

# Fleet Improvement Plan

- General Status:
  - Edited Sections I, II, and II
  - Consistent use of acronyms (Appendix with acronym list needed)
  - Updated Charts as needed
  - Attempt to identify any area requiring further attention.

# FIP – Executive Summary and Section I

- Executive Summary
  - This should be drafted last and summarize findings and recommendations.
  - Keep brief
- Section I - Introduction
  - Provides background
  - Explains why the plan is needed.

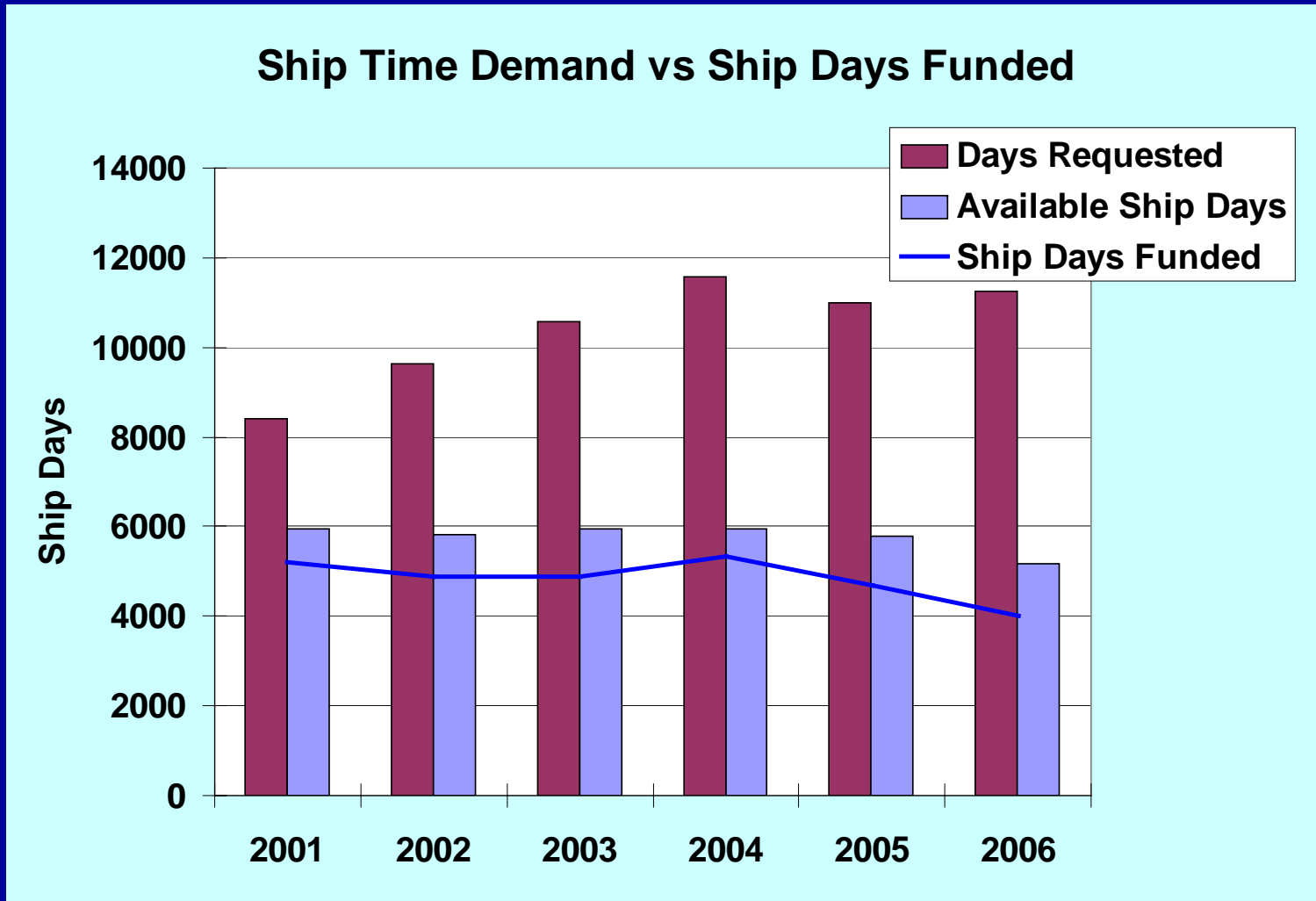
# Section II – Future Science Initiatives

- II.C. Biological Oceanography:
  - May need to be updated
  - Insert needs text to go with images.
- II.G. Ocean Observatories
  - Insert text provided by Maureen
  - Update facility needs
  - Spell out “IDOE”
- II.H. Summary – Complete Dave’s table and draft summary.

# Section III: UNOLS, the 2006 Facility Composition and Trends

- Added and cleaned up figures to help describe UNOLS, the organization, and scheduling process, fleet listing, service life chart.
- CIRPAS – question: should the future aircraft needs remain in section III?
- Updated NDSF to new configuration
- Updated Figure 8: Days available / funded days / demand.
- In describing trends, replaced “utilization” with “funded ship time”

# Figure 8: Ship time demand, ship days funded, and days available



# Section IV: Future Fleet Utilization Projections and Future Requirements

- A. The Interagency Working Group on Facilities (IWG-F) Long Range Plan
  - 1. Federal Budgets
  - 2. IWG-F Fleet
    - a. Definition and Composition
    - b. Construction Timeline and Costs
- B. Comparison of the Current UNOLS Fleet with the IWG-F Fleet of 2025
- C. Future Facility Needs and Projections
  - 1. Maintain Current Fleet Capacity
  - 2. Additional Facility Needs
    - a. Ocean Observatory Facility Needs - Installation, Operation, and Maintenance
    - b. Modes of Operation - Event Response Capability
- D. Alternate and Emerging Technologies
- E. Facilities Required to Meet Future Science Needs – 2025 Fleet Composition (Fig 17 Update)
  - 1. Fleet Required to Maintain Current Capability
  - 2. Fleet Required to Meet Ocean Observatory Needs
  - 3. Construction and Operation Costs
  - 4. Consequences of Not Carrying Out UNOLS Fleet Renewal
- F. Other (non-UNOLS Ship) Facility Projections

## IV.A IWG-F Long Range Plan

1. Federal Budgets??
2. IWG-F Fleet
  - a. Definition and Composition
  - b. Construction Timeline and Costs

- Instead – Simply state current renewal plans:

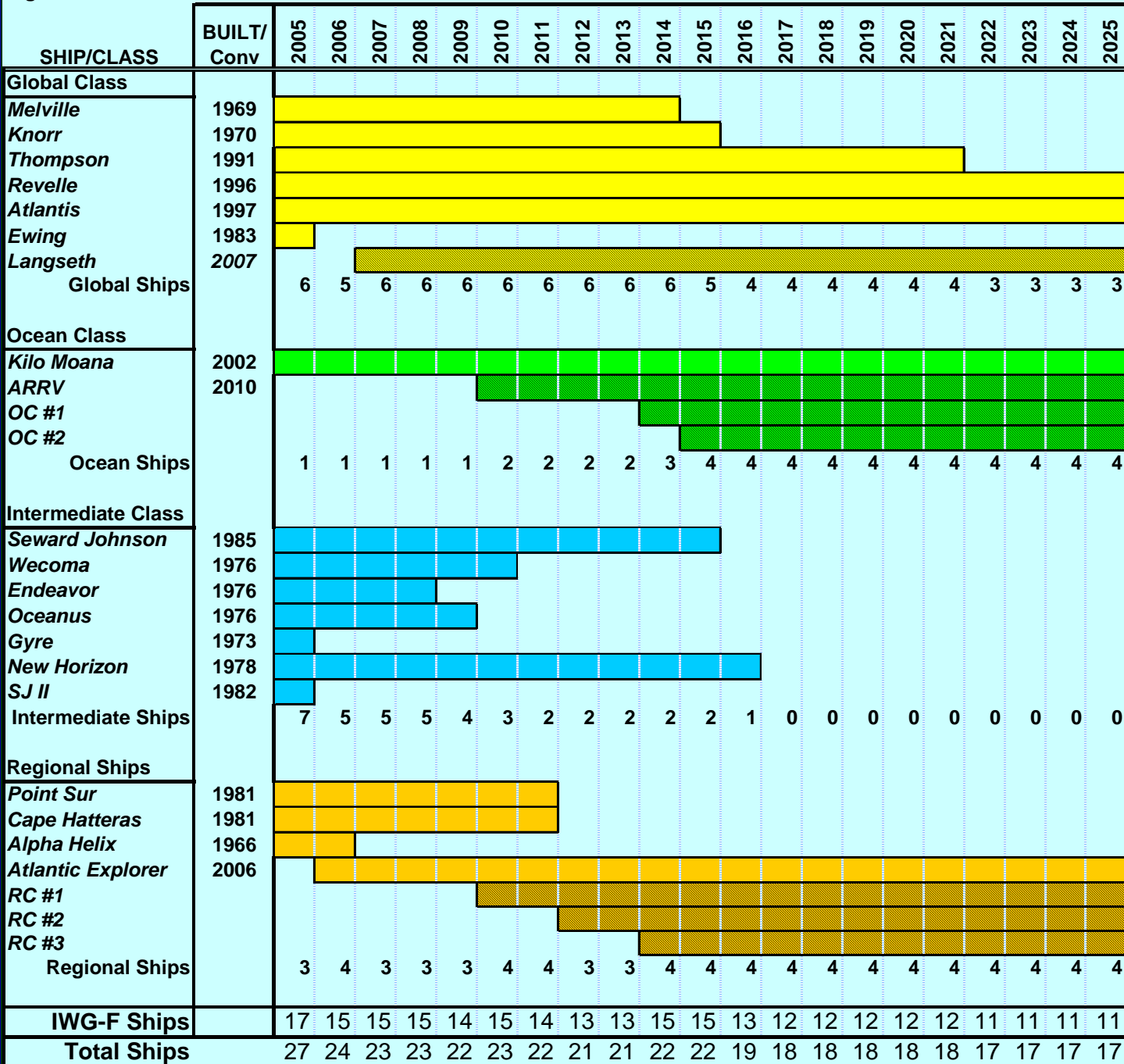
<b>Fleet Renewal Timeline</b>		
<b>Ships</b>	<b>UNOLS</b>	<b>Cost?</b>
<b><u>NSF:</u></b>		
Langseth	2008	
ARRV	2010	
RC #1	2010	
RC #2	2012	
RC #3	2014	
<b><u>Navy:</u></b>		
OC #1	2014	
OC #2	2015	

# Updated FOFC Figure 17





Figure 2: UNOLS Vessel Service Life Timeline



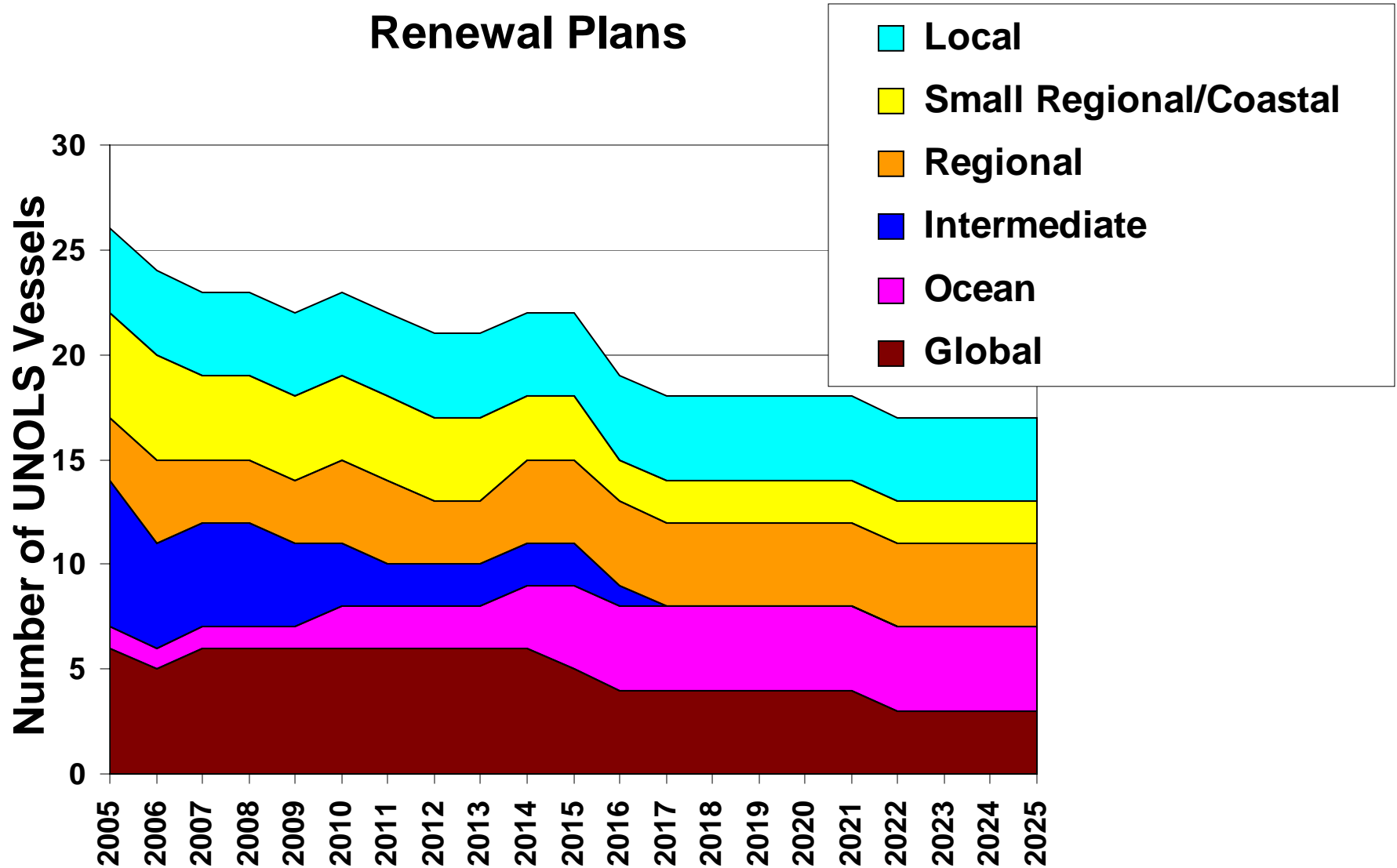
# UNOLS Vessel Retire- ment Dates

# UNOLS Vessel Retirement Dates

Figure 2: UNOLS Vessel Service Life Timeline

SHIP/CLASS	BUILT/ Conv	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>Regional/Coastal Ships</b>																						
<i>Robert Gordon Sproul</i>	1981	[Bar from 2005 to 2015]																				
<i>Pelican</i>	1985	[Bar from 2005 to 2014]																				
<i>Longhorn</i>	1971	[Bar from 2005 to 2006]																				
<i>Walton Smith</i>	2000	[Bar from 2005 to 2025]																				
<i>Weatherbird II</i>	1989	[Bar from 2005 to 2006]																				
<i>Cape Henlopen</i>	1976	[Bar from 2005 to 2006]																				
<i>Hugh R. Sharp</i>	2005	[Bar from 2005 to 2025]																				
Regional/Coastal Ships		6	5	4	4	4	4	4	4	4	3	3	2	2	2	2	2	2	2	2	2	2
<b>Local Ships</b>																						
<i>Urraca</i>	1986	[Bar from 2005 to 2015]																				
<i>Savannah</i>	2001	[Bar from 2005 to 2025]																				
<i>Blue Heron</i>	1985	[Bar from 2005 to 2015]																				
<i>Clifford Barnes</i>	1966	[Bar from 2005 to 2025]																				
Local Ships		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
<b>Total non IWG-F</b>		10	9	8	8	8	8	8	8	8	7	7	6	6	6	6	6	6	6	6	6	6
<b>Total Ships</b>		27	24	23	23	22	23	22	21	21	22	22	19	18	18	18	18	18	17	17	17	17

# Evolution of UNOLS Fleet with Current Fleet Renewal Plans



### A1.3. Age of the fleets and its foreseeable evolution

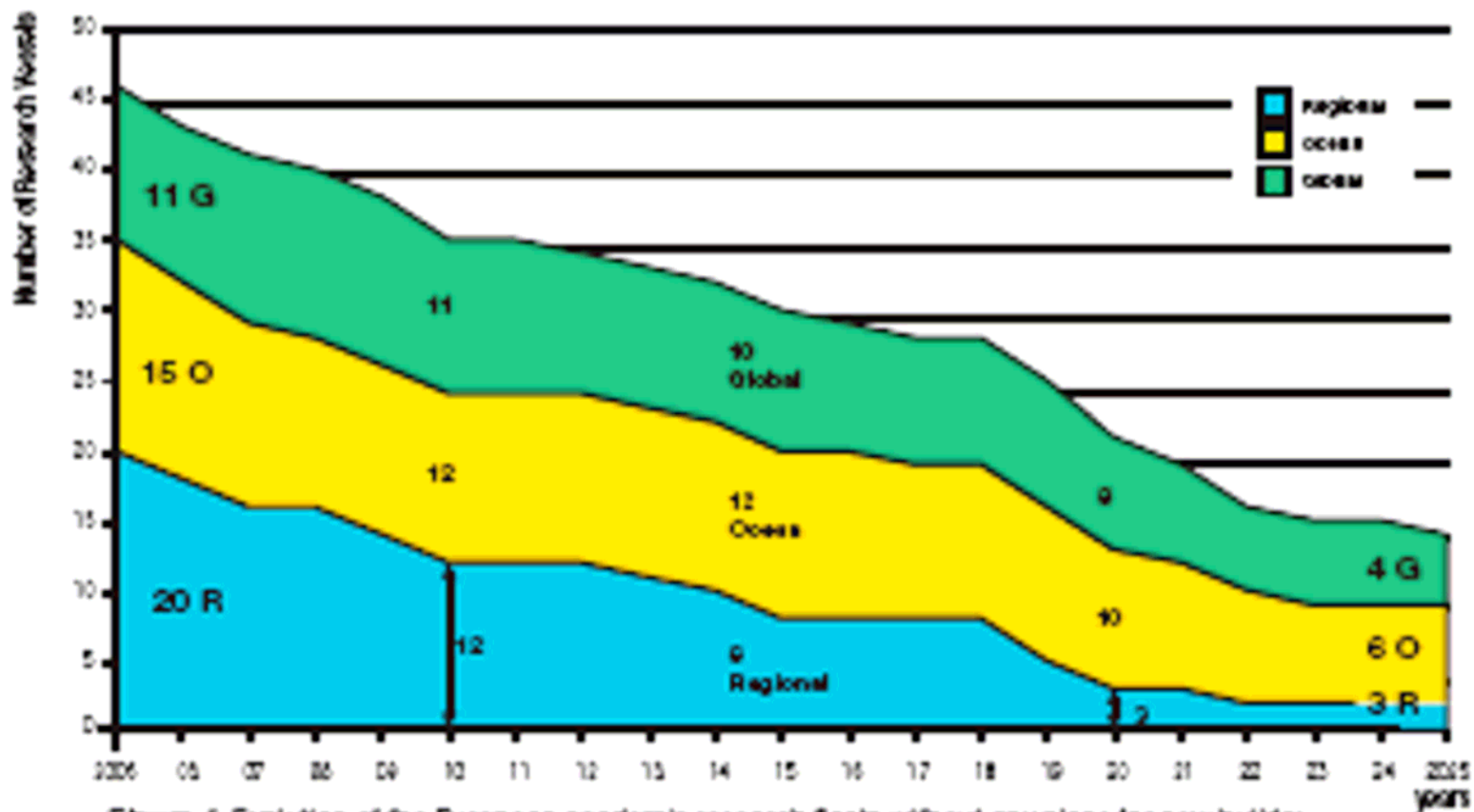


Figure 4: Evolution of the European academic research fleets without any plans for new builds; In about 20 years the fleet will be reduced by 70%.

*Position Paper 10 - European Ocean Research Fleets, March 2007, "Towards a Common Strategy and Enhanced Use"*

## IV. B. - A Comparison of Today's Fleet with the Fleet 2025

Class	Number of Ships in 2005	Total # Science Berths in 2005	Days Available	Avg Days Used (2003 - 2006)		Number of Ships in 2025	Total # Science Berths in 2025	Available Days
Global	6	199	1800	1483		3	94	900
Ocean	1	30	275	249		4	120	1100
Intermed.	7	147	1750	1431		0	0	0
Regional	3	39	600	420		4	70	800
<b>Fleet Total</b>	<b>17</b>	<b>415</b>	<b>4425</b>	<b>3583</b>		<b>11</b>	<b>284</b>	<b>2800</b>

**Note:** ARRV and 2 Ocean Class ships will have 30 bunks each

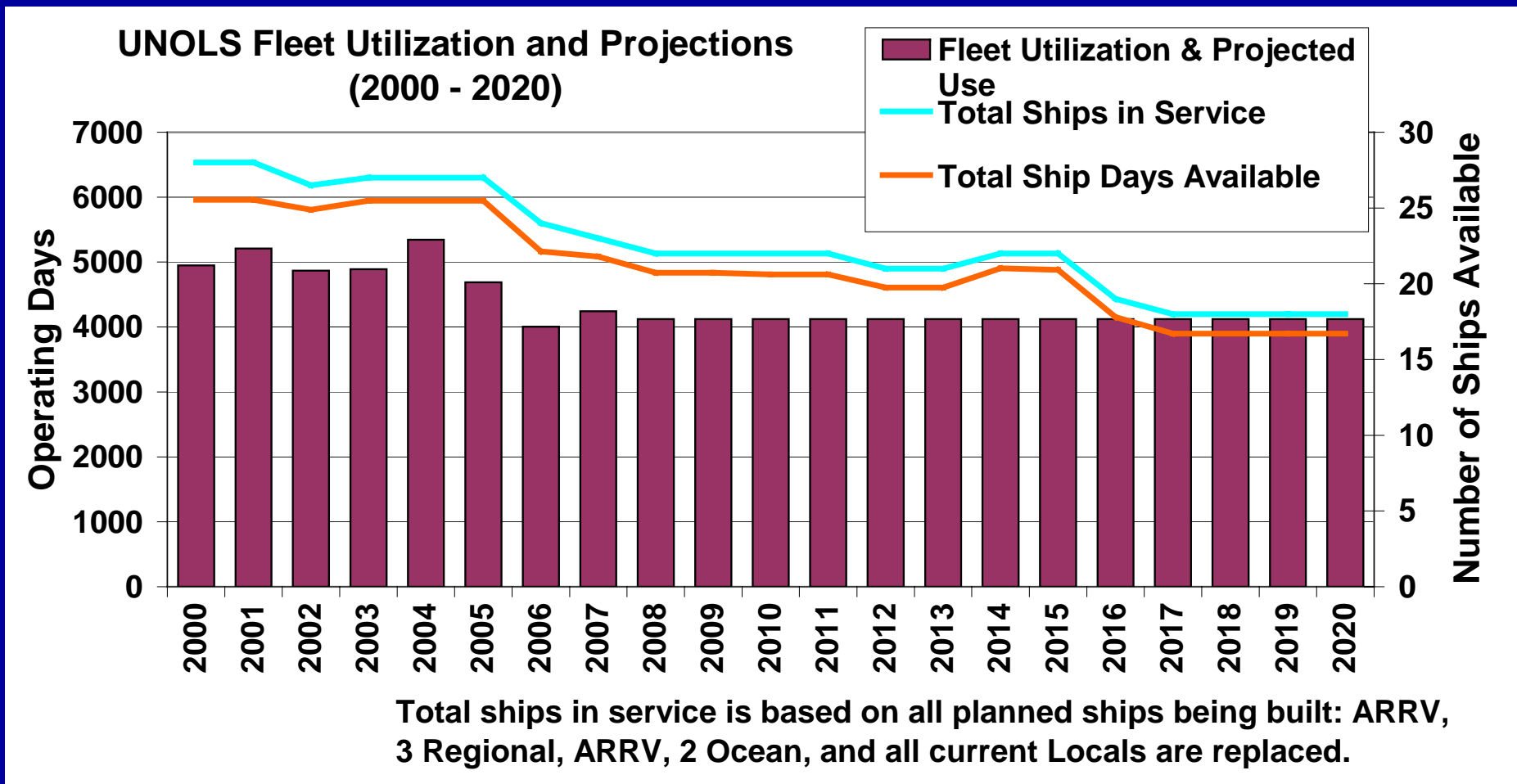
**New Regional class ships each have 16 bunks**

## IV.C. Future Facility Needs and Projections

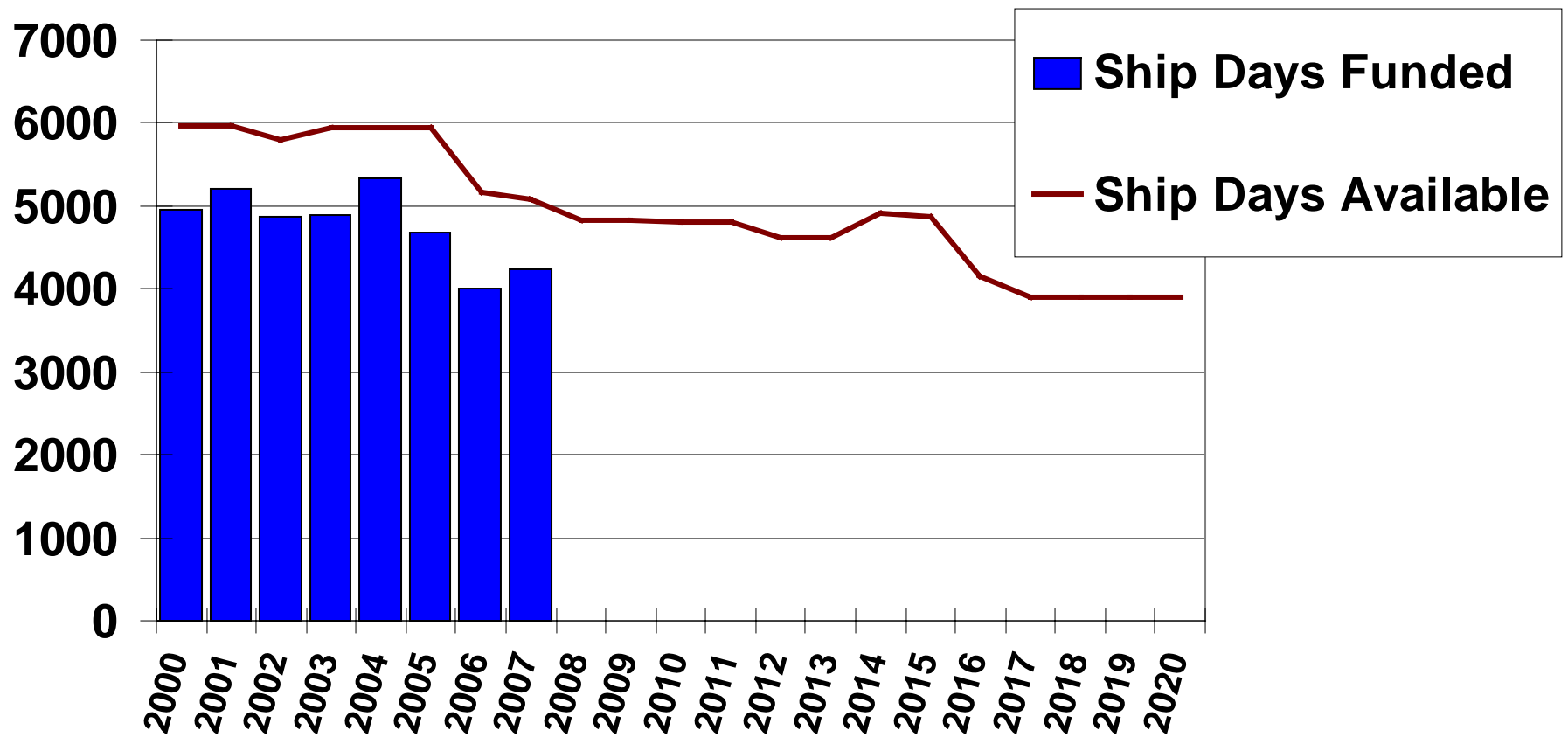
1. Maintain Current Fleet Capacity
2. Additional Facility Needs
  - a. Ocean Observatory Facility Needs - Installation, Operation, and Maintenance
  - b. Modes of Operation - Event Response Capability

Mike's scheduling model?

# UNOLS Fleet Projections



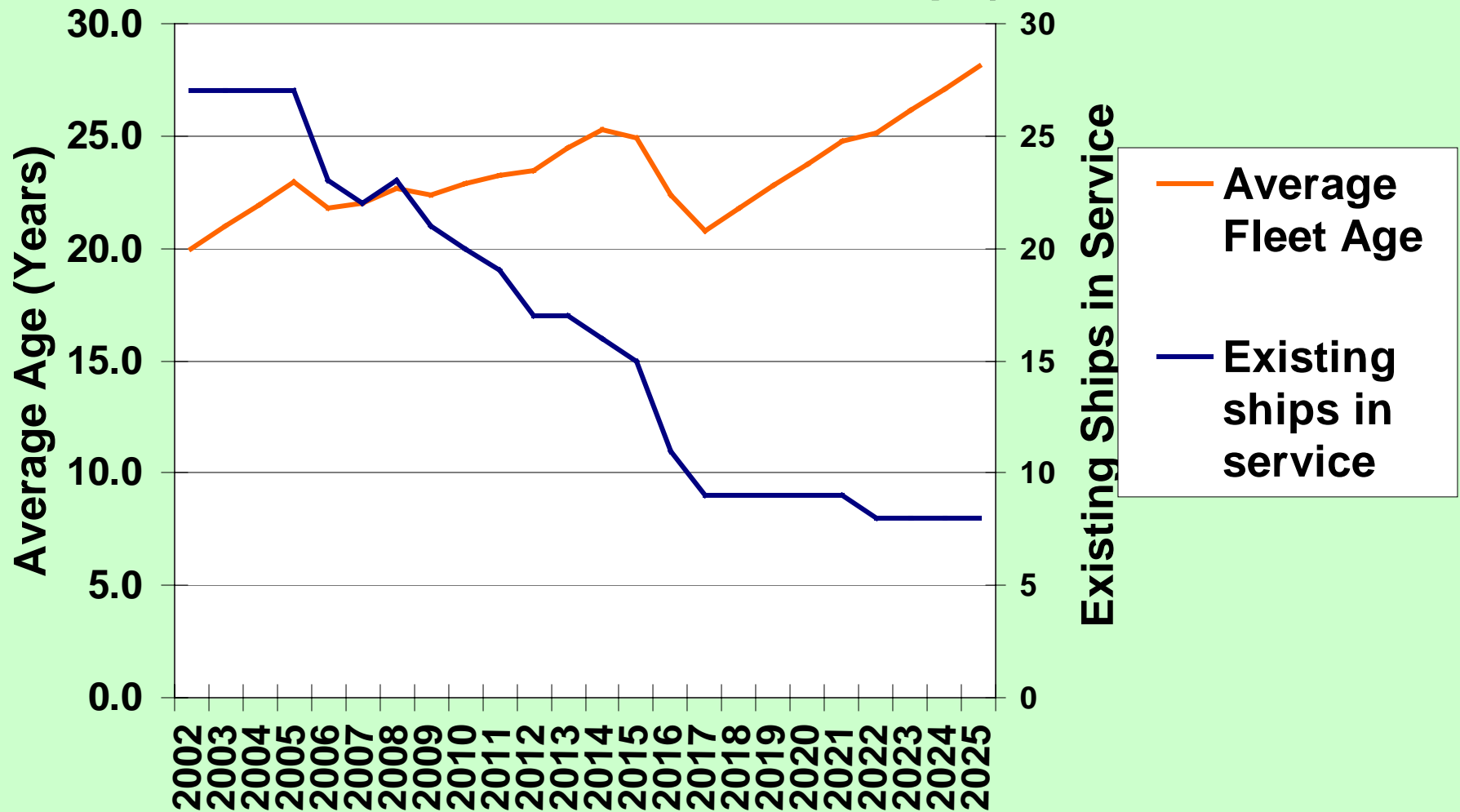
## Ship Days Funded and Ship Days Available



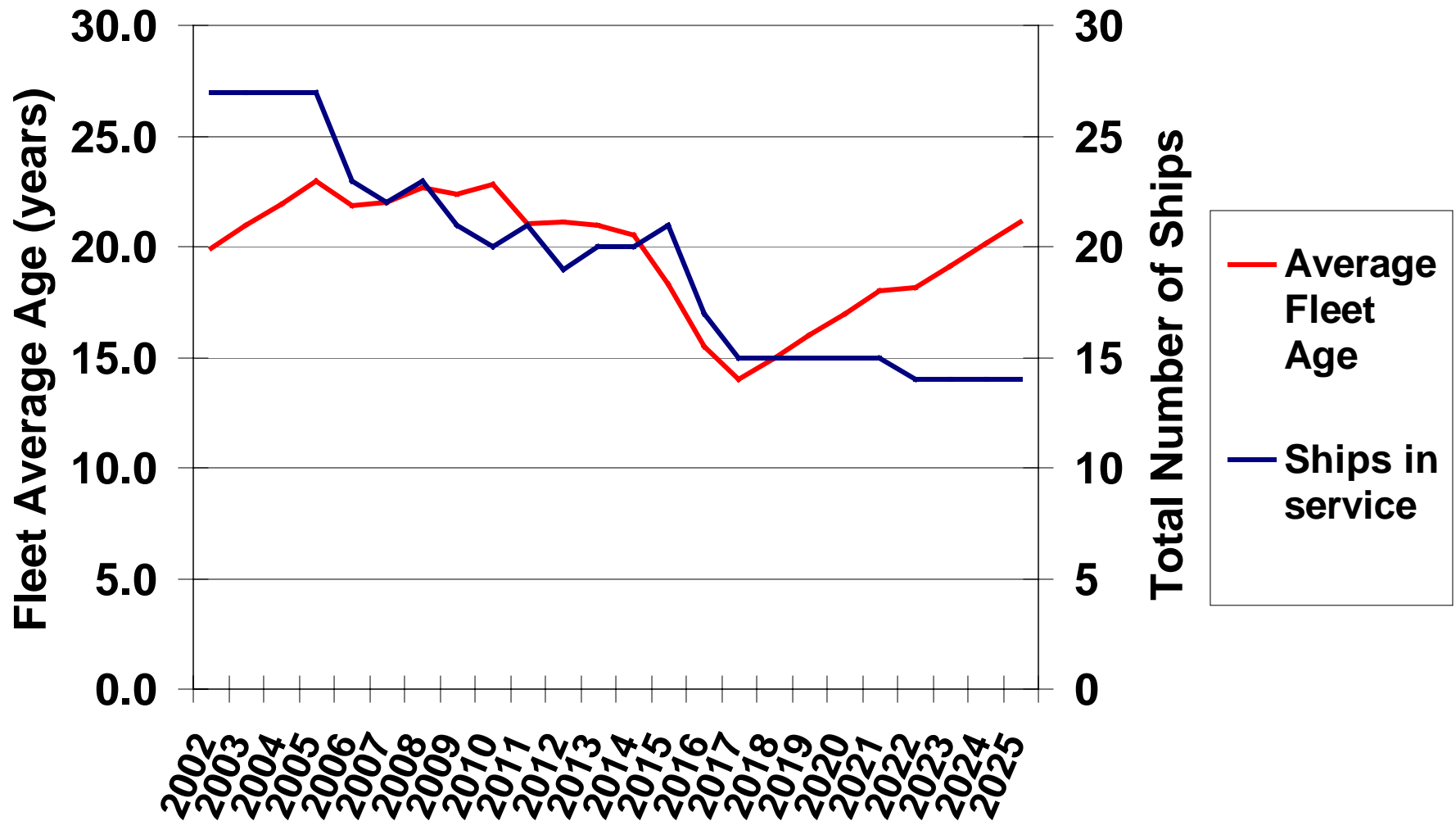
Ships days available is based on all planned ships being built:  
ARRV, 3 Regional, ARRV, 2 Ocean, and all current Locals are



## Average UNOLS Fleet Age (no new Regional or Ocean Class Ships)



## UNOLS Fleet Age including all Fleet Renewal Ships



## IV.D. Alternate and Emerging Technologies

- Toby has drafted: “Emerging and alternate technologies that may influence future ship usage include:”
  - AUV/gliders
  - Lagrangian floats and drifters
  - Aircraft (manned and unmanned)
  - Ship launched unmanned aircraft (Predator type uav)
  - Stable deep ocean platforms (e.g. FLIP)
  - Ocean observatories
  - Deployable drills
  - Satellites
  - Shore based instrumentation

# *Proteus*



- Displacement – 12 tons full load
- Beam = 50', Draft = 8" forward, 16' aft at half load
- Inflatable hulls – can be beached.
- Crew size = 2, berthing for 4
- Payload = 4,000 lbs.
- Titanium, aluminum, and reinforced fabrics.

## IV.E. Facilities Required to Meet Future Science Needs – 2025 Fleet Composition (Fig 17 Update)

1. Fleet Required to Maintain Current Capability
  2. Fleet Required to Meet Ocean Observatory Needs
  3. Construction and Operation Costs
  4. Consequences of Not Carrying Out UNOLS Fleet Renewal
- Challenges: Escalating Operating costs, budget constraints, NSF \$6.9/per ship, etc
  - SLEPs

# Revised: Section IV: Future Fleet Utilization Projections and Future Requirements

## A. Current Fleet Renewal Plans

- a. Definition and Composition
- b. Construction Timeline and Costs
- c. Projected Fleet capacity

## B. Constraints and Challenges

1. Federal Budgets
2. Escalating Operating Costs

## C. Comparison of the Current UNOLS Fleet with the IWG-F Fleet of 2025

## D. Alternate and Emerging Technologies

- And impact on ship use

# Revised: Section IV: Future Fleet Utilization Projections and Future Requirements

## D. Future Science Facility Needs (and timeline)

1. Science requests have continued to increase (the way ships are used will change)
2. Ocean Observatory Facility Needs - Installation, Operation, and Maintenance

## E. Facilities Required to Meet Future Science Needs

1. With current renewal plans - What science would be left on shore?
2. What is the estimated operating cost for a fully utilized 2025 Fleet?
3. Given budget constraints – what portion to the future fleet could be funded?
4. What future fleet composition is required to meeting future science facility needs (if budgets increase)?
5. Will the future fleet be able to meet the Ocean Research Priorities facility needs?

## F. Other (non-UNOLS Ship) Facility Projections???