H. Summary

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UNOLS Fleet Improvement Plan — 2006

III. UNOLS, the Current Facility Composition and Utilization

- A. The Role of UNOLS in Fleet Planning and Facility Management**
- B. Current UNOLS Facility Description**
- C. Facility Scheduling process**
- D. Fleet Trends**

IV. Future Fleet Utilization Projections and Future Requirements?

- A. The FOFC Long Range Plan**
- B. Comparison of Current UNOLS Fleet with the FOFC Fleet of 2025**
- C. Future Facility Needs and Projections**
- D. Facilities Required to Meet Future Science needs – 2025 Fleet Composition**
- E. Other (Non-UNOLS Ship) Facility Projections**

FIC Fleet Improvement Plan

Reclassification of UNOLS Ship Classes:

GLOBAL CLASS

[Full Operating Year
(FOY) = 300 days]

- *Atlantis*
- *Knorr*
- *Marcus Langseth*
- *Melville*
- *Revelle*
- *Thompson*

OCEAN CLASS

[FOY = 275 days]

- *ARRV*
- *Kilo Moana*

FIC Fleet Improvement Plan

Reclassification of UNOLS Ship Classes:

INTERMEDIATE

CLASS

[FOY = 250 days]

- *Endeavor*
- *New Horizon*
- *Oceanus*
- *Seward Johnson*
- *Wecoma*

REGIONAL CLASS

[FOY = 200 days]

- *Alpha Helix (retired 06)*
- *Cape Hatteras*
- *Point Sur*
- *Atlantic Explorer*

FIC Fleet Improvement Plan

Reclassification of UNOLS Ship Classes:

REGIONAL COASTAL CLASS

[FOY = 180 days]

- *Longhorn (retire 2006)*
- *Pelican*
- *Hugh R. Sharp*
- *Sproul*
- *Walton Smith*

LOCAL CLASS

[FOY 110 days]

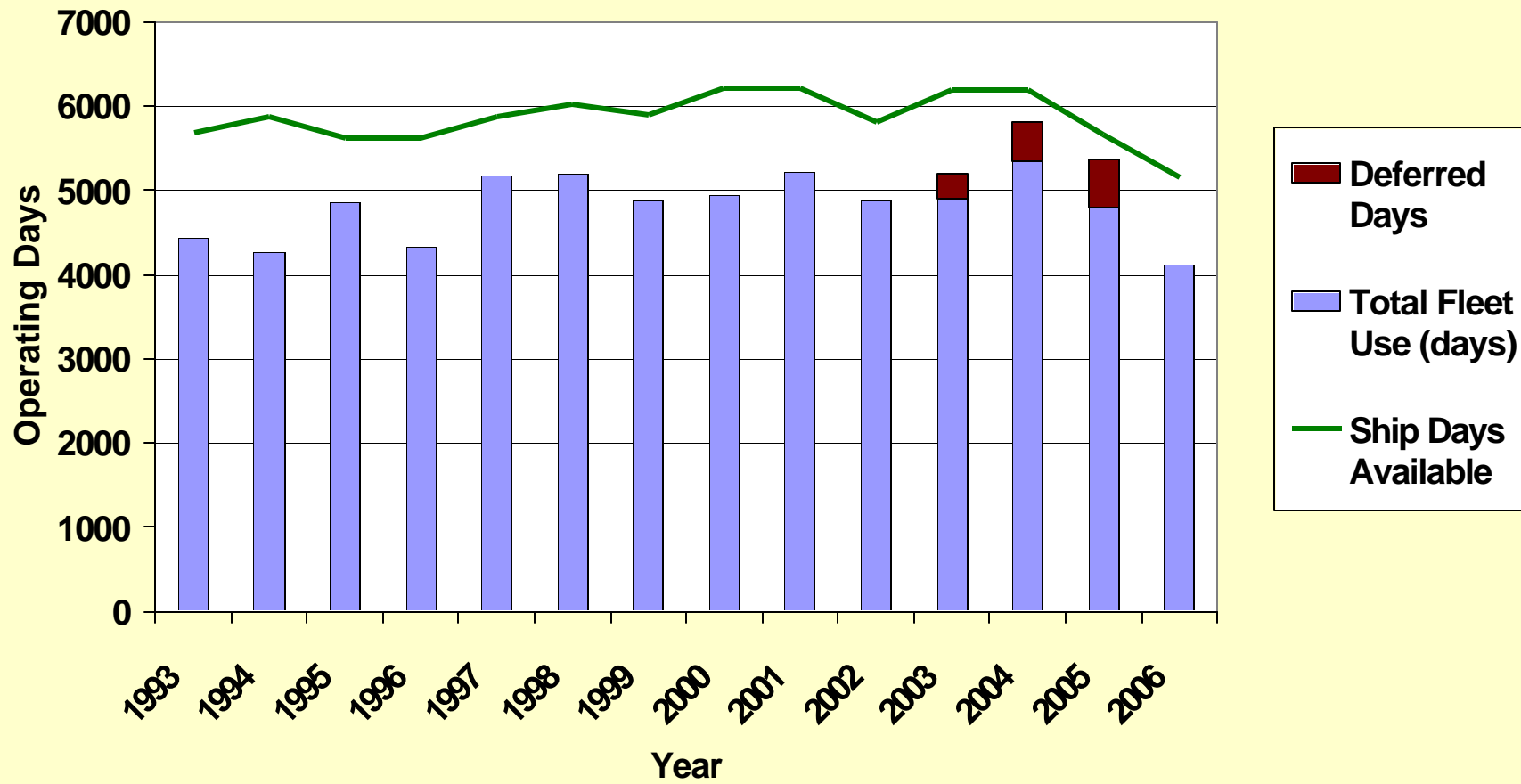
- *Blue Heron*
- *Clifford A. Barnes*
- *Savannah*
- *Urraca*

Working Draft Status

- Review Project Website:
<http://www.unols.org/committees/fic/Fip05/FIP2005_Outline.html>

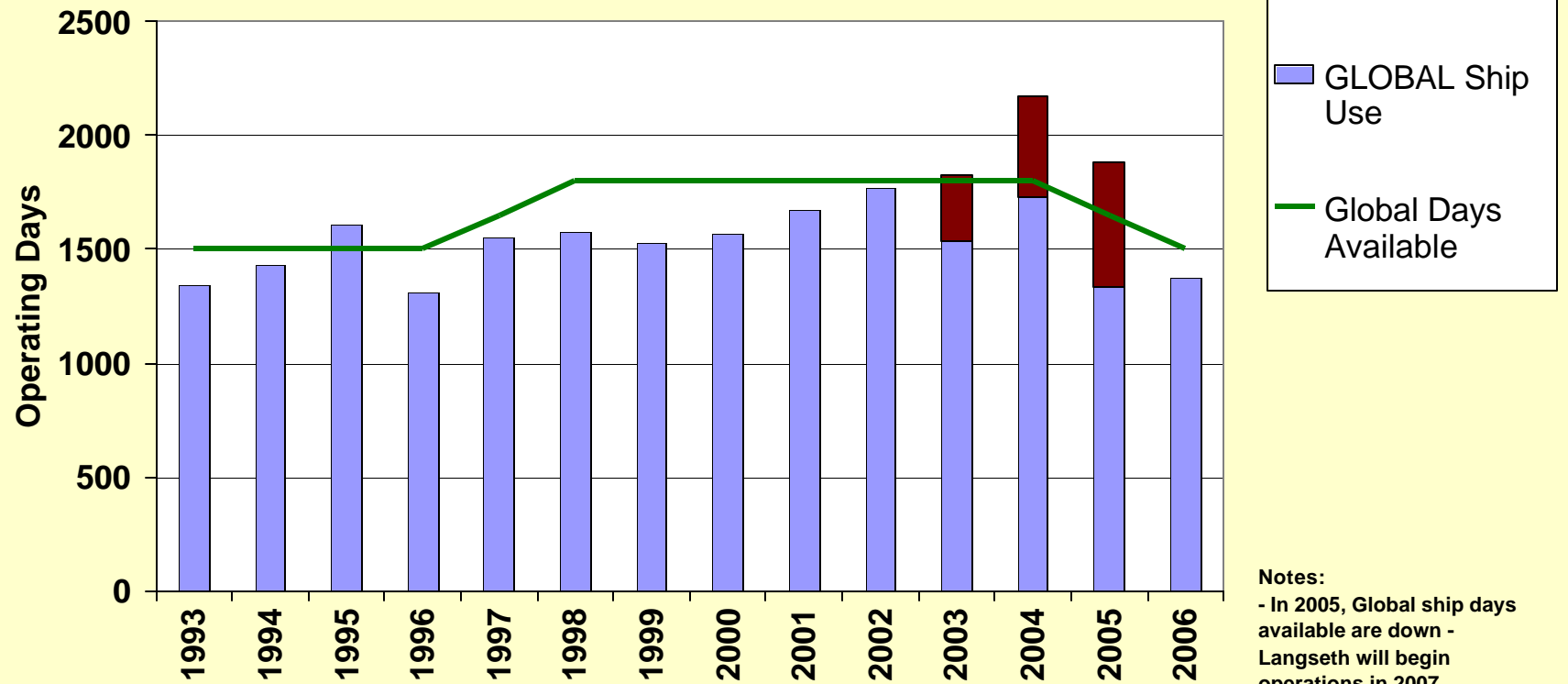
Fleet Utilization

UNOLS Fleet Utilization



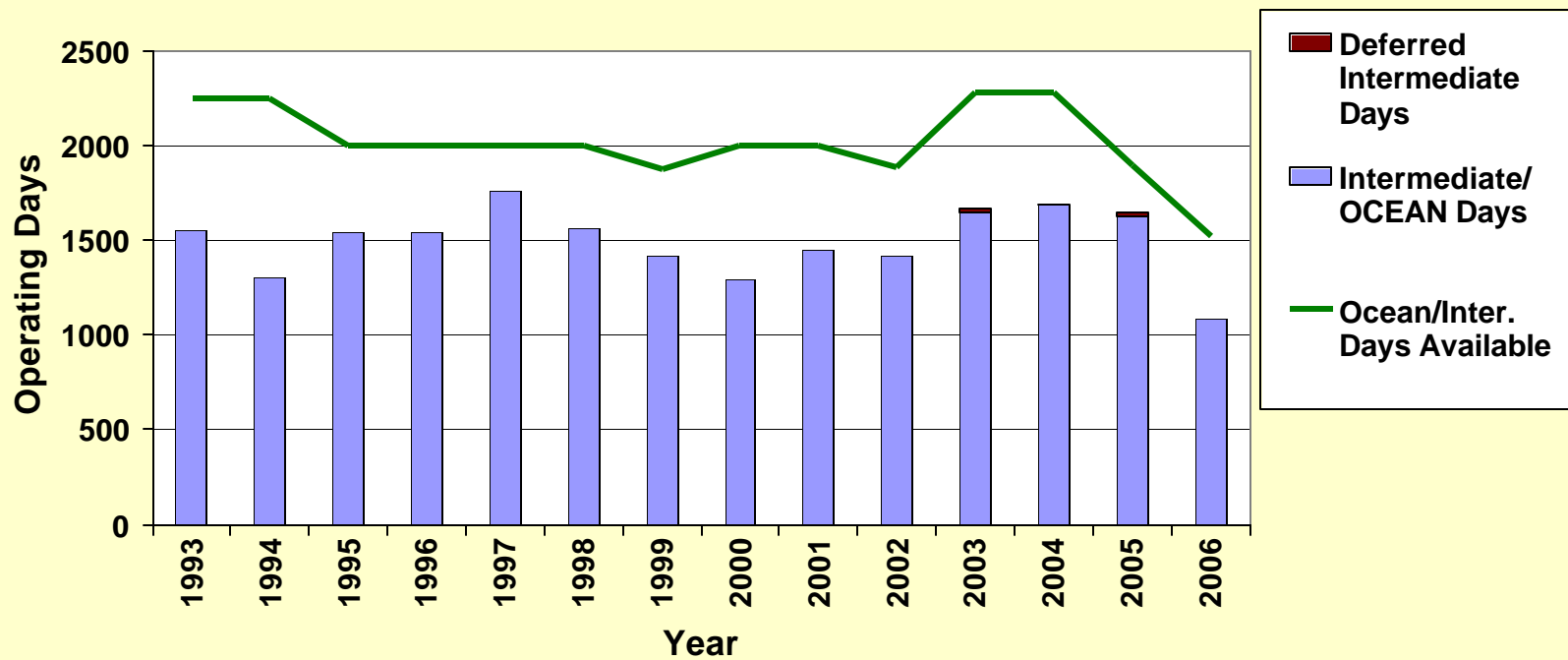
Fleet Utilization

Global Ship Utilization (1993 - 2006)



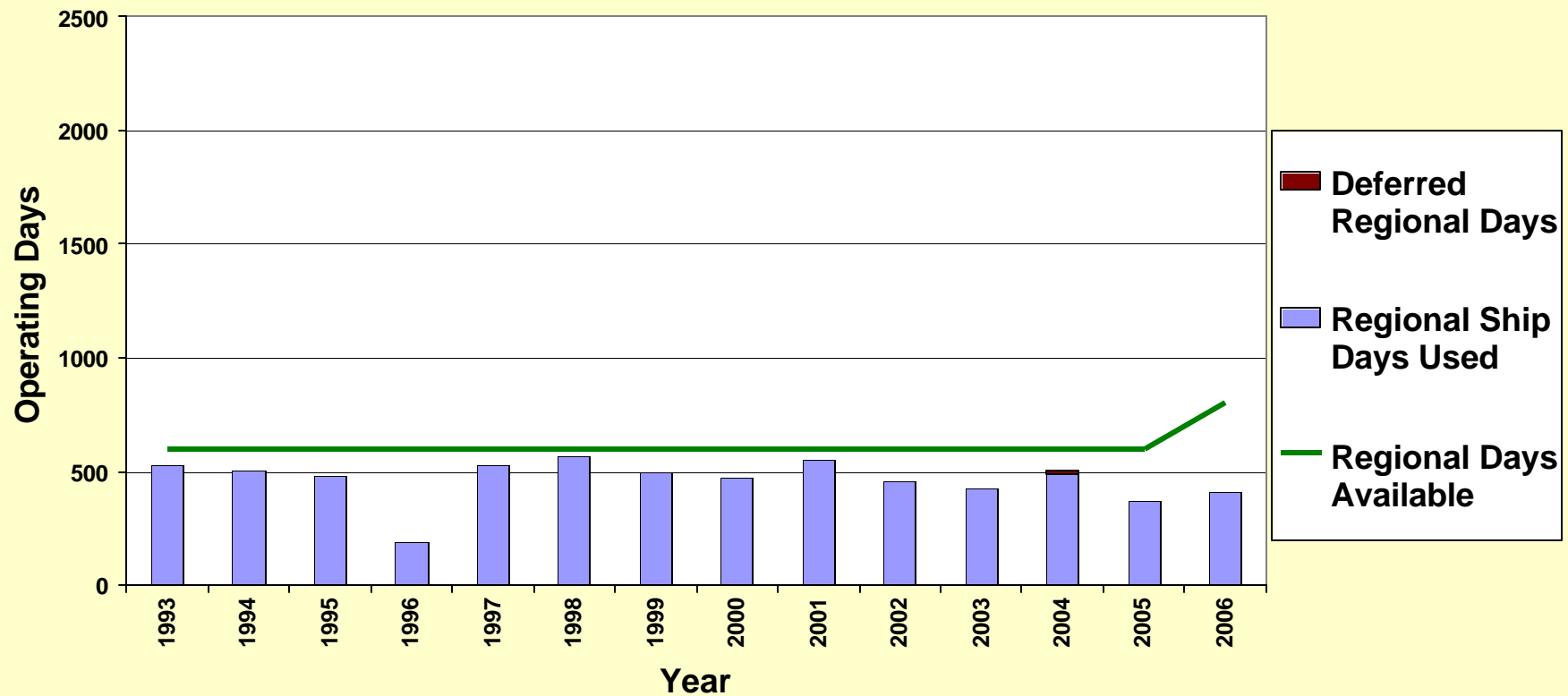
Fleet Utilization

Intermediate/Ocean Class Utilization (1993 - 2006)

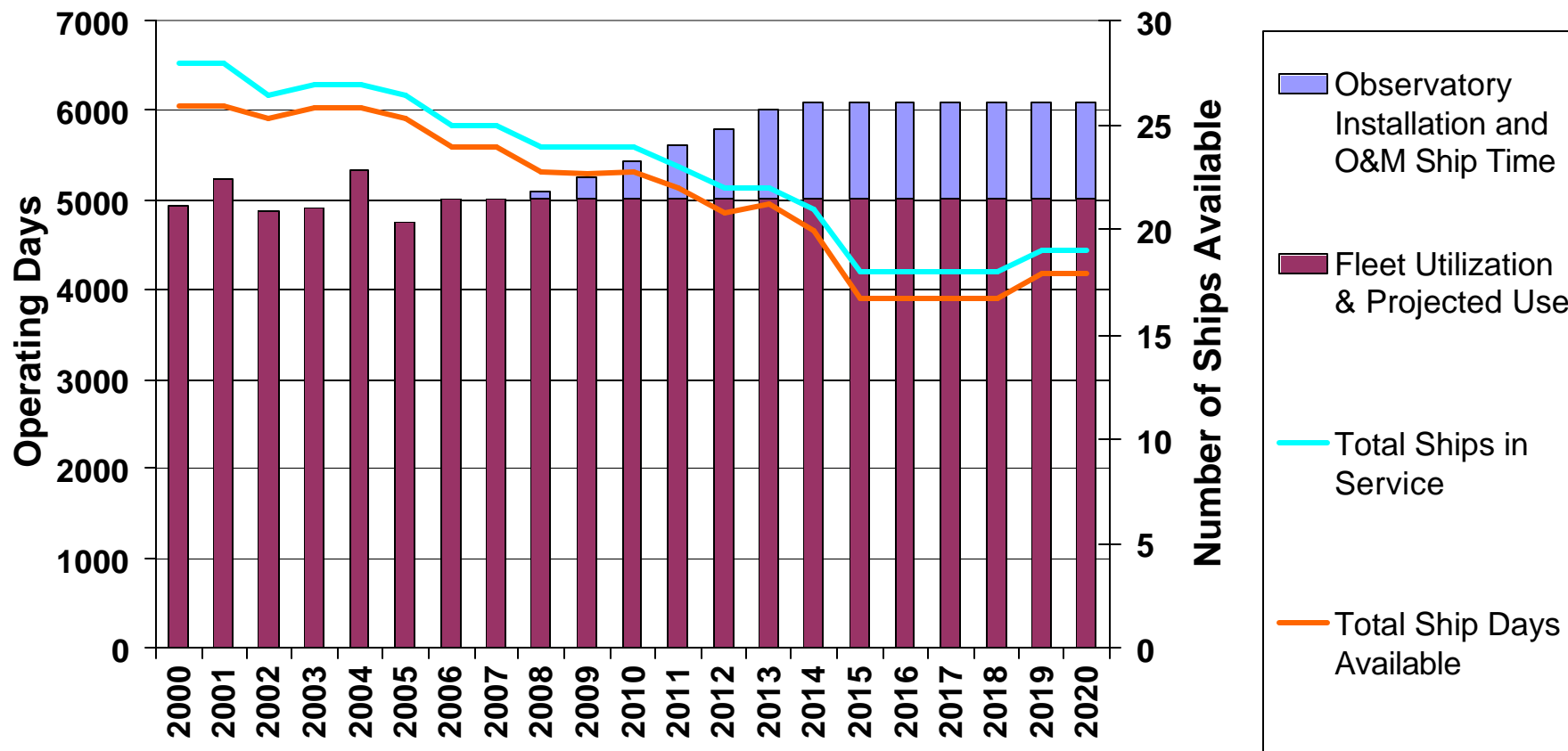


Fleet Utilization

Regional Class Utilization (1993 - 2006)

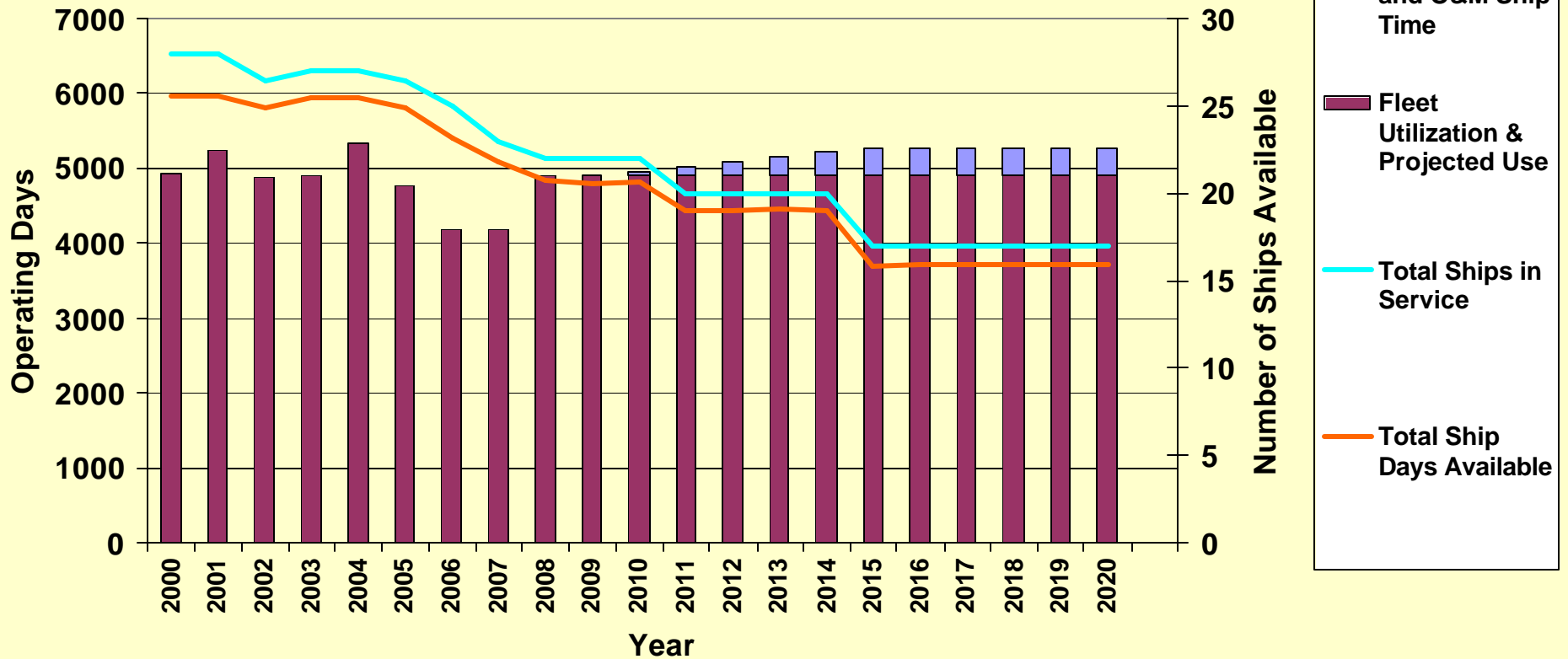


UNOLS Fleet Utilization and Projections (2000 - 2020)



From March FIC Meeting

UNOLS Fleet Utilization and Projections (2000 - 2020)



New Projection with 2 Ocean Class Ships

Current Fleet vs. 2020 Fleet

Current UNOLS Fleet (>40m)

Class	Number of Ships	Total # Science Berths in 2005	Days Available	Avg Op Days Used (03-06)
Global	6	199	1800	1494
Ocean	1	30	275	250
Intermediate	5	104	1250	1497
Regional	4	61	800	422
Fleet Total	16	394	4125	3663

2020 Fleet

Number of Ships	Total # Science Berths (1)	Available Days
4	130	1200
4	106	1100
0	0	0
4	80	800
12	316	3100

Notes: 1) Berths: Ocean Class = 25, *Kilo Moana* = 30, ARR V = 26
Regional = 20

UNOLS Vessel Retirement Dates
and Service Life Extension
Program Estimates

Update Vessel Retirement Dates

In 2004 the UNOLS Vessel Operators were polled:

- Should vessel retirement dates be extended? And if so:
 - Service Life Extension Program (SLEP) cost estimate for 5-year extension
 - SLEP cost estimate for 10-year extension
- How do the capabilities of their current ships compare to the Ocean Class and Regional Class SMRs?

Vessel Retirement Dates and SLEP Estimates

Nine UNOLS ships >40 m have retirement dates prior to 2020 and are potential candidates for a SLEP:

- Most of the ships (>40m) can have their lifetimes extended 5 and possibly 10 years for an estimated cost of \$1.025M-\$5M per ship for a 5-year life extension.
- Extension of retirement dates for most vessels <40m is not recommended.
- The immediate focus for ships with retirement dates past 2020 is on mid-life refit planning.

Revised Retirement Dates

Preliminary Findings

- The SLEP estimates focus on maintaining the ship in an operational condition without enhancing the scientific capabilities of the platform.
 - The existing Intermediate Class vessels do not meet most of the desired Ocean Class SMRs
 - Regional Class ships fall short of the Regional Class SMRs in many areas.
- Maintaining the current UNOLS fleet vessels beyond their designed service life will significantly impede the advance of ocean science relative to that possible with new ships that meet the SMR specifications.

UNOLS Vessel Retirement Dates and Service Life Extension Program (SLEP)

Vessel	Year Built / Refit	Length (ft)	FOFC Retirement Date	Revised Retirement Date (1)	5-year estimated SLEP Cost (\$M) (2)
Vessels > 40 m					
ENDEAVOR	1976	184	2008	2018	\$1.025
OCEANUS	1976	177	2009	2019	\$1.175
WECOMA	1976	185	2010	2020	\$1.5
CAPE HATTERAS	1981	135	2011	2016	\$2
POINT SUR	1981	135	2011	2016	\$2.125
MELVILLE	1969 / 1991	279	2014	2019	\$3.745
KNORR	1970 / 1989	279	2015	--	--
SEWARD JOHNSON	1985	204	2015	2020	\$5
NEW HORIZON	1978	170	2016	2021	\$1.150
LANGSETH	1996/2006	235	2025	--	--
T.G. THOMPSON	1991	274	2021	--	--
SEWARD JOHNSON II	1982	161	2026	--	--
R. REVELLE	1996	274	2026	--	--
ATLANTIS	1997	274	2027	--	--
KILO MOANA	2002	186	2032	--	\$7.5

UNOLS Vessel Retirement Dates and Service Life Extension Program (SLEP) Estimates

Vessel	Year Built / Refit	Length (ft)	FOFC Retirement Date	Revised Retirement Date (1)	5-year estimated SLEP Cost (\$M) (2)
Vessels <40 m					
CAPE HENLOPEN	1976	120	2005	--	--
WEATHERBIRD II	1981	115	2013	--	--
PELICAN	1985	105	2013	--	\$2
SPROUL	1981	125	2015	2020	\$0.625
BLUE HERON	1985	86	2015	--	--
URRACA	1986	96	2016		
WALTON SMITH	2000	96	2031	--	--
SAVANNAH	2001	91	2032	--	--

FIC Membership

- **David Hebert, URI (Chair) – [at-large, 9/06] PO**
- **Newell Garfield, SFSU – [Non-op, 9/06] PO**
- **Jim Cochran, LDEO – [At-large, 9/07] MG&G**
- **Terry Whitley, U Alaska – [Operator, 9/07] BIO/Chem**
- **Clare E. Reimers, OSU – [Operator, 1/09] Chem**
- **Bauer, Jim, VIMS – [Non-Operator, 9/06] Chem/Bio**
- **Maureen Conte, BBSR – [Operator, 9/09] BioGeoChm**
- **Al Hine, USF – [Non-Operator, 9/09] Geology**
- **Marc Willis, RVTEC Rep (ex-officio)**
- **Al Suchy, RVOC Rep (ex-officio)**

FIC Action/Task List

(from March 2006 Meeting)

Task Description	Action/Status
Regional Class - Stay informed	FIC
Ocean Class Planning – Provided input as requested	FIC and OCSC
KILO MOANA Actions:	
<ul style="list-style-type: none"> • Contact Brian Taylor to keep abreast of Handling System details 	Dave Hebert
<ul style="list-style-type: none"> • Draft EOS or other appropriate article 	D. Hebert/B. Taylor
Design and Constructions Efforts - Stay engaged in ongoing design and construction efforts (ARRV, <i>Langseth</i> Conversion, etc.)	FIC

FIC Action/Task List

(From March 2006 Meeting)

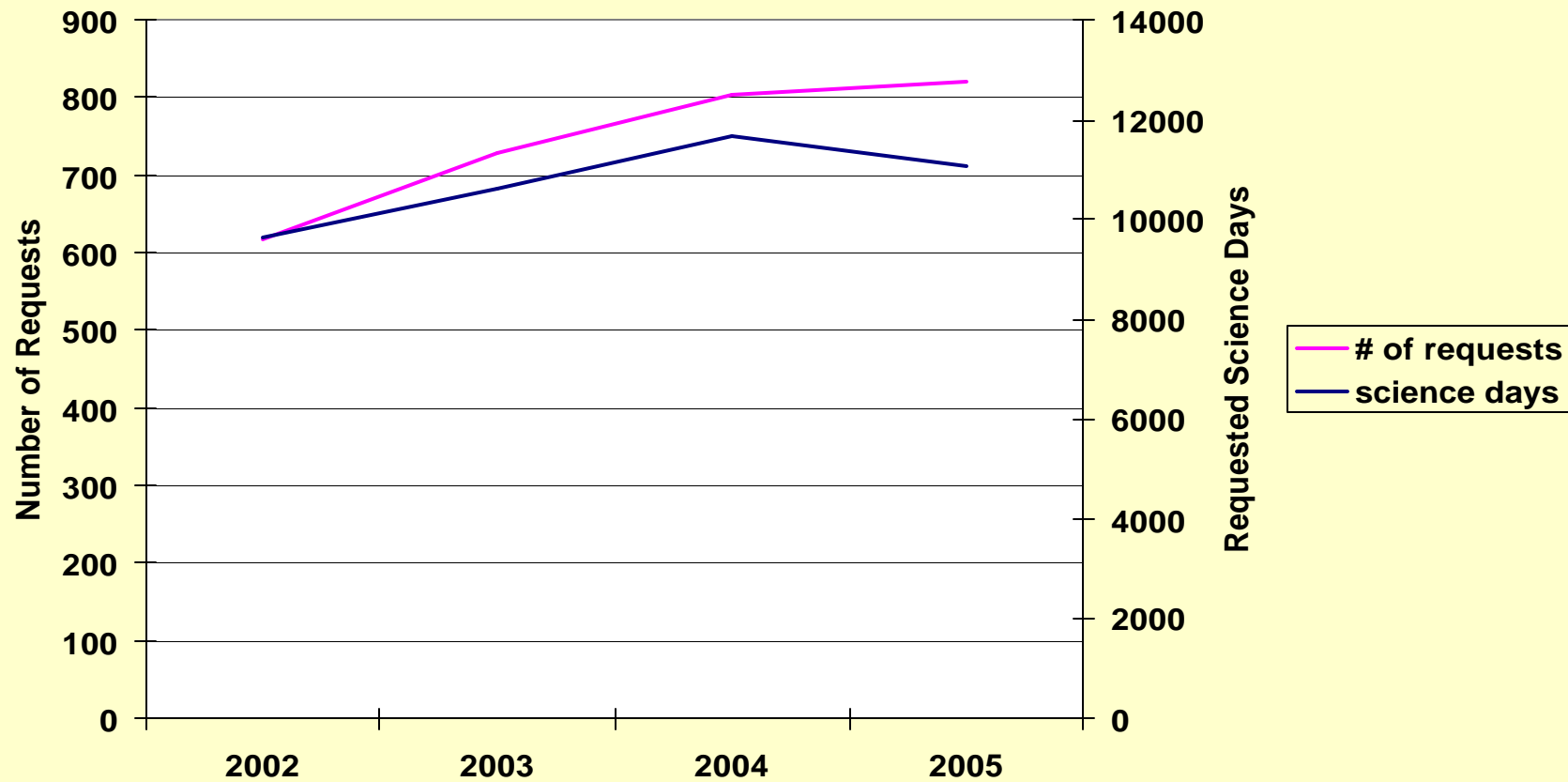
Task Description	Action/Status
Global Class: Update SMRs	Global Class SMR Cmt
2005 Fleet Improvement Plan: <ul style="list-style-type: none"> • Complete all writing assignments and have next draft available for review prior to then next meeting. 	FIC
ADA Guidelines:	
? Provide preliminary recommendations to NSF for Regional Class Construction effort	ADAC - Complete
<ul style="list-style-type: none"> • Provide draft UNOLS Fleet Guidelines (Structural and Procedural) in Fall 2005 	ADAC

FIC Action/Task List

(From March 2006 Meeting)

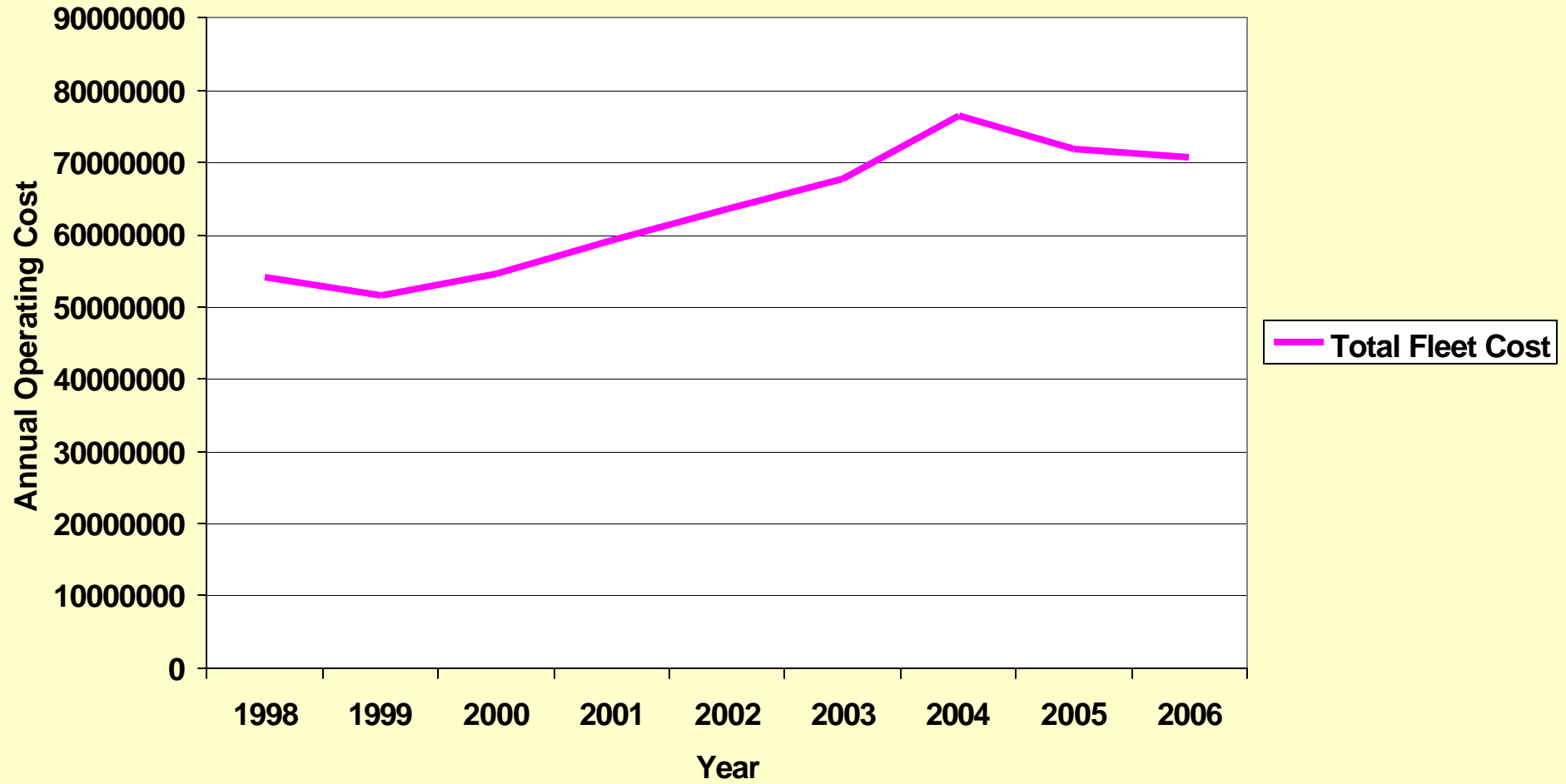
Task Description	Action/Status
Ocean Observatories – Stay in contact with ORION Office.	Dave Hebert
FIC Membership –Replacements are needed. Announce a call for nominations.	Complete – M. Conte and A. Hine appointed.
Definition of UNOLS Ship Classes – Re-examine the UNOLS ship class definitions and determine the appropriate classification for each ship in the fleet. This will need to be carried out in conjunction with FOFC, so that the Fleet Improvement Plan and the FOFC Plan are consistent.	FIC - Complete

UNOLS Ship Time Demand

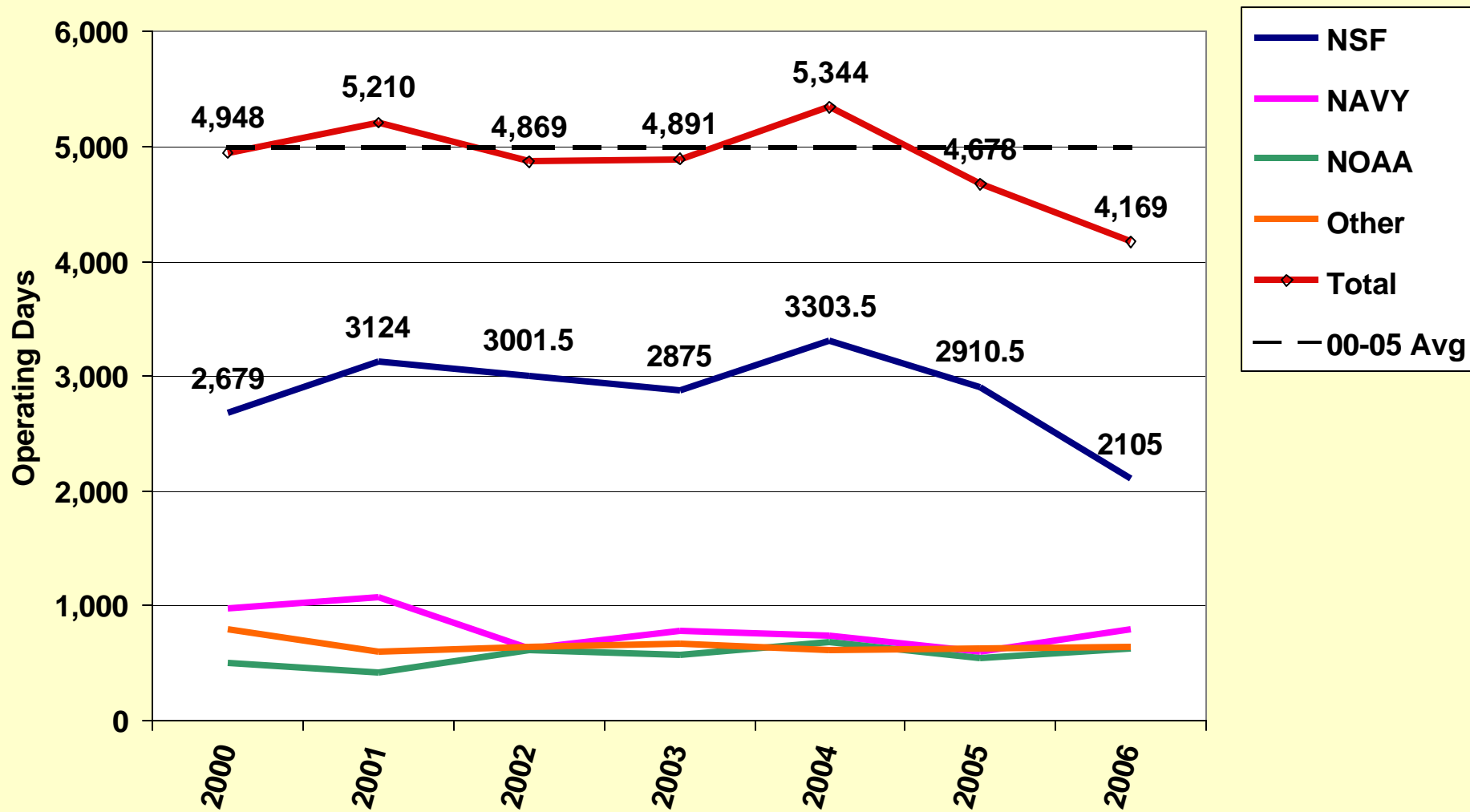


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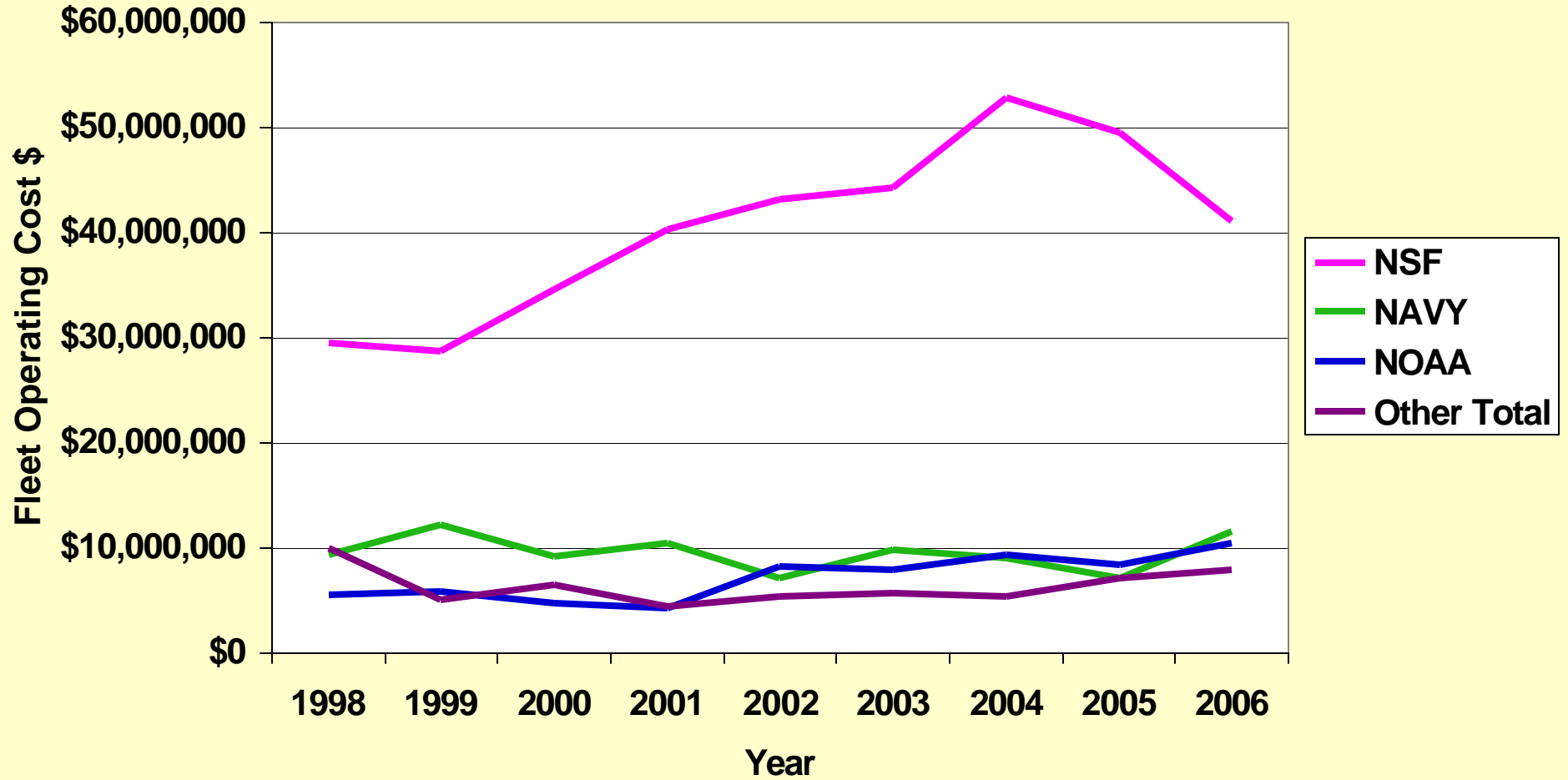
Fleet Cost: 1996 - 2006



UNOLS Fleet Utilization (2000 - 2006)



Fleet Operating Cost - by Agency



SMR Inconsistencies - Global

SMR parameter	Laboratories				Science load	
	Wet/hydro lab		Electronics/ computer lab			
	RC	OC	RC	OC	RC	OC
	400 sq ft	400 sq ft	Separate or part of main lab	300 sq ft	At least 50 LT	200 LT
<u>GLOBAL SHIPS</u>						
MELVILLE				X		X
KNORR	320				175 LT	
ATLANTIS		880		750	150 LT	

FIP Assignments and Timeline

Propose: Series of short phone conferences to review specific sections.

Federal Plans: Questions, Changes and Impacts

- Two Ocean Class ships versus 4 ships
- Ocean Class Ship Construction Timeline
- Global Class Mid-Life Refits
- Service Life Extension Plans – Intermediate Vessels?
- Are the 2 Ocean vessels replacing Intermediates or *Knorr/Melville*?
- Vessel Retirement Dates – Are adjustments needed?
- Ocean Observatories – Timelines and Scale?