University-National Oceanographic Laboratory System

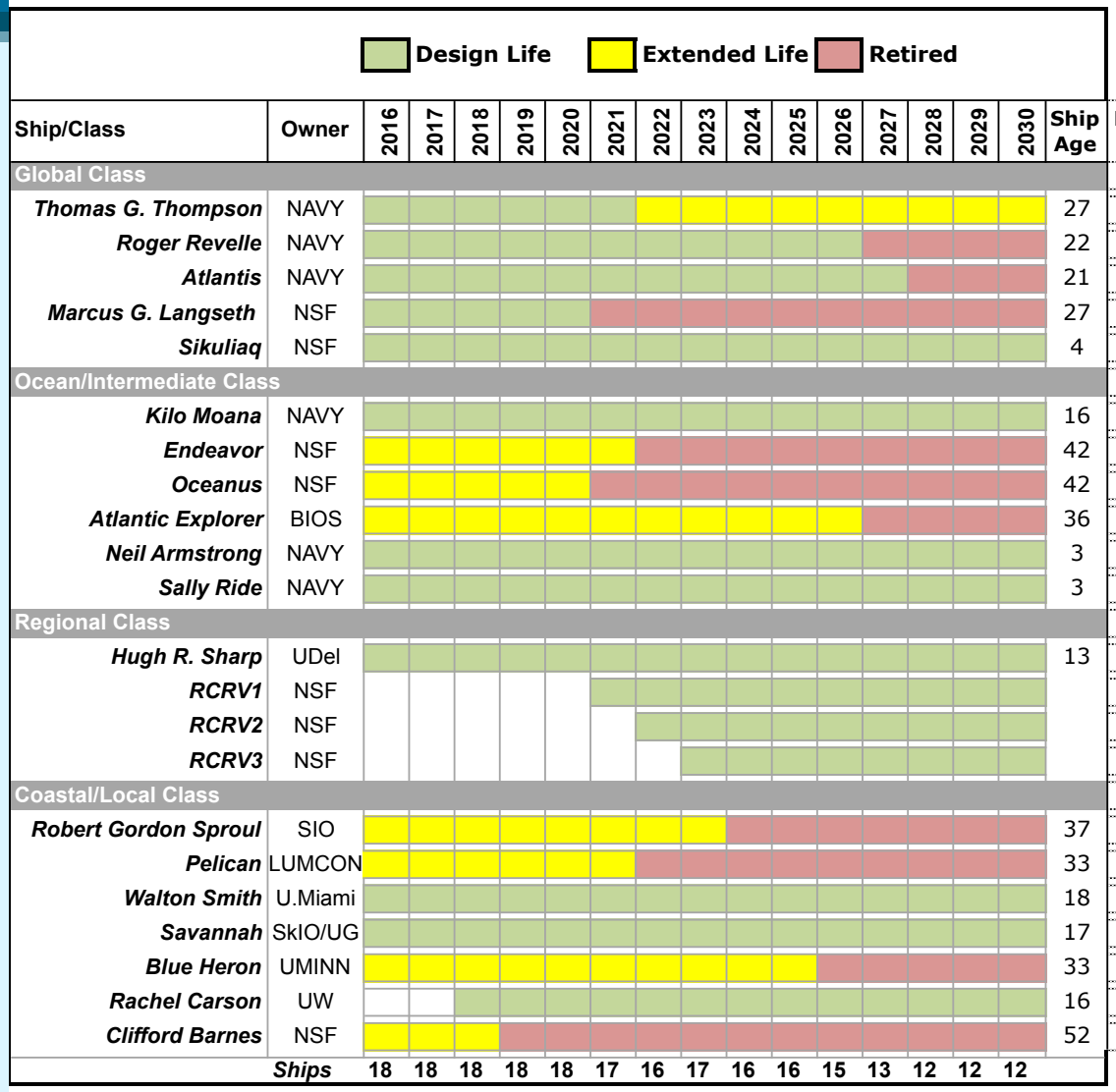
~UNOLS ~

UNOLS Fleet Improvement Committee Meeting

Alexandria, VA

December 18, 2018

FY2016 - FY2030 Projected UNOLS Fleet Capacity (updated: 10/18/2018)

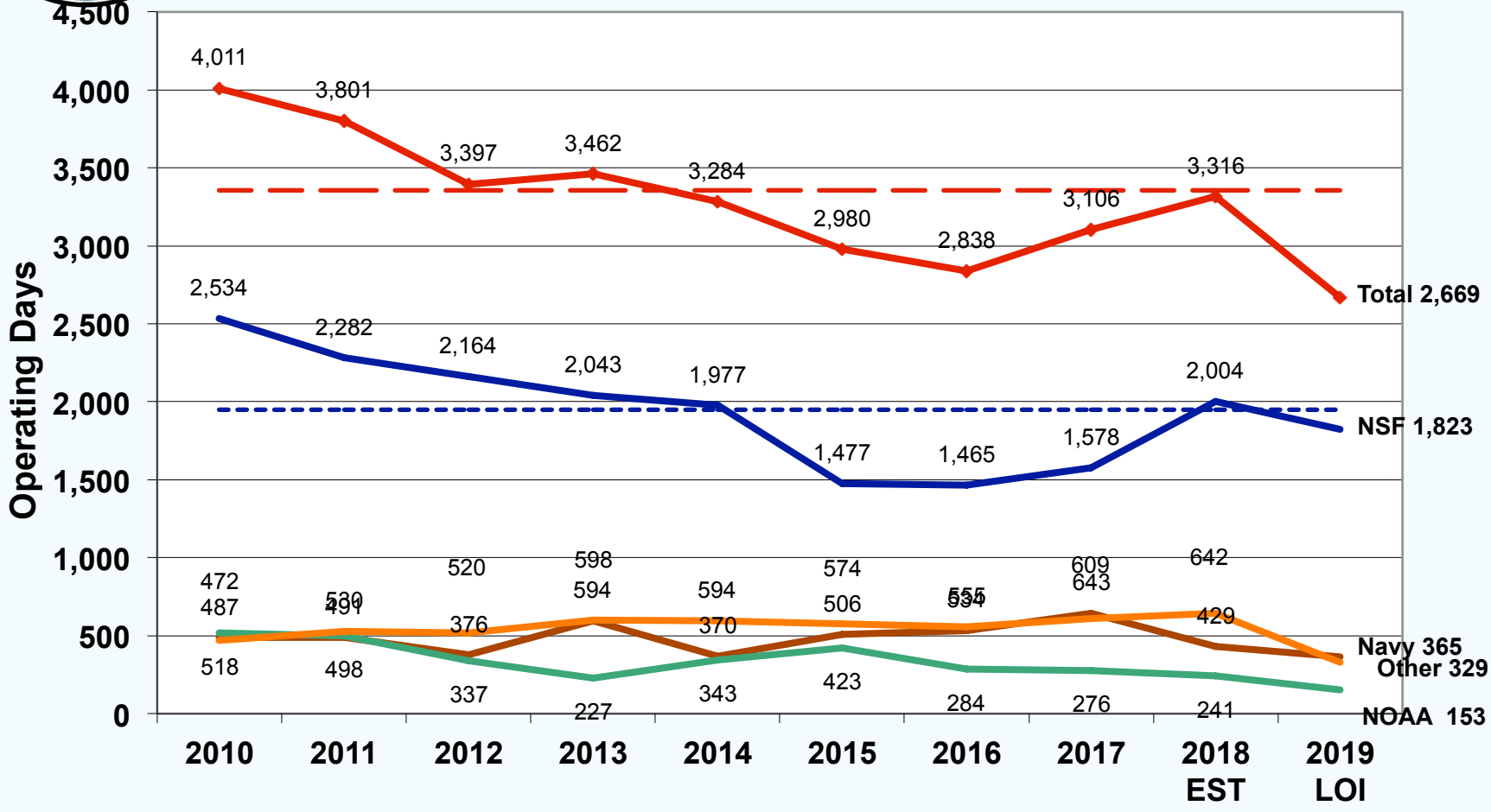


Ship/Class	Owner	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Ship Age	Retire Year	Year Built	LOA m (ft)	Sci. Berths
Global Class																					
Thomas G. Thompson	NAVY																27	2030	1991	84 (274)	36
Roger Revelle	NAVY																22	2026	1996	84 (274)	37
Atlantis	NAVY																21	2027	1997	84 (274)	37
Marcus G. Langseth	NSF																27	2020	1991	71 (235)	35
Sikuliaq	NSF																4	2045	2014	80 (261)	26
Ocean/Intermediate Class																					
Kilo Moana	NAVY																16	2032	2002	57 (186)	29
Endeavor	NSF																42	2021	1976	56 (185)	18
Oceanus	NSF																42	2020	1976	56 (184)	19
Atlantic Explorer	BIOS																36	2026	1982	51 (168)	20
Neil Armstrong	NAVY																3	2045	2015	73 (238)	24
Sally Ride	NAVY																3	2046	2015	73 (238)	24
Regional Class																					
Hugh R. Sharp	UDel																13	2035	2005	44 (146)	14
RCRV1	NSF																	2051	2021	58 (191)	18
RCRV2	NSF																	2052	2022	58 (191)	18
RCRV3	NSF																	2053	2023	58 (191)	18
Coastal/Local Class																					
Robert Gordon Sproul	SIO																37	2023	1981	38 (125)	12
Pelican	LUMCON																33	2020	1985	36 (116)	14
Walton Smith	U.Miami																18	2030	2000	30 (96)	16
Savannah	SkIO/UG																17	2031	2001	28 (92)	19
Blue Heron	UMINN																33	2025	1985	26 (86)	6
Rachel Carson	UW																16	2033	2003	22 (72)	9
Clifford Barnes	NSF																52	2018	1966	20 (66)	6
	Ships	18	18	18	18	18	17	16	17	16	16	15	13	12	12	12					

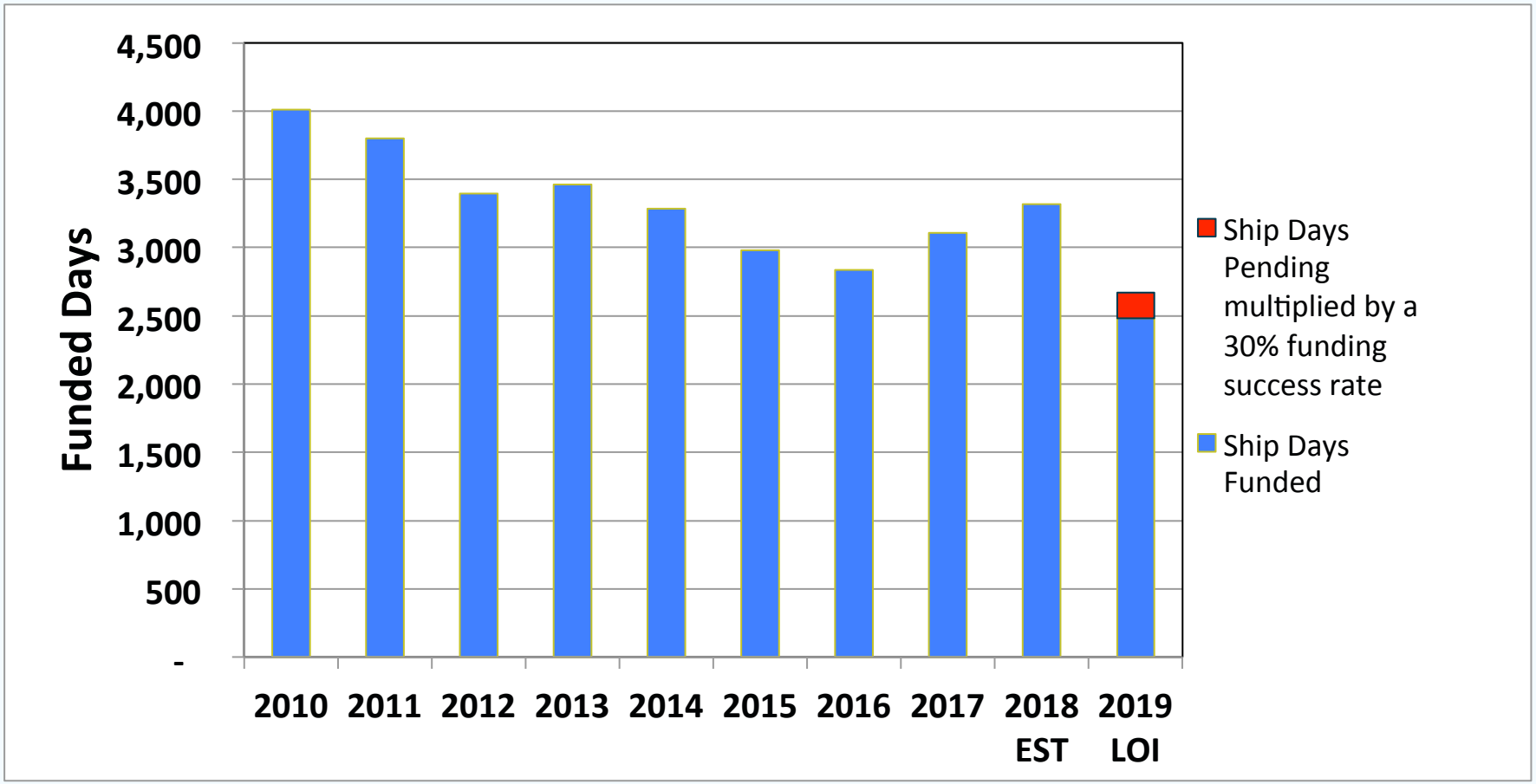
Notes/Revisions:

Revision (5/20/16) Service Life Extensions for Global AGORs contingent on successful completion of mid-life refits.
Revision (5/24/17) RCRV3 added to chart.
Revision (11/15/17) Service Life Extension to 2030 for Thompson on completion of mid-life refit.
Revision 4/26/18) Barnes retired Feb 1, 2018.
Revision (5/7/18) Langseth retires in 2020. Extended Endeavor and Oceanus by 1 year.
Revision (5/9/18) Sproul will continue to operate through 2023.
Revision (10/8/19) Sharp, W.Smith, and Savannah - No known plans for a mid-life; service life is 30 years.
Revision (10/18/19) Rachel Carson enters service in Spring 2018

UNOLS Fleet Utilization (2010 - 2019)

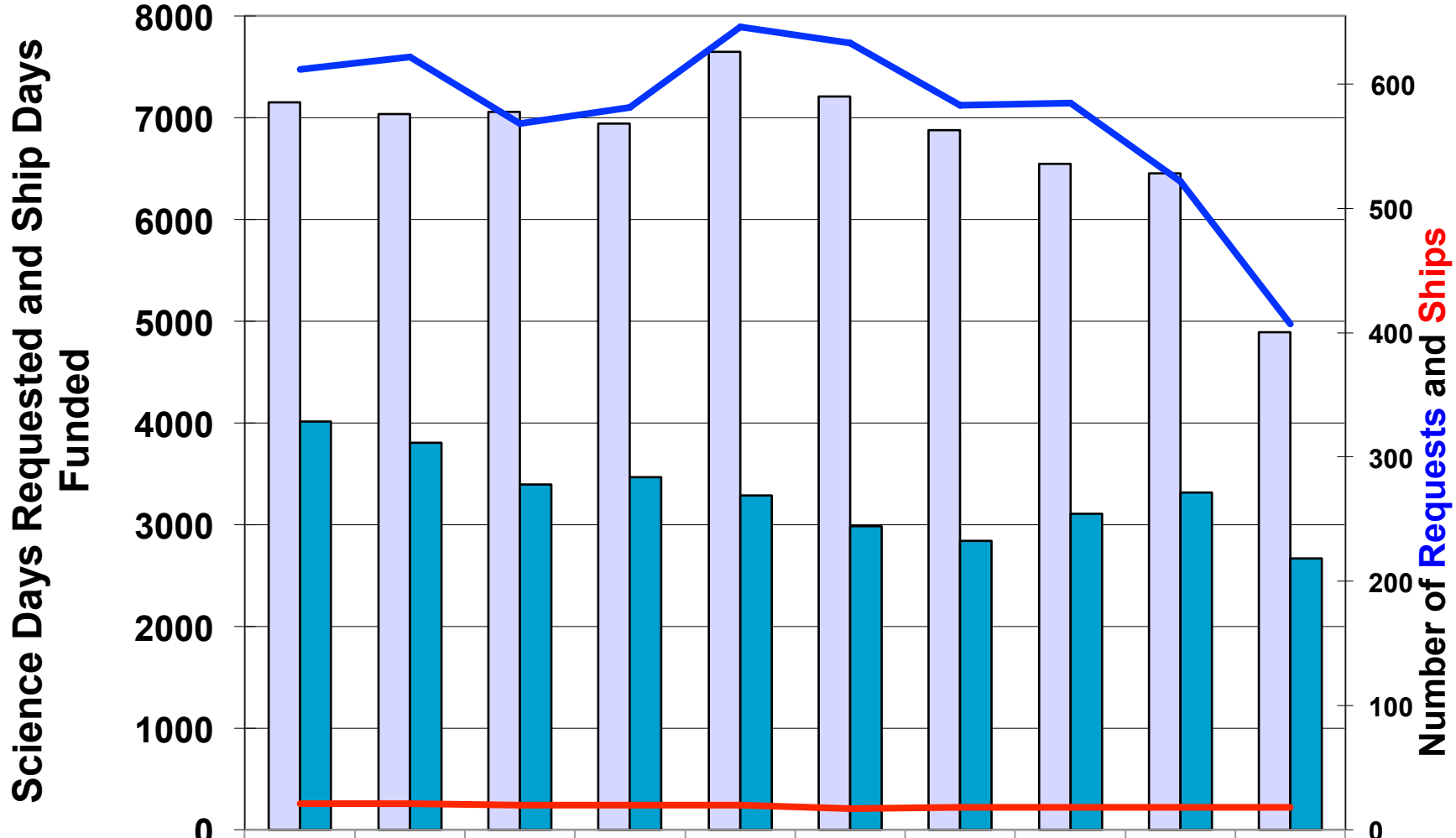


Fleet Operating Days: 2010 - 2019

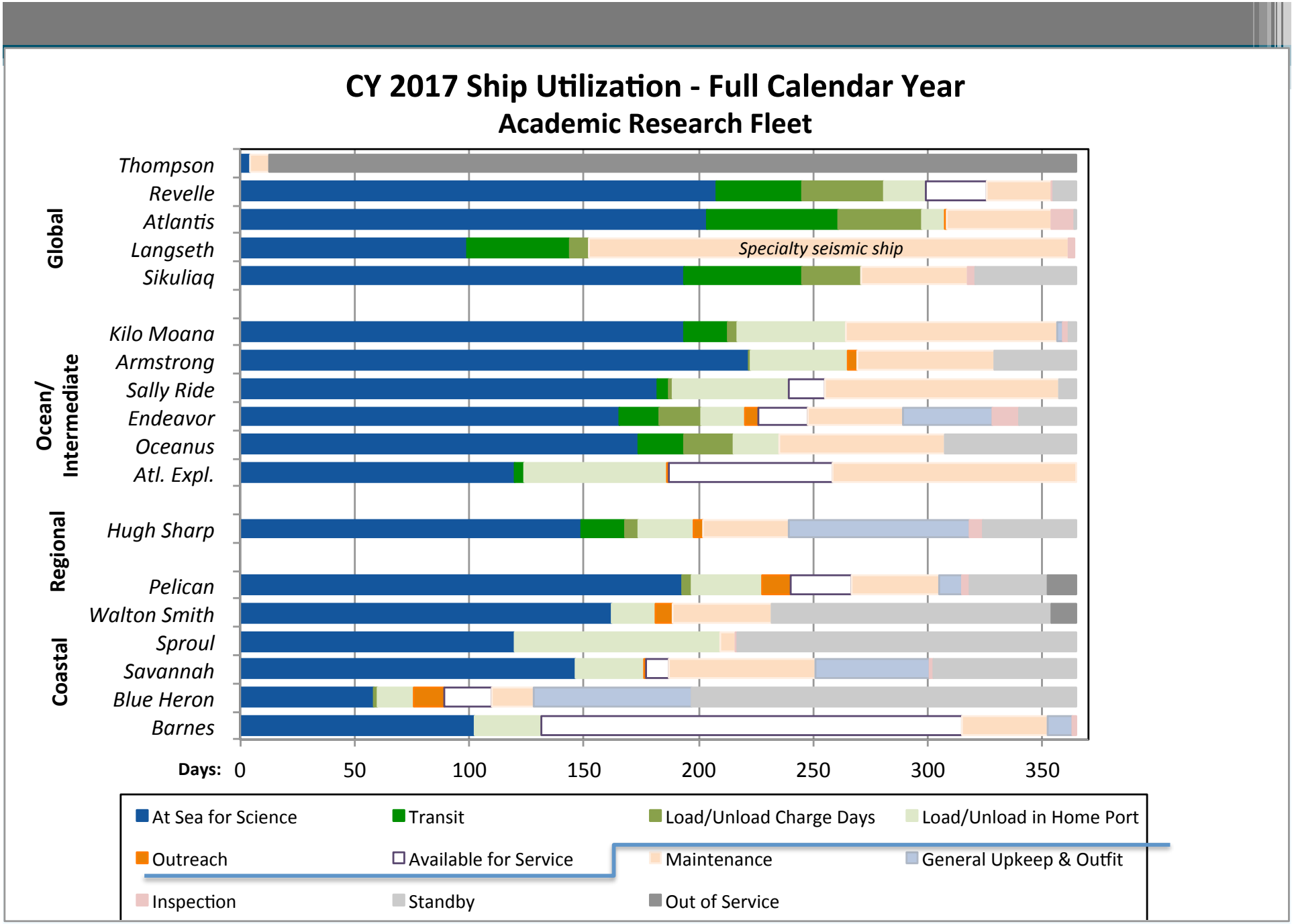


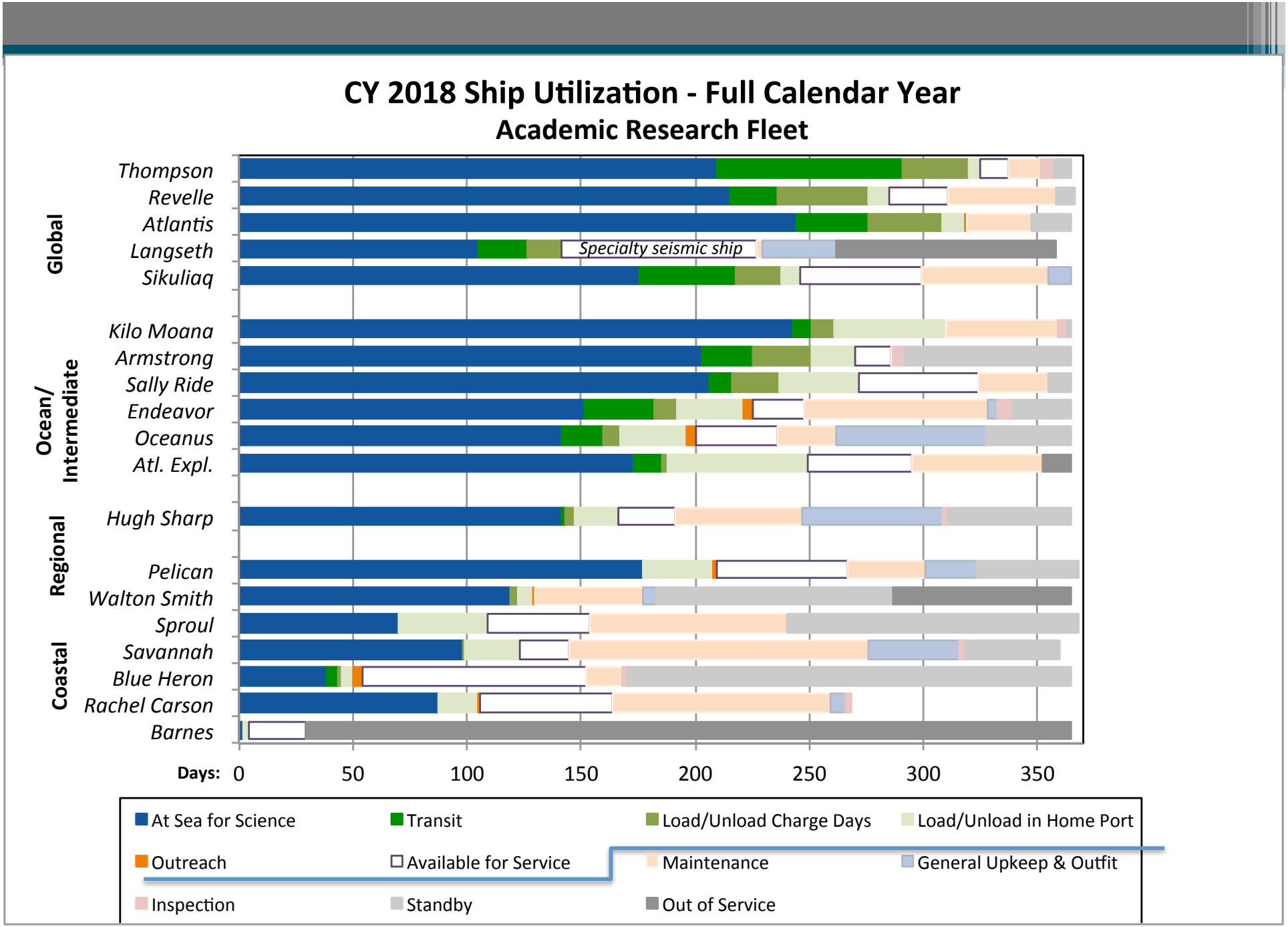
Note: 2019 Operating Days = funded days plus 30% of pending days

Ship Time Demand and Ship Days Funded



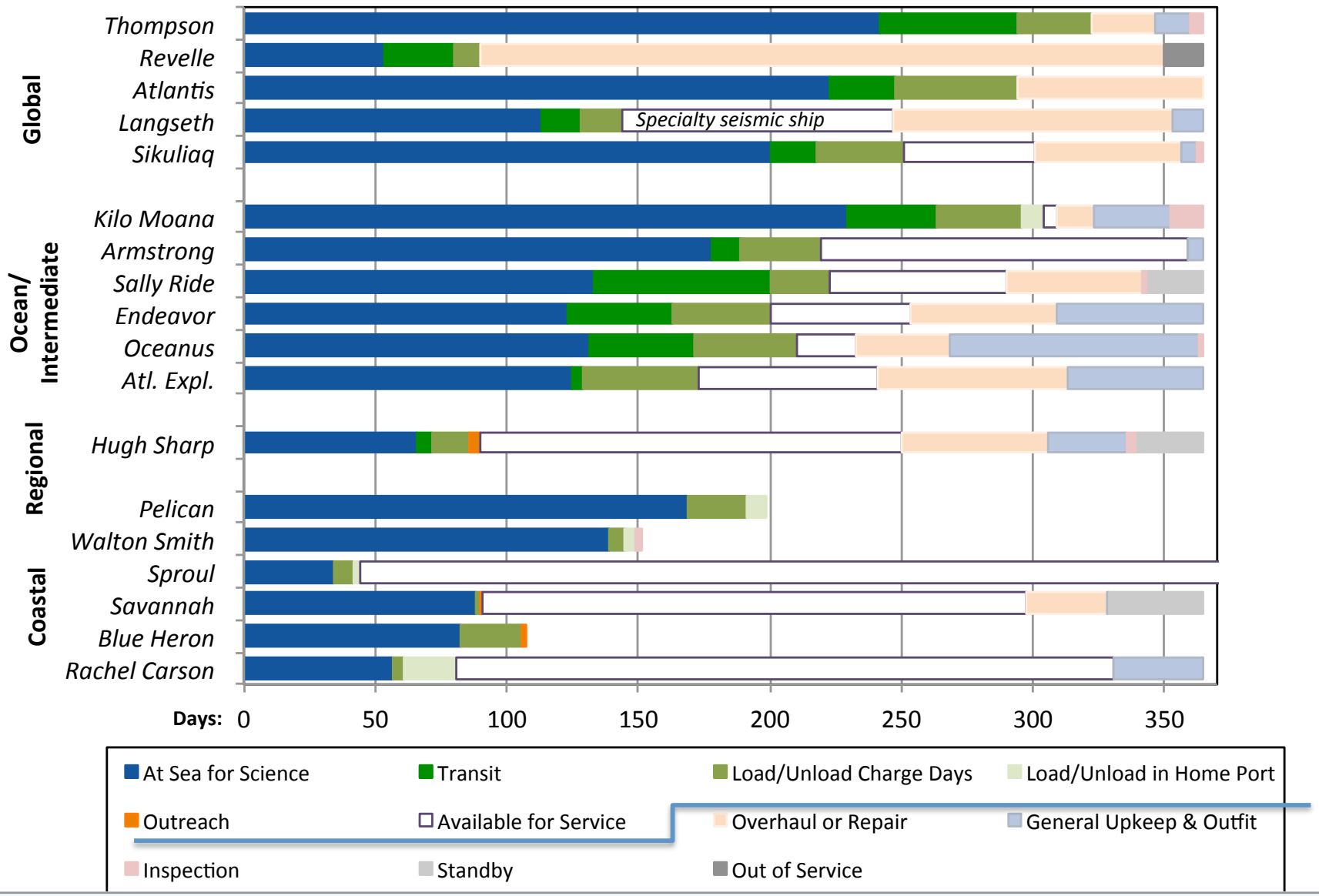
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Days Requested	7147	7031	7056	6942	7648	7210	6877	6543	6451	4889
Ship Days Funded	4,011	3,801	3,397	3,462	3,284	2,980	2,838	3,106	3,316	2,669
# of Requests	612	622	568	581	646	633	583	585	522	407
# of Ships in Service	21	21	20	20	20	17	18	18	18	18


CY 2017 Ship Utilization - Full Calendar Year
Academic Research Fleet
Global
Ocean/ Intermediate
Regional
Coastal
Thompson
Revelle
Atlantis
Langseth
Sikuliaq
Kilo Moana
Armstrong
Sally Ride
Endeavor
Oceanus
Atl. Expl.
Hugh Sharp
Pelican
Walton Smith
Sproul
Savannah
Blue Heron
Barnes
Specialty seismic ship
Days: 0 50 100 150 200 250 300 350
At Sea for Science
Transit
Load/Unload Charge Days
Load/Unload in Home Port
Outreach
Available for Service
Maintenance
General Upkeep & Outfit
Inspection
Standby
Out of Service


CY 2018 Ship Utilization - Full Calendar Year
Academic Research Fleet
Global
Ocean/ Intermediate
Regional
Coastal
Thompson
Revelle
Atlantis
Langseth
Sikuliaq
Kilo Moana
Armstrong
Sally Ride
Endeavor
Oceanus
Atl. Expl.
Hugh Sharp
Pelican
Walton Smith
Sproul
Savannah
Blue Heron
Rachel Carson
Barnes
Specialty seismic ship
Days: 0 50 100 150 200 250 300 350
At Sea for Science
Transit
Load/Unload Charge Days
Load/Unload in Home Port
Outreach
Available for Service
Maintenance
General Upkeep & Outfit
Inspection
Standby
Out of Service

CY 2019 Ship Utilization - Full Calendar Year

Academic Research Fleet




UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM
UNOLS

Full Optimal Year Range Definitions

	A	B	C	D	E	F	G	H	I	J
1	Updated: 11/20/2017									
2										
3		Standard Definition		2016 Adjusted FOY		2017 Adjusted FOY		2018 Adjusted FOY		
4		Minimum FOY	Maximum FOY	Minimum FOY	Maximum FOY	Minimum FOY	Maximum FOY	Minimum FOY	Maximum FOY	Notes
5	ATLANTIS	270	300	270	300	270	300	270	300	
6	R. REVELLE	270	300	270	300	270	300	270	300	
7	LANGSETH	270	300	180	210	240	270	270	300	2016 & 2017 - adjusted (shipyard & maintenance).
8	T.G. THOMPSON	270	300	108	120	10	10	270	300	2016 & 2017 adjusted by D. Russell (mid-life)
9	SIKULIAQ	270	300	270	300	270	300	270	300	
10										
11	ARMSTRONG	250	280	166	186	250	280	250	280	2016 adjusted based on Service start date
12	SALLY RIDE	250	280	42	47	250	280	250	280	2016 adjusted based on Service start date
13	KILO MOANA	250	280	170	200	250	280	250	280	2016 adjusted - A. Hilton 6/22/16
14	ENDEAVOR	200	230	200	230	200	230	200	230	
15	OCEANUS	180	210	180	210	180	210	180	210	
16	ATLANTIC EXPLORER	170	200	150	180	150	180	180	210	Standard and 2018 adjusted - Q. Lewis 11/14/17
17										
18	HUGH R. SHARP	165	195	165	195	165	195	165	195	Standard and all years adjusted - J.Swallow 11/15/17
19										
20	PELICAN	180	210	180	210	180	210	180	210	
21	WALTON SMITH	150	180	150	180	150	180	150	180	
22	R. SPROUL -	90	120	90	120	90	120	90	120	
23	SAVANNAH	90	120	90	120	165	195	140	170	2017 adjusted - J. Bichy 6/22/16, 2018 adjusted - Jbichy 11/14/
24	BARNES	90	120	90	120	90	120	90	120	Barnes will transition to R/V Carson in 2018

Full Optimal Year (FOY) Definition

- Excerpt from the 2015 Fleet Improvement Plan:

  "In 2014 the UNOLS FIC worked with vessel operators to revise the target number of days per year of vessel operations that are considered optimal for retaining crew, maintaining vessel equipment and mobilizing for diverse science missions during peak periods of science demand. It was recognized that these Full Optimal Year (FOY) targets should be ranges that reflect not just vessel class, but also vessel age, homeport, and differences in at-sea utilization caused by regional weather constraints."

Full Optimal Year Range

- The range of the FOY typically equals 30 days.
- FOY calculation:

  At Sea for Science Days
  + Transit
  + Load/Unload Days
  + Outreach
  + Available for Service
  = Maximum value of FOY range

Note:

- In the chart legend box, the day-types above the blue line should equal the maximum FOY value