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The Federal Fleet of Oceanographic Research Vessels: Issues for Congress

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The Federal Fleet of Oceanographic Research Vessels: Issues for Congress

The federal fleet of oceanographic research vessels serves as a primary tool for advancing knowledge of the ocean system. The federal oceanographic fleet is primarily composed of oceanographic research vessels that are owned and operated or leased by federal departments and agencies. Federally funded projects have included the mapping of the seafloor, which aids in the delineation of the outer limits of U.S. maritime boundaries; the identification and study of marine resources for protection, management, or exploitation; ocean exploration; U.S. Arctic and Antarctic research; and U.S. ocean-based research broadly, including the installation, removal, and maintenance of U.S. ocean observation networks. Some of these activities also contribute to various national security objectives. At issue for Congress is understanding the current capacity of the federal oceanographic fleet and its future capability to support ocean research and related national security priorities in a timely and cost-effective manner.

In March 2016, the Interagency Working Group on Facilities and Infrastructure (IWG-FI) published a federal oceanographic research vessel status report entitled *Federal Fleet Status Report: Current Capacity and Near-Term Priorities*. In this report, the IWG-FI inventoried the oceanographic research vessels that composed the federal fleet at the end of FY2015. The 2016 federal fleet status report also provided an outlook of the fleet's capacity through FY2030 and discussed the potential impacts associated with changes to capacity. The IWG-FI, a non-congressionally mandated working group that is cochaired by the National Oceanic and Atmospheric Administration (NOAA) and the Department of Navy, has not published a federal fleet status report since 2016.

The 2016 federal fleet status report included vessels owned and operated or leased by NOAA, the Department of the Navy, the National Science Foundation, and the U.S. Coast Guard. Since the publication of the 2016 fleet status report, several oceanographic research vessels have retired from the fleet, entered into the fleet, or required maintenance to extend their service lives. The IWG-FI began preparing a new updated federal fleet status report in 2023. In 2024, NOAA acknowledged that an update to the 2016 federal fleet status report was being prepared, but the agency provided no timeline for its publication. To date, the 2016 report remains the most comprehensive publicly available assessment of the federal oceanographic fleet.

Congressional decisionmaking on the federal oceanographic fleet can substantially affect federal agencies' abilities to fulfill their missions (e.g., science and research, education, and navigation safety) and the fleet's ability to address certain national security concerns. Recurring status reports about the federal oceanographic fleet could inform congressional deliberation over and decisions related to the fleet. Congress could pursue several options for mandating reporting on the federal fleet status; in doing so, it could specify the report's contents. For example, Congress could direct the report to inventory the fleet at the time of publication; provide additional details about agencies' future plans, including funding needs to maintain, expand, or reduce the fleet's size to meet evolving congressional priorities; or both. Alternatively, Congress could choose to maintain the status quo and defer to the executive branch on whether, and if so when and how, to update the federal fleet status report.

Given that oceanographic research vessels are a shared federal asset, improved collaboration among federal agencies might allow the government to reduce the number of vessels in the fleet and thus reduce operational costs. Congress has directed federal agencies to increase their use of uncrewed marine systems (UMSs) as a cost-cutting measure. While deploying a UMS may cost less than deploying an oceanographic research vessel, some UMSs would need to be deployed from a vessel.

Congress also may be interested in understanding how the size, capabilities, and utilization of the U.S. oceanographic research fleet compare to the fleets of foreign governments (e.g., the People's Republic of China [PRC] and/or Russia). Some Members of Congress are concerned about the PRC's expanding global deployment of its state-owned fleet of oceanographic research vessels. Several stakeholders have expressed concerns about how data collected by PRC oceanographic research vessels may present national security concerns, as these data have numerous applications, including for military use. Congress could examine whether the current U.S. oceanographic research fleet is capable of collecting these types of data and whether the United States should consider oceanographic research vessels for national security objectives, in addition to research activities. Such an examination may elucidate congressional priorities for the renewal of the federal oceanographic research fleet.

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Introduction

The federal fleet of oceanographic research vessels (hereinafter *federal oceanographic fleet*) serves as a primary tool for advancing knowledge of the global ocean system and the Great Lakes.¹ Some federal departments and agencies have referred to the federal oceanographic fleet as “critical national infrastructure,” as it supports federal research and operational marine missions (see the text box below).² For example, data collected by the fleet help address evolving national ocean policy priorities, such as mapping the seabed and identifying marine resources for protection, management, or exploitation.³ In general, the fleet supports federal agency operations, surveys, and research in U.S. ocean waters, the Great Lakes, and the *high seas* (i.e., international waters).

Congress has defined an *oceanographic research vessel* in statute as

a vessel that the Secretary [of the department in which the Coast Guard is operating] finds is being employed only in instruction in oceanography or limnology, or both, or only in oceanographic or limnological research, including studies about the sea such as seismic, gravity meter, and magnetic exploration and other marine geophysical or geological surveys, atmospheric research, and biological research.⁴

Furthermore, Congress determined that oceanographic research vessels are not to be considered passenger vessels, meaning that they carry scientists, not passengers, and are not to be associated with trade or commerce.⁵ For example, oceanographic research vessels carry science equipment, not cargo, and fishing activities on board are for research purposes, not for commercial sale.

The Interagency Working Group on Facilities and Infrastructure (IWG-FI) has advised the National Science and Technology Council’s Subcommittee on Ocean Science and Technology on policies, procedures, and plans relating to oceanographic facility use, upgrades, and investments.⁶ IWG-FI is cochaired by representatives from the National Oceanic and Atmospheric Administration (NOAA) and the Department of the Navy. The IWG-FI has published inventories of the federal oceanographic fleet and provided information regarding the fleet’s aging dynamics.

¹ Interagency Working Group on Facilities and Infrastructure (IWG-FI), *Federal Oceanographic Fleet Status Report*, 2013, pp. 1, 5; and IWG-FI, *Federal Fleet Status Report: Current Capacity and Near-Term Priorities*, 2016, pp. 2–4 (hereinafter IWG-FI, *Federal Fleet Status Report*, 2016). Congress has considered the Great Lakes to be part of federal ocean research initiatives, including U.S. coastal and ocean mapping (33 U.S.C. §3501(a)) and the U.S. Integrated Ocean Observing System (33 U.S.C. §3601).

² IWG-FI, *Federal Fleet Status Report*, 2016, p. 4; and IWG-FI, *Federal Oceanographic Fleet Status Report*, 2013, p. 1.

³ For information about U.S. efforts to map national waters, see CRS Report R47623, *Frequently Asked Questions: Mapping of U.S. Ocean and Coastal Waters*, coordinated by Caitlin Keating-Bitonti.

⁴ 46 U.S.C. §2101(26). IWG-FI, *Federal Oceanographic Fleet Status Report*, 2013, p. 5; and IWG-FI, *Federal Fleet Status Report*, 2016, p. 6. *Limnology* is the study of inland waters, including lakes, reservoirs, rivers, streams, wetlands, and groundwater. See Association for the Sciences of Limnology and Oceanography, “What is Limnology?,” <https://www.aslo.org/what-is-aquatic-science/what-is-limnology>.

⁵ P.L. 89-99; 46 U.S.C. §50503.

⁶ National Oceanographic Partnership Program (NOPP), “Interagency Working Group on Facilities and Infrastructure (IWG-FI),” <https://nopp.org/about-nopp/committees/iwg-fi> (hereinafter NOPP, “Interagency Working Group on Facilities and Infrastructure (IWG-FI)”); and National Oceanic and Atmospheric Administration (NOAA), “Ocean Science and Technology Subcommittee (OST),” <https://www.noaa.gov/ocean-science-and-technology-subcommittee>. For more information about the organization of the National Science and Technology Council, see CRS Report R47410, *The Office of Science and Technology Policy (OSTP): Overview and Issues for Congress*, by Emily G. Blevins.

In 2016, the IWG-FI published its most recent federal fleet status report, *Federal Fleet Status Report: Current Capacity and Near-Term Priorities* (hereinafter the 2016 federal fleet status report). The report projected a decline in the number of vessels in the federal oceanographic fleet. In the decade since its publication, several oceanographic research vessels have retired from the fleet, entered into the fleet, or required maintenance to extend their service lives (i.e., service-life extensions).⁷ According to the National Oceanographic Partnership Program, the IWG-FI began preparing a new, updated federal fleet status report in 2023.⁸ In October 2024, NOAA confirmed that work on an update to the 2016 federal fleet status report was ongoing but provided no timeline for its expected publication.⁹ As of the date of this CRS report, an updated federal fleet status report has not been published and the 2016 report remains the most comprehensive publicly available assessment of the federal oceanographic fleet.

This CRS report summarizes the 2016 federal fleet status report and discusses the potential value of a recurring report. For example, recurring status reports about the federal oceanographic fleet could serve as a standardized source of information for congressional decisionmaking, including helping policymakers match at-sea capabilities with agency mission requirements, decide whether to maintain or replace current capabilities, and manage the fleet’s operational and maintenance costs. The **Appendix** includes a list of frequently used abbreviations.

Contributions of Oceanographic Research Vessels

The Interagency Working Group on Facilities and Infrastructure, formerly the Interagency Working Group on Facilities, identified several ways in which the federal fleet of oceanographic research vessels has contributed to U.S. ocean policy priorities.

- Conduct basic research on the ocean, including its physical, chemical, geological, and biological characteristics, processes, and interactions.
- Support tsunami research and deployment of sensors for disaster warnings.
- Support biomedical research in the marine realm for new pharmaceuticals and therapies.
- Provide oceanographic information in support of national defense and homeland security.
- Assess the status of living marine resources for resource and conservation managers and policymakers.
- Map, sample, and monitor ocean conditions and features that influence weather and climate.
- Map, sample, and monitor the ocean floor in geologically active areas to better understand mineral deposition, life in extreme habitats, natural hazards, and plate tectonics.
- Provide navigational information for the safe and effective movement of commerce and transportation within and between U.S. ports.
- Study Earth’s geologic and climatic history as recorded in corals, ocean floor sediments, and polar ice.
- Discover and protect archeological resources.
- Assess nonliving marine resources and renewable energy for management and development.
- Enhance ocean-focused educational programs and inspire teachers as well as the public.
- Deploy new instruments and technology for ocean observations, such as remotely operated vehicles, autonomous underwater vehicles, drifters, buoys, and profiling floats.

Sources: Interagency Working Group on Facilities and Infrastructure, *Federal Oceanographic Fleet Status Report*, 2013, p. 5; and Interagency Working Group on Facilities, *Federal Oceanographic Fleet Status Report*, July 2007, p. 5.

⁷ Oceangoing vessels are designed for 30-year service lives, but many routinely operate beyond their designed service lives. IWG-FI, *Federal Fleet Status Report*, 2016, pp. 7-8.

⁸ NOPP, “Interagency Working Group on Facilities and Infrastructure (IWG-FI).”

⁹ Email correspondence between CRS and NOAA, October 8, 2024.

Background on Federal Fleet of Oceanographic Research Vessels

The federal oceanographic fleet is composed of vessels that are owned and operated or leased by federal departments and agencies. The fleet is primarily composed of oceanographic research vessels. Other types of vessels that are included in the fleet, such as U.S. Coast Guard (USCG) polar icebreakers, support oceanographic research objectives. Some agency-owned vessels in the federal oceanographic fleet are operated by U.S. universities and laboratories under the University-National Oceanographic Laboratory System (UNOLS); this subset of vessels is collectively known as the U.S. Academic Research Fleet (ARF).¹⁰ The ARF also includes vessels owned and operated by U.S. universities and laboratories.¹¹ The ARF is a federal asset of “community-accessible” vessels made available for qualified private investigators and all government agencies that need to conduct oceanographic research to support their missions.¹²

Vessels in the federal oceanographic fleet are typically greater than 130 feet in length and span three classes of ships.

1. *Global Class* ships are the largest and most capable ships in the federal oceanographic fleet, as they can work worldwide with large scientific parties and have the longest endurance (i.e., amount of time a vessel can operate at sea).
2. *Ocean (Intermediate) Class* ships, slightly smaller than Global Class ships, typically work within an ocean basin and have slightly shorter endurance compared with Global Class ships.
3. *Regional Class* ships, smaller than Ocean Class ships, are optimized for operation in coastal waters, bays, and estuaries.¹³

Other federal agencies classify their vessels in different ways. For example, NOAA uses NOAA Vessel (N/V) Class A through N/V Class D to classify its fleet based on the vessels’ primary missions.¹⁴ The Navy classifies its oceanographic research vessels as Auxiliary General Oceanographic Research (AGOR) ships. N/V Class A ships and AGOR ships are equivalent to Global Class ships, as they are capable of oceanographic science and data collection in coastal and deep ocean areas.¹⁵

In addition to these classes, oceanographic research vessels can be divided into *research vessels* and *survey vessels*. In general, research vessels carry a broad array of scientific instrumentation and have laboratories equipped with analytical equipment and computers that allow for preliminary data analysis and sample storage. Survey vessels generally acquire a wide range of data (including oceanographic, hydrographic, fisheries-stock assessment, and ecosystem data) in direct support of resource management and monitoring programs. Most survey ships are designed

¹⁰ University-National Oceanographic Laboratory System (UNOLS), “The U.S. Academic Research Fleet,” <https://www.unols.org/us-academic-research-fleet-0> (hereinafter UNOLS, “The U.S. Academic Research Fleet”).

¹¹ See UNOLS, “UNOLS Designated Vessels,” <https://www.unols.org/ships-facilities/unols-vessels/unols-designated-vessels/unols-designated-vessels/unols-designated> (hereinafter UNOLS, “UNOLS Designated Vessels”).

¹² UNOLS, “Why the ARF Is Important,” <https://www.unols.org/why-arf-important> (hereinafter UNOLS, “Why the ARF Is Important”).

¹³ IWG-FI, *Federal Fleet Status Report*, 2016, p. 6.

¹⁴ For example, see NOAA, *The NOAA Fleet Plan: Building NOAA’s 21st Century Fleet*, October 31, 2016, p. 8.

¹⁵ NOAA’s Class A ships (*Ronald H. Brown*) and the Navy’s Auxiliary General Purpose Oceanographic Research (AGOR) ships are the same 240-foot ship design. NOAA, *The NOAA Fleet Plan: Building NOAA’s 21st Century Fleet*, October 31, 2016, p. 9.

to meet specific mission requirements, such as NOAA's Fisheries Survey Vessels. Vessels in the federal oceanographic fleet are generally capable of providing at-sea experiences for students, teachers, and the public.¹⁶

Overview of the 2016 Federal Fleet Status Report

The 2016 federal fleet status report provided an update to the 2013 federal fleet status report.¹⁷ To date, the 2016 report provides the most recent comprehensive public assessment of the federal oceanographic fleet.

The IWG-FI provided an inventory of the oceanographic research vessels in the federal fleet at the end of FY2015 in the 2016 federal fleet status report. The IWG-FI included the NOAA research and survey fleet, some USCG polar icebreakers, vessels leased by the National Science Foundation (NSF), and the ARF—which includes vessels owned by NSF and the Department of the Navy's Office of Naval Research (ONR).¹⁸ UNOLS provides a forum for the research and education community and the federal government to work cooperatively on oceanographic research, and schedules the research projects to take place on most NSF ships and some Navy, NOAA, and USCG ships in the federal oceanographic fleet.¹⁹ While the 2013 federal fleet status report included military Auxiliary General Surveying (AGS) ships as well as vessels owned and operated by the Environmental Protection Agency, the 2016 report excluded them.²⁰

The 2016 federal fleet status report inventoried the capacity of the federal oceanographic fleet at the close of FY2015 and provided information about capacity gaps.²¹ According to the IWG-FI, *capacity* refers to the fleet's ability to support federally funded projects in a “timely and cost-effective manner.”²² The IWG-FI determines capacity by considering the following aspects of the fleet:

- total operating budget;
- total number of ships (or number of ships in a particular class of ships);
- each ship's design, size, range, and endurance;
- total number of available science berths;
- ships' mission configurations; and
- the federal oceanographic fleet's geographic distribution.

The 2016 federal fleet status report also projected the fleet's future capacity outlook. Specifically, the report identified that at the end of FY2015 the fleet had 35 ships and projected that with congressional appropriations the fleet size would be “22 ships by FY 2030 compared to 18 ships

¹⁶ Interagency Working Group on Facilities (IWG-F), *Federal Oceanographic Fleet Status Report*, 2007, p. 9.

¹⁷ IWG-FI, *Federal Oceanographic Fleet Status Report*, 2013.

¹⁸ IWG-FI, *Federal Fleet Status Report*, 2016, p. 4.

¹⁹ UNOLS, “UNOLS Charter,” https://www.unols.org/sites/default/files/UNOLS_Charter_2019.pdf; and IWG-FI, *Federal Oceanographic Fleet Status Report*, 2013, p. 7.

²⁰ At the time of the 2013 federal fleet status report's publication, the Environmental Protection Agency (EPA) owned and operated two research vessels. As of the date of this publication, EPA has one research vessel—*Lake Guardian*, which operates on the Great Lakes (EPA, “The Lake Guardian,” updated December 18, 2025, <https://www.epa.gov/great-lakes-monitoring/lake-guardian>). According to the IWG-FI in its 2016 report, T-AGS ships were excluded due to restrictions on data sharing (IWG-FI, *Federal Fleet Status Report*, 2016, p. 4).

²¹ IWG-FI, *Federal Fleet Status Report*, 2016, p. 6.

²² IWG-FI, *Federal Fleet Status Report*, 2016, p. 6; IWG-FI, *Federal Oceanographic Fleet Status Report*, 2013, p. 17; IWG-F, *Federal Oceanographic Fleet Status Report*, 2007, p. 15.

without investment.”²³ The IWG-FI also analyzed how capacity gaps could impact specific U.S. ocean regions and activities (e.g., research, agency mission support, and education).

The 2016 federal fleet status report presented information about the fleet’s oceanographic research and survey activities.²⁴ Between FY2010 and FY2014, NOAA, NSF, ONR, and USCG vessels within the federal oceanographic fleet dedicated more than 80% of their days at sea (or operational days) to resource management and scientific research.²⁵ The remainder of the days at sea contributed to activities related to mission support, such as Antarctic station support (for NSF), ship maintenance (for all four agencies), and education and outreach (for NSF).

Federal Departments and Agencies with Oceanographic Research Vessels

According to the 2016 federal fleet status report, the federal oceanographic fleet is composed of vessels owned and operated or leased by NOAA, NSF, the Department of the Navy, and USCG. Of the 35 vessels listed in the report, 16 were owned by NOAA, 6 were owned by ONR, 5 were owned by NSF, 2 were owned by USCG, and the 6 remaining were owned by nonfederal entities (as part of the ARF or leased by NSF).²⁶

Ships operated by federal departments and agencies are designed to meet specific statutory requirements.²⁷ Some federal departments and agencies may use oceanographic research vessels owned by other federal agencies to fulfill aspects of their missions. For example, the National Aeronautics and Space Administration (NASA) has used federal oceanographic fleet ship time to support the calibration of space-based sensors and the validation of space-based data products. Between 2003 and 2013, NASA used approximately six months of ship time per year for its ocean research activities.²⁸

The sections below discuss the four federal agencies that own and operate or lease ships, as identified in the 2016 federal fleet status report, and any changes to the fleet since the end of FY2015. Changes to the federal oceanographic fleet are discussed in the context of agency missions, proposed changes to agency-specific fleets, and selected congressional actions that might impact the current fleet.

²³ IWG-FI, *Federal Fleet Status Report*, 2016, p. 3.

²⁴ IWG-FI, *Federal Fleet Status Report*, 2016, p. 6.

²⁵ IWG-FI, *Federal Fleet Status Report*, 2016, p. 5. The IWG-FI determined the primary areas based on days at sea (for NOAA and USCG) and operational days (for NSF and ONR).

²⁶ The UNOLS-affiliated universities that owned oceanographic research vessels listed in the 2016 federal fleet status report were the Bermuda Institute of Ocean Sciences (*Atlantic Explorer*), Scripps Institution of Oceanography (*New Horizon*), and the University of Delaware (*Hugh R. Sharp*). The 2016 federal fleet status report listed NSF as having leased vessels from Overseas Drilling Limited (*Joides Resolution*) and Edison Chouest Offshore (*Laurence M. Gould* and *Nathaniel B. Palmer*). IWG-FI, *Federal Fleet Status Report*, 2016, p. 7. For a current list of ARF vessels, see UNOLS, “UNOLS Designated Vessels.”

²⁷ NOAA, *The NOAA Fleet Plan: Building NOAA’s 21st Century Fleet*, October 31, 2016, p. 20.

²⁸ IWG-FI, *Federal Oceanographic Fleet Status Report*, 2013, pp. 13 and 15. Other departments and agencies who also use federal oceanographic fleet ship time include the Bureau of Ocean Energy Management, Defense Advanced Research Projects Agency, Department of Energy, Department of State, U.S. Army Corps of Engineers, and U.S. Geological Survey. IWG-FI, *Federal Oceanographic Fleet Status Report*, 2013.

National Oceanic and Atmospheric Administration

Congress has directed the Secretary of Commerce, acting through the Assistant Administrator of NOAA for Marine and Aviation Operations, to operate and maintain a fleet of vessels that would meet the mission and functions of NOAA, and authorized appropriations for such purposes.²⁹ In this context, NOAA's mission includes safe navigation, weather and climate services, hazard detection and warning, and ocean exploration, as well as surveying living marine resources to inform their protection and management. NOAA owns a variety of vessel types, ranging from large oceanographic research vessels to smaller ships, to accomplish these activities.³⁰

As of FY2015, NOAA owned 16 research vessels. In 2019, NOAA decommissioned Research Vessel (R/V) *Hi'ialakai*, an Ocean Class ship, due to structural issues, including extensive corrosion, pipe failures, and propulsion problems.³¹ As of the date of this report, the agency states that it "operates a fleet of 15 research and survey vessels and is in the process of building more."³² The average age of these 15 vessels is older than 30 years. NOAA anticipates that six of the vessels will likely reach the end of their service lives by 2030.

NOAA periodically publishes its own fleet status report, most recently in 2016.³³ In 2025, Congress directed NOAA to develop and submit to certain congressional committees a "replacement and modernization plan for the NOAA fleet not later than 180 days after December 18, 2025, and every 2 years thereafter."³⁴ As of the date of this CRS report, congressional committees have not received NOAA's fleet replacement and modernization plan, which is to include

- (1) the number of vessels in operation in the NOAA fleet as of the date of submission of the Plan, a description of the status of those vessels, and a statement of the planned and anticipated service life of those vessels;
- (2) a plan with respect to operation, maintenance, and replacement of vessels described in paragraph (1), including the schedule for maintenance or replacement and anticipated funding requirements;
- (3) the number of vessels proposed to be constructed by NOAA;
- (4) the number of vessels proposed to be acquired, leased, or chartered by NOAA;
- (5) the number of vessels, or days at sea, that can be obtained by using the vessels of the UNOLS;
- (6) the number of vessels that will be made available to NOAA by the Secretary of the Navy, the Director of the National Science Foundation, or any other Federal official, and the terms and conditions for the availability of those vessels;
- (7) the proposed acquisition of modern scientific instrumentation for the NOAA fleet, including acoustic systems, data transmission positioning and communication systems,

²⁹ 33 U.S.C. §891a and 33 U.S.C. §883i.

³⁰ NOAA, *Budget Estimates: Fiscal Year 2027*, p. OMAO-4.

³¹ Joel Lau, "Loss of NOAA's Primary Honolulu Ship a Setback for Research," *Civil Beat*, June 17, 2019, <https://www.civilbeat.org/2019/06/loss-of-noaas-primary-honolulu-ship-a-setback-for-research>.

³² NOAA, "Ships of NOAA," accessed October 22, 2026, <https://www.oma.noaa.gov/marine-operations/ships-noaa>. A list of NOAA's ships can be viewed at <https://www.oma.noaa.gov/marine-operations/ship-finder>.

³³ NOAA, *The NOAA Fleet Plan: Building NOAA's 21st Century Fleet*, October 31, 2016.

³⁴ National Defense Authorization Act for Fiscal Year 2026 (NDAA for FY2026; Section 8402(a)(2), Title LXXXIV, Division H of P.L. 119-60); 33 U.S.C. §891b.

physical, chemical, and meteorological oceanographic systems, and data acquisition and processing systems;

(8) a plan for using small vessels, uncrewed systems, and partnerships to augment the requirements of NOAA for days at sea;

(9) the number of officers of the NOAA commissioned officer corps and professional wage mariners needed to operate and maintain the NOAA fleet, including the vessels identified under paragraph (3); and

(10) current and potential challenges with meeting the requirements under paragraph (9) and proposed solutions to those challenges.³⁵

NOAA provided some information about its current vessel recapitalization and construction plan in its FY2027 budget request. For example, in the request, NOAA stated that its Office of Marine and Aviation Operations is “working to implement” a recommendation made by the Office of Inspector General in 2021 to develop and regularly update a long-range vessel acquisition plan.³⁶ NOAA reported that its “ships are undergoing a generational overhaul, extending the life of existing vessels and infusing them with new technology. At the same time, investments in vessel recapitalization are delivering new ships designed to work in concert with uncrewed maritime systems.”³⁷ NOAA anticipates receiving two new charting and mapping vessels in 2027 and 2028.³⁸ NOAA’s budget request also stated that it “intends to reduce the number of ship classes in the future. Each class will meet a core mission requirement with secondary missions.”³⁹ The agency also plans to standardize core equipment across its fleet, which it stated “will allow NOAA to meet multiple missions and is critical for efficient maintenance, upgrades, and optimal crewing models and to reduce operation and maintenance costs.”⁴⁰

National Science Foundation

NSF provides support for oceanographic research, including through its support of UNOLS and the ARF.⁴¹ The federal oceanographic fleet, which includes the ARF, enables data collection and research by academia and the public, in addition to supporting federal research and operational marine missions. NSF owns R/V *Sikuliaq*, an ARF vessel that has been operated by the University of Alaska Fairbanks since it was built in 2014.⁴² As of January 2026, NSF owns “three new Regional Class Research Vessels”; the agency expects these vessels to begin operations

³⁵ 33 U.S.C. §891b(b).

³⁶ NOAA, *Budget Estimates: Fiscal Year 2027*, p. AM-60.

³⁷ NOAA, *Budget Estimates: Fiscal Year 2027*, p. OMAO-1. Also see NOAA, *Budget Estimates: Fiscal Year 2027*, pp. OMAO-6-OMAO-7.

³⁸ NOAA, “NOAA to Hold Keel-Laying Ceremony for 2nd New Charting and Mapping Vessel,” November 20, 2025, <https://www.noaa.gov/media-advisory/noaa-to-hold-keel-laying-ceremony-for-2nd-new-charting-and-mapping-vessel>; NOAA, “Contract for 2 NOAA Research Ships Awarded to Thoma-Sea Marine Constructors, LLC,” July 6, 2023, <https://www.noaa.gov/news-release/contract-for-2-noaa-research-ships-awarded-to-thoma-sea-marine-constructors-llc> (hereinafter NOAA, “Contract for 2 NOAA Research Ships”).

³⁹ NOAA, *Budget Estimates: Fiscal Year 2027*, p. OMAO-37.

⁴⁰ NOAA, *Budget Estimates: Fiscal Year 2027*, p. OMAO-38.

⁴¹ The NSF’s FY2027 budget request would “enable partial support of some ships in the ARF.” NSF, *FY 2027 Budget Request to Congress*, April 3, 2026, p. NSF-Wide Investments-58. Also see UNOLS, “The U.S. Academic Research Fleet.”

⁴² UNOLS, “UNOLS Designated Vessels,” <https://www.unols.org/ships-facilities/unols-vessels/unols-designated-vessels/unols-designated-vessels> (hereinafter UNOLS, “UNOLS Designated Vessels”); University of Alaska Fairbanks, “About R/V *Sikuliaq*,” <https://www.uaf.edu/cfos/sikuliaq/index.php> (hereinafter University of Alaska Fairbanks, “About R/V *Sikuliaq*”).

between 2027 and 2029.⁴³ These three new vessels are to become part of the ARF.⁴⁴ NSF's Ship Operations Program provides funding for the operation and maintenance of ARF vessels.⁴⁵

The 2016 federal fleet status report listed NSF as owning four additional oceanographic research vessels, but the agency has since retired these vessels or transferred their ownership to academic institutions.⁴⁶ According to NSF, budgetary constraints contributed to some transfer-of-ownership decisions. For example, a 2015 National Research Council report recommended that NSF trim its ocean infrastructure in favor of more research support.⁴⁷ In 2016 NSF stated in response that the operational model for R/V *Marcus G. Langseth* was "unsustainable"⁴⁸ and subsequently transferred the ship to Columbia University's Lamont-Doherty Earth Observatory.⁴⁹ R/V *Marcus G. Langseth* continues to operate in the ARF.⁵⁰

NSF has also leased vessels. For example, the 2016 federal fleet status report included two research vessels then leased by NSF—Antarctic Research and Support Vessel *Laurence M. Gould* and Research Vessel Icebreaker *Nathaniel B. Palmer*—to support U.S. Antarctic research.⁵¹ Due to budgetary constraints, NSF terminated the leases of these two vessels in 2024 and 2025.⁵² For FY2027, NSF has requested \$900 million as new mandatory spending to be used for the construction of an Antarctic icebreaking research vessel.⁵³ To support research vessel operations

⁴³ NSF, *FY 2023 Budget Request to Congress*, March 28, 2022, p. Research Infrastructure-31. A 2026 U.S. Government Accountability Office (GAO) report found that construction of the three Regional Class Research Vessels (RCRVs) "has progressed behind schedule, and NSF anticipates delays to continue as the project navigates several ongoing challenges," such as labor shortages and limited shipyard space. The GAO report expects construction for the three RCRVs to be completed in April 2029. GAO, *National Science Foundation: Schedule Delays Continue for Some Major and Midscale Research Infrastructure Projects*, GAO-26-107842, February 2026, pp. 15-16.

⁴⁴ NSF, *FY 2027 Budget Request to Congress*, April 3, 2026, p. NSF-Wide Investments-44. According to NSF, the "first RCRV, research vessel [R/V] *Taani*, will be operated on the West Coast by Oregon State University (OSU). The second RCRV, R/V *Narragansett Dawn*, will be operated on the East Coast by the East Coast Oceanographic Consortium led by the University of Rhode Island. The third RCRV, R/V *Gilbert R. Mason*, will be operated in the Gulf of Mexico and nearby waters by the Gulf-Caribbean Oceanographic Consortium."

⁴⁵ NSF, "Ship Operations of the U.S. Academic Research Fleet Vessels," <https://www.nsf.gov/funding/opportunities/ship-operations-us-academic-research-fleet-vessels/506112/nsf23-599>.

⁴⁶ NSF transferred ownership of *Point Sur* to the University of Southern Mississippi in 2016 (<https://www.usm.edu/vessels/rv-point-sur.php>); retired *Oceanus* in 2021 (<https://ceos.oregonstate.edu/rv-oceanus>); transferred ownership of *Marcus G. Langseth* to Columbia University's Lamont-Doherty Earth Observatory in 2020 (<https://www.unols.org/news/msroc-updates/nsf-releases-regional-plan-rv-langseth>); and retired R/V *Endeavor* in 2026 (<https://web.uri.edu/gso/research/endeavor/>).

⁴⁷ NSF promotes the progress of science by funding extramural research, largely through grants awarded in support of academic research. National Research Council, *Sea of Change: 2015-2025 Decadal Survey of Ocean Sciences* (The National Academies Press, 2015).

⁴⁸ NSF, "Dear Colleague Letter: Provision of Marine Seismic Capabilities to the U.S. Research Community," August 9, 2016, <https://www.nsf.gov/funding/opportunities/dcl-provision-marine-seismic-capabilities-us-research-community/nsf16-120>.

⁴⁹ UNOLS, "NSF Releases Regional Plan for R/V Langseth," January 15, 2021, <https://www.unols.org/news/msroc-updates/nsf-releases-regional-plan-rv-langseth>.

⁵⁰ UNOLS, "UNOLS Designated Vessels."

⁵¹ For more information, see CRS Report R49033, *U.S. Research Vessels and Scientific Leadership in Antarctica*, by Caitlin Keating-Bitonti and Laurie Harris.

⁵² In November 2025, NSF ended its lease for the Research Vessel Icebreaker *Nathaniel B. Palmer* (NSF, "Update on Nathaniel B. Palmer," September 10, 2025, <https://www.nsf.gov/geo/opp/updates/update-nathaniel-b-palmer>). In June 2024, NSF ended its lease for the Antarctic Research and Support Vessel *Laurence M. Gould* (NSF, "Non-Renewal of ARSV Laurence M. Gould Charter: Transition Plans for Antarctic Research Support," April 29, 2024, <https://www.nsf.gov/geo/opp/updates/non-renewal-arsv-laurence-m-gould-charter-transition-plans>).

⁵³ NSF, *FY 2027 Budget Request to Congress*, April 3, 2026, pp. Overview-1 and NSF-Wide Investments-41.

around the polar regions, among other purposes, some Senators in the 119th Congress introduced legislation that would authorize the NSF's Office of Polar Programs (S. 5165).

U.S. Coast Guard

Among its seven primary duties, Congress has directed the USCG to “engage in oceanographic research of the high seas and in waters subject to the jurisdiction of the United States.”⁵⁴ Congress has further instructed the USCG to “conduct such oceanographic research, use such equipment or instruments, and collect and analyze such oceanographic data, in cooperation with other agencies of the Government, or not, as may be in the national interest.”⁵⁵ USCG polar icebreaker operations fulfill this mandate by supporting NSF research activities in both polar regions.⁵⁶ For example, the 2016 federal fleet report included both the Coast Guard Cutter (CGC) *Polar Star*, a heavy polar icebreaker, and CGC *Healy*, a medium polar icebreaker.⁵⁷ The *Polar Star* supports U.S. Antarctic research through *Operation Deep Freeze*—an annual mission to resupply NSF McMurdo Station, the largest year-round station on Antarctica and the logistical hub for the U.S. Antarctic Program.⁵⁸ In this context, the *Polar Star* is not dedicated to scientific research but rather supports Antarctic research vessels by opening paths for them through ice to NSF McMurdo Station. As another example, the *Healy* spends most of its time in the Arctic supporting NSF research activities and performing other operations.⁵⁹ The USCG does not consider the *Polar Star* or the *Healy* to be oceanographic research vessels, as, under statute, an oceanographic research vessel is to be employed *only* for oceanographic or limnological research or instructional purposes.⁶⁰

The future outlook for both *Polar Star* and *Healy* remains unclear. The *Polar Star* is more than 50 years old.⁶¹ The *Healy* suffered a “significant engineering casualty” in July 2026,⁶² and was reportedly unable to complete its planned 2026 high-latitude summer mission.⁶³

The USCG operates one additional medium polar icebreaker, CGC *Storis*, which entered into USCG service in 2025.⁶⁴ The *Storis* primarily operates in the Arctic, and scientific research is not

⁵⁴ 14 U.S.C. §102(b)(6).

⁵⁵ 14 U.S.C. §715.

⁵⁶ National Research Council, *Polar Icebreaker Roles and U.S. Future Needs: A Preliminary Assessment* (National Academies Press, 2005), p. 5.

⁵⁷ IWG-FI, *Federal Fleet Status Report*, 2016, p. 6.

⁵⁸ U.S. Antarctic Program, “USAP at Sea,” <https://www.nsf.gov/geo/opp/ail/usap-ships-boats>; USCG, “USCGC Polar Star (WAGB 10),” <https://www.pacificarea.uscg.mil/Our-Organization/Cutters/cgcPolarStar>.

⁵⁹ USCG, “USCGC Polar Star (WAGB 10).” Also see USCG, “U.S. Coast Guard Cutter Healy Arrives in Seattle Following Scientific Research, Onboard Fire,” press release, August 16, 2024, <https://www.news.uscg.mil/Press-Releases/Article/3876986/us-coast-guard-cutter-healy-arrives-in-seattle-following-scientific-research-on/>.

⁶⁰ 46 U.S.C. §2101(26).

⁶¹ U.S. Navy, “U.S. Coast Guard Cutter Polar Star Completes Operation Deep Freeze 2026 Mission, Departs Antarctica,” March 17, 2026, <https://www.navy.mil/Press-Office/News-Stories/display-news/Article/4436140/us-coast-guard-cutter-polar-star-completes-operation-deep-freeze-2026-mission-d>.

⁶² USCG, “Coast Guard Cutter Healy Experiences Engineering Casualty,” press release, July 24, 2026, <https://www.news.uscg.mil/Press-Releases/Article/4554931/coast-guard-cutter-healy-experiences-engineering-casualty>.

⁶³ Malte Humpert, “USCG Icebreaker ‘Healy’ Will Not Complete Summer Arctic Mission, Coast Guard Says,” *gCaptain Daily*, September 16, 2026, <https://gcaptain.com/uscg-icebreaker-healy-will-not-complete-summer-arctic-mission-coast-guard-says>.

⁶⁴ USCG, “USCGC Storis Departs on Maiden Voyage,” press release, June 4, 2025, <https://www.news.uscg.mil/Press-Releases/article/4205955/uscg-storis-departs-on-maiden-voyage>.

listed among its multiple missions.⁶⁵ A House-passed version of a Coast Guard Reauthorization Act of 2025 (H.R. 4275) would require the Commandant of the Coast Guard to enter into a memorandum of agreement with the Under Secretary of Commerce for Oceans and Atmosphere to govern and use the *Storis* for oceanographic research purposes. It would further direct that the Commandant may enter into agreements with federal, state, and local entities; institutions of higher education; or research institutes to use the *Storis* for research activities.⁶⁶ It remains unclear whether *Storis* would be considered part of the federal oceanographic fleet with or without the enactment of H.R. 4275 or similar legislation.

Congress has provided funding to the USCG for the construction and procurement of new heavy and medium icebreakers, called *Polar Security Cutters* and *Arctic Security Cutters* (ASCs), respectively.⁶⁷ Congress specified that at least one ASC have “scientific research capacity comparable to [CGC] *Healy* ... for the purposes of hydrographic, bathymetric, oceanographic, weather, atmospheric, climate, fisheries, marine mammals, genetic and other data related to the Arctic, and other research as the Under Secretary [of Commerce for Oceans and Atmosphere] determines appropriate.”⁶⁸ USCG has not indicated whether or how the new vessels may contribute to or support oceanographic research and be considered part of the federal oceanographic fleet.

U.S. Department of the Navy

The Department of the Navy, and its various commands and offices, produces meteorological and oceanographic knowledge to advance the U.S. military mission and provide secondary benefits to the United States. The Navy classifies its *auxiliary ships* (i.e., naval ships designed to operate in the open ocean in a variety of sea states to provide indirect support to combatant forces or services to shore-based establishments and infrastructure) that are specific to oceanographic surveys or research in the following ways:

- *AGOR*, an Auxiliary General Oceanographic Research ship operated by a non-Navy entity,
- *T-AGOR*, an Auxiliary General Oceanographic Research ship operated by Navy Military Sealift Command (MSC), and
- *T-AGS*, an Auxiliary General Surveying ship operated by MSC.⁶⁹

⁶⁵ USCG, “USCGC *Storis* (WAGB 21),” <https://www.pacificarea.uscg.mil/Our-Organization/Area-Cutters/CGC-STORIS/>.

⁶⁶ The bill would prohibit the USCG from charging a use fee for the *Storis*.

⁶⁷ For information about congressional interest and funding for future USCG icebreakers, see CRS Report RL34391, *Coast Guard Polar Security Cutter (PSC) and Arctic Security Cutter (ASC) Icebreaker Programs: Background and Issues for Congress*. Congress provided \$167.2 million through Section 11104 of the Don Young Coast Guard Authorization Act of 2022 (Division K of the James M. Inhofe National Defense Authorization Act for Fiscal Year 2023; P.L. 117-263) and \$4.3 billion through Section 40001 of the FY2025 budget reconciliation law (Title IV of P.L. 119-21) to the USCG for the procurement of PSCs. Congress provided \$150 million through Section 11104 of the Don Young Coast Guard Authorization Act of 2022 for the acquisition or procurement of one U.S.-built ASC and \$3.5 billion through the FY2025 budget reconciliation law for the procurement of additional ASCs.

⁶⁸ Section 11223 of the Don Young Coast Guard Authorization Act of 2022 (Division K of the James M. Inhofe National Defense Authorization Act for Fiscal Year 2023; P.L. 117-263). The Under Secretary of Commerce for Oceans and Atmosphere is also known as the NOAA Administrator.

⁶⁹ Department of the Navy, *General Guidance for the Classification of Naval Vessels and Battle Force Ship Counting Procedures*, SECNACINST 5030.8D, June 28, 2022.

As noted earlier, an oceanographic research vessel is defined in statute as *only* for oceanographic or limnological research or instructional purposes.⁷⁰ In general, an AGOR ship is an oceanographic research vessel. In contrast, T-AGOR ships do not exclusively engage in oceanographic research or instruction, nor do they possess a USCG oceanographic research vessel determination, as they are operated under Navy authority.

The Navy's Naval Oceanographic Office (NAVOCEANO) collects and analyzes oceanographic data to support national security.⁷¹ NAVOCEANO operates a fleet of T-AGS ships to support national security objectives and may operate its vessels in support of other federal agencies' survey missions.⁷² As previously discussed, while T-AGS ships were included in the 2013 federal fleet status report, they were excluded from the 2016 federal fleet status report. The Navy anticipates the delivery of a new T-AGS ship (T-AGS 67) in December 2026; it is unknown whether T-AGS ships will be included in future federal fleet status reports.⁷³

Within the Navy, ONR aims to provide science- and technology-based solutions for current and future naval challenges. ONR owns six ARF vessels and, together with the operating institutions under UNOLS, coordinates their research missions and ship schedules.⁷⁴ Because other entities operate these ONR-owned vessels, they are considered AGOR vessels. Six AGOR vessels were included in the 2016 federal fleet status report, three of which are Global Class ships that may need to be replaced in the coming years (*Atlantis*, *Roger Revelle*, and *Thomas G. Thompson*). The Navy's plans for replacing the three AGOR vessels remain unclear.

Under direction from Congress, the Secretary of the Navy submits an annual naval vessel construction plan for combatant and support vessels, as well as auxiliary vessels, that provides an outlook over the next 30 fiscal years (commonly referred to as the Navy 30-year shipbuilding plan).⁷⁵ This plan excludes AGOR ships.

In 2025, Congress instructed the Navy that none of the funds authorized to be appropriated by the FY2026 National Defense Authorization Act (NDAA) could be used "to retire or decommission, prepare to retire or decommission, or place in storage, any oceanographic research vessel of the Navy unless the Secretary of the Navy has identified and acquired a suitable replacement vessel for conducting the research."⁷⁶ The Senate-introduced version of an NDAA for FY2027 (S. 4784) would provide similar direction for funds authorized to be appropriated should the bill be enacted.⁷⁷ S. 4784 also would direct the Secretary of the Navy to submit to certain congressional committees a strategy and report specific to the design and construction of new AGOR ships.⁷⁸ The strategy is to detail "how the Department of the Navy will complete expedited design and construction of new Global-class auxiliary general oceanographic research (AGOR) ships ... after funding is provided for such new ships, including a cost estimate and an estimated delivery timeline." The report is to include information related to the replacement of certain AGOR ships,

⁷⁰ 46 U.S.C. §2101(26).

⁷¹ NOAA, *The NOAA Fleet Plan: Building NOAA's 21st Century Fleet*, October 31, 2016, p. 21.

⁷² IWG-FI, *Federal Oceanographic Fleet Status Report*, 2013, p. 13. The 2013 federal fleet status report identified seven survey vessels in the Naval Oceanographic Office's fleet.

⁷³ U.S. Navy, "Oceanographic Survey Ships – T-AGS," updated February 26, 2026, <https://www.navy.mil/Resources/Fact-Files/Display-FactFiles/Article/2222996/oceanographic-survey-ships-t-ags>.

⁷⁴ UNOLS, "UNOLS Designated Vessels."

⁷⁵ 10 U.S.C. §231(a) and 10 U.S.C. §231(b). For more information about the Navy 30-year shipbuilding plan, see CRS Report RL32665, *Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress*.

⁷⁶ Section 1018, Subtitle C, Title X of P.L. 119-60.

⁷⁷ Section 1017, Subtitle B, Title X of S. 4784 in the 119th Congress.

⁷⁸ Section 1011, Subtitle B, Title X of S. 4784 in the 119th Congress.

including limitations for operating in the Arctic, how the ships would improve the Navy's operation and warfighting capacity in the Arctic, the feasibility of converting current civilian or military operational ships into oceanographic research vessels, and identification of funding for the annual operation and recapitalization of the Navy's oceanographic research fleet.

Including AGOR ships and other Navy auxiliary ships in the annual Navy 30-year shipbuilding plan or in a congressionally mandated recurring federal oceanographic fleet status report would likely have provided context for some of the information requested in S. 4784.

Issues for Congress

Congress has a continuing interest in understanding the current capacity of the federal oceanographic fleet and its future capability to support ocean research and related national security priorities in a timely and cost-effective manner. Previously published federal fleet status reports have provided some of this information. An oceanographic research vessel can cost hundreds of millions of dollars.⁷⁹ These vessels may be considered generational investments for the federal government as well as the U.S. oceanographic research community.⁸⁰ Congress may have questions related to the current and future capacity of the federal oceanographic fleet, such as the following:

- What number of oceanographic research vessels is needed for the fleet to meet congressional priorities, and would this require increased, sustained, or reduced federal investment?
- How can the federal oceanographic fleet advance U.S. science leadership and help address potential national security concerns in line with congressional priorities?
- How might the increased deployment of new marine technology, such as uncrewed marine systems (UMSs), affect the number of oceanographic research vessels in the federal fleet?

Mandating a Recurring Federal Oceanographic Research Fleet Status Report

Congress has previously identified the need for a “formal mechanism to coordinate existing partnerships and establish new partnerships for the sharing of resources, intellectual talent, and facilities in the ocean sciences and education, so that optimal use can be made of this most important natural resource for the well-being of all Americans.”⁸¹ To formalize a recurring federal oceanographic fleet status report, Congress could codify the IWG-FI and mandate that the interagency working group publicly publish or submit to Congress a federal fleet status report with some specified periodicity. Congress also could direct the report to inventory the fleet at the time of publication; provide additional details about agencies' future plans, including funding needs to maintain, expand, or reduce the fleet's size to meet evolving congressional priorities; or both. A recurring status report could be used to provide regular updates on the federal

⁷⁹ For example, NOAA awarded a \$624.6 million contract for the design and build of two oceanographic research vessels in 2023 (NOAA, “Contract for 2 NOAA Research Ships”), and NSF estimated a total project cost of \$400 million for three RCRVs in FY2023 (NSF, *FY 2023 Budget Request to Congress*, March 28, 2022, p. Research Infrastructure-31).

⁸⁰ For example, see UNOLS, “Why the ARF Is Important.”

⁸¹ Title II, Subtitle E of P.L. 104-201; 10 U.S.C. §8931 note.

oceanographic fleet, allowing for potential trends in the fleet to be identified. With this information, Congress may choose to address developing trends. Furthermore, Congress may want to better understand why the federal fleet status report that was under preparation in 2023 and 2024 has not been released. Congress also may choose to maintain the status quo of deferring to the executive branch on whether, and if so when and how, to update federal fleet status reports.

Alternatively, Congress could choose to direct a specific federal agency (or combination of agencies) to lead this effort on behalf of federal agencies with an oceanographic and limnological research nexus. Some federal agencies already produce agency-specific shipbuilding plans or fleet status reports. As previously discussed, Congress has directed the Navy to submit a 30-year shipbuilding plan annually and NOAA to submit a replacement and modernization fleet plan every two years. The Navy's 30-year shipbuilding plan omits its auxiliary general ships (including T-AGS, T-AGORS, and AGOR ships). Congress could amend Title 10, Section 231 of the *U.S. Code* to specify that the Navy's auxiliary ships be included in this plan or pass new legislation directing the Navy to submit a separate plan specific to its oceanographic research vessels.

Given that both agency-specific and government-wide fleet status reports have been released, each approach may present advantages. On one hand, agency-specific fleet reports could be more efficient to produce (e.g., fewer layers of bureaucratic review across agencies). In addition, agencies could provide greater specifics, which may inform the respective oversight and appropriations committees. On the other hand, one government-wide fleet status report could provide a more uniform and holistic view of this shared resource. According to the IWG-FI, the government-wide analysis included in a federal fleet status report "ensures that oceanographic agencies have the information necessary to make informed, coordinated, and cost-effective Fleet investments that maximize the entire Fleet's ability to support high-priority research and surveys."⁸²

Right-Sizing the Federal Oceanographic Research Fleet

Congress may also be interested in *right-sizing* the federal oceanographic research fleet, in regard to costs or national priorities. According to the IWG-FI, right-sizing means identifying the "proper size of the Federal Fleet to meet the Nation's mission requirements."⁸³ In addition to ensuring the fleet covers the geographic ocean regions and ocean research objectives identified by Congress and the executive branch, right-sizing might also help to address rising costs associated with the current fleet or potential national security concerns.

Right-Sizing to Reduce Costs

Previous federal fleet status reports noted that inflation-adjusted costs to operate and maintain oceanographic research vessels have risen over time.⁸⁴ This increase was partly attributed to older ships in the fleet requiring more frequent and extensive repairs and increasing operational costs (e.g., higher fuel costs and security at dock facilities).⁸⁵ The IWG-FI has stated that right-sizing

⁸² IWG-FI, *Federal Fleet Status Report*, 2016, p. 4.

⁸³ IWG-FI, *Federal Oceanographic Fleet Status Report*, 2013, p. 2.

⁸⁴ IWG-FI, *Federal Oceanographic Fleet Status Report*, 2013, p. 17; and IWG-F, *Federal Oceanographic Fleet Status Report*, 2007, pp. 17-18.

⁸⁵ IWG-FI, *Federal Oceanographic Fleet Status Report*, 2013, p. 18; and IWG-F, *Federal Oceanographic Fleet Status Report*, 2007, pp. 17-18.

the federal oceanographic fleet could be one option to help address rising costs.⁸⁶ For FY2027, NOAA plans to reduce the number of vessels in its fleet and require standardized core equipment across the fleet to “allow all NOAA vessels to provide multi-mission capabilities.”⁸⁷ Reducing the number of vessels in the federal oceanographic fleet while providing the remaining vessels with multi-mission capabilities may be one approach to reduce operational costs. Congress may consider directing other agencies to do the same.

Improved collaboration and sharing of oceanographic research vessels among certain federal agencies might be another option to reduce operational costs. Some Members of Congress have expressed interest in maximizing federal funding by reducing potentially duplicative federal programs and assets. While individual department and agencies own, and in some cases also operate, oceanographic research vessels, federal agency collaboration on the fleet’s use and operation could maximize the effectiveness of limited at-sea resources, according to the IWG-FI.⁸⁸ For example, according to NOAA, the agency uses UNOLS, Navy, USCG, commercial and international vessels, and hydrographic survey data purchases to cost effectively manage its at-sea data needs.⁸⁹ As another example, NSF anticipates that operational support for its future Antarctic icebreaking research vessel “will be shared with partner agencies,” including ONR, the Bureau of Ocean Energy Management,⁹⁰ and NOAA.⁹¹ Shifting toward greater ship time-sharing between federal agencies, instead of single-agency ownership and operation, might influence how Congress funds federal oceanographic research programs. For example, one potential concern is that Congress may choose to fund one agency at the expense of another. In the absence of information that could be provided by recurring federal fleet status reports, it may be difficult for Congress to evaluate the benefits and drawbacks of single-agency ownership versus greater ship time-sharing.

Right-Sizing to Address National Security Concerns

In contrast to right-sizing to reduce costs, some observers and stakeholders might argue that Congress should increase appropriations for the federal oceanographic fleet to fund service-life extensions of existing vessels and procure new vessels for national security purposes. For example, some Members of Congress have expressed interest in the People’s Republic of China’s (PRC’s, or China’s) expanding global deployment of its state-owned fleet of oceanographic research vessels—from waters close to its coast in the Western Pacific and beyond, including the Arctic Ocean.⁹² Other Members have introduced legislation in the 119th Congress that would require the Secretary of State to submit a report to certain congressional committees about PRC

⁸⁶ IWG-FI, *Federal Oceanographic Fleet Status Report*, 2013, p. 2.

⁸⁷ NOAA, *Budget Estimates: Fiscal Year 2027*, p. OMAO-37.

⁸⁸ IWG-FI, *Federal Fleet Status Report*, 2016, p. 4.

⁸⁹ NOAA, *The NOAA Fleet Plan: Building NOAA’s 21st Century Fleet*, October 31, 2016, p. 19.

⁹⁰ In its FY2027 budget proposal, the Department of the Interior (DOI) announced an intent to unify the Bureau of Ocean Energy Management and the Bureau of Safety and Environmental Enforcement into a single agency to be called the Marine Minerals Administration. DOI, *Budget Justifications and Performance Information, Fiscal Year 2027: Marine Minerals Administration*, p. 35.

⁹¹ NSF, *FY 2027 Budget Request to Congress*, April 3, 2026, p. NSF-Wide Investments-43.

⁹² Congress held hearings during the 119th Congress in which Members expressed concerns related to the potential dual-use purpose of China’s oceanographic research fleet. For example, U.S. Congress, House Committee on Science, Space, and Technology, Subcommittee on Environment, *To the Depths, and Beyond: Examining Blue Economy Technologies*, hearing, 119th Cong., 1st sess., March 26, 2025; and United States-China Economic and Security Review Commission, *Part of Your World: U.S.-China Competition Under the Sea*, hearing, 119th Cong., 2nd sess., March 2, 2026.

and Russian use of research vessels to surveil or sabotage critical undersea infrastructure (see Section 105 of H.R. 8069/S. 3249).

Under the United Nations Convention on the Law of the Sea, scientists and vessels participating in marine scientific research are afforded certain rights, such as the right to conduct marine scientific research in the high seas and in the waters of a coastal nation with that nation's prior consent.⁹³ Some stakeholders contend that the expanded range of PRC research ships' voyages includes areas of potential interest to China's military, such as areas near Guam, a U.S. territory that hosts U.S. military forces.⁹⁴ The USCG also has "observed heightened activity" of PRC research vessels in U.S. Arctic waters, and in July 2026 stated that it "remains vigilant to ensure [vessel] activities comply with established international law."⁹⁵ China's expanded research fleet could enhance its exploration for seabed mineral resources or fishing operations, among other purposes.

China's fleet comprises more than 40 oceanographic research vessels, representing the world's largest research vessel fleet.⁹⁶ China's oceanographic research fleet, according to one observer, has capabilities that are "equivalent" to the U.S. ARF and NOAA's fleet.⁹⁷ PRC oceanographic research vessels are equipped with sonar for collecting bathymetric data (i.e., data used for seafloor mapping) and are capable of deploying UMSs.⁹⁸ Some Members of Congress, U.S. naval observers, and other stakeholders speculate that oceanographic data, including seabed mapping data, collected by these vessels for civilian purposes may also be used for military purposes and may present national security concerns for some countries.⁹⁹ Seafloor mapping activities could enhance China's undersea and seabed warfare capabilities by supporting, among other things,

- operations by China's submarines and UMSs,
- operations by China to counter U.S. or other militaries' submarines and UMSs,
- operations by China to defend its undersea communications cables, and
- operations by China to tap into or cut others' undersea communications cables.

⁹³ Part XIII of the United Nations Convention on the Law of the Sea (UNCLOS). United Nations, *United Nations Convention on the Law of the Sea of 10 December 1982, Overview and Full Text*, https://www.un.org/depts/los/convention_agreements/convention_overview_convention.htm. Although the United States has not ratified UNCLOS, it generally has abided by the convention's terms related to marine scientific research. For more information about UNCLOS, see CRS In Focus IF12578, *Implementing Agreements Under the United Nations Convention on the Law of the Sea (UNCLOS)*, by Caitlin Keating-Bitonti and Matthew C. Weed.

⁹⁴ Austin Ramzy, "China Is Mapping the Seabed to Unlock New Edge in Warfare," *Wall Street Journal*, March 12, 2025 (hereinafter Ramzy, "China Is Mapping the Seabed"); Chris Buckley, "China Surveys Seabeds Where Naval Rivals May One Day Clash," *New York Times*, July 10, 2025, (hereinafter Buckley, "China Surveys Seabeds"); *Economist*, "China Is Itching to Mine the Ocean Floor," July 28, 2024.

⁹⁵ USCG, "Coast Guard Secures the U.S. Arctic as Chinese Research Vessels Arrive in the Bering Sea," press release, July 17, 2026, <https://www.news.uscg.mil/Press-Releases/Article/4549435/coast-guard-secures-the-us-arctic-as-chinese-research-vessels-arrive-in-the-ber>. Also see USCG, "U.S. Coast Guard Responds to Increased Chinese Research Vessel Activity in U.S. Arctic," press release, August 8, 2025, <https://www.news.uscg.mil/Press-Releases/Article/4270057/us-coast-guard-responds-to-increased-chinese-research-vessel-activity-in-us-arc> (hereinafter USCG, "U.S. Coast Guard Responds to Increased Chinese Research Vessel Activity in U.S. Arctic").

⁹⁶ Ryan D. Martinson, "China's Blue-Water Research Fleet: Science in Service of Strategy," China Maritime Studies Institute Notes: 19, *U.S. Naval War College Digital Commons*, February 4, 2026, pp. 2, 12-14 (hereinafter Martinson, "China's Blue-Water Research Fleet").

⁹⁷ Martinson, "China's Blue-Water Research Fleet," p. 3.

⁹⁸ For example, see Ramzy, "China Is Mapping the Seabed"; Buckley, "China Surveys Seabeds"; Pete McKenzie, "China Is Mapping the Ocean Floor as It Prepares for Submarine Warfare with the US," Reuters, March 24, 2026.

⁹⁹ See footnote 92. Also see Ramzy, "China Is Mapping the Seabed"; Elizabeth Claire Alberts and Kara Fox, "China's Deep-Sea Mining Fleet may also Track US Submarines," *Mongabay*, March 24, 2025.

One observer contends that “despite being unarmed, [PRC oceanographic research] vessels and their crew are capable of carrying out a range of missions that subtract from U.S. power and influence—from eroding America’s longstanding advantages in undersea warfare to advancing the PRC’s preferred vision of international maritime order.”¹⁰⁰

In the 119th Congress, the Senate Committee on Foreign Relations advanced legislation that would aim to limit PRC military and oceanographic research vessels from operating in or near U.S. Arctic waters (S. 4708). The bill cites concerns related to the PRC’s increased “use of dual-use military-scientific vessels ... while remaining opaque about its intentions.” S. 4708 would prohibit the Secretary of State from approving an application for a marine research project in U.S. waters for any foreign vessels owned by or associated with a foreign adversary “that threatens the security of the United States,” including the PRC.¹⁰¹ According to one observer, S. 4708 recasts ocean knowledge “as a strategic asset, and its foreign production as a security threat.”¹⁰²

Congress may consider the appropriate level of funding and support for the federal oceanographic fleet given the PRC’s current comparative advantage. According to the USCG, “the Coast Guard is America’s only surface presence in the Arctic—a growing zone of strategic global competition”;¹⁰³ some U.S. oceanographic research vessels conduct research expeditions in the Arctic.¹⁰⁴ Executive Order (EO) 14269 of April 9, 2025, “Restoring America’s Maritime Dominance,” is intended, in part, to help the United States better compete with the PRC in ocean research. In its FY2027 budget request, NOAA requested an increased funding level to accelerate the acquisition of a vessel to support EO 14296.¹⁰⁵ Some private companies and observers, however, contend that leasing a vessel can be more cost-effective for the federal government, compared with purchasing a vessel.¹⁰⁶ Increasing the number of vessels in the federal oceanographic fleet to address national security concerns, such as competing with China in the ocean-research space, would require Congress to increase appropriations and support for federal investment in oceanographic vessels.

¹⁰⁰ Martinson, “China’s Blue-Water Research Fleet.”

¹⁰¹ S. 4708 would allow the Secretary of State to waive the prohibition “on an individual basis if the Secretary determines that doing so is the national interest of the United States.”

¹⁰² Vita De Lucia, “Research, Survey, Espionage: The Securitization of Marine Scientific Research in US Law?,” The Arctic Institute, August 20, 2026, <https://www.thearcticinstitute.org/research-survey-espionage-securitization-marine-scientific-research-us-law>.

¹⁰³ USCG, “U.S. Coast Guard Responds to Increased Chinese Research Vessel Activity in U.S. Arctic”

¹⁰⁴ For example, NSF’s R/V *Sikuliaq*, which is operated by the University of Alaska Fairbanks, conducts research “in the North Pacific Ocean, Gulf of Alaska, and the Bering, Chukchi, and Beaufort Seas.” University of Alaska Fairbanks, “About R/V *Sikuliaq*.”

¹⁰⁵ NOAA, *Budget Estimates: Fiscal Year 2027*, p. NOAA-17.

¹⁰⁶ For example, see Testimony of James F. Wiggins, Associate Director, Defense Acquisitions Issues, National Security and International Affairs Division, in U.S. Congress, Senate Committee on Armed Services, Subcommittee on Seapower, *Defense Acquisition: Historical Insights Into Navy Ship Leasing*, GAO/T-NSIAD-99-141, August 21, 1999, <https://www.gao.gov/assets/t-nsiad-99-141.pdf>; Testimony of Lieutenant Commander R. George Rey, USN (Ret.), President, COTS Technology, LLC, representing Edison Chouest Offshore, in U.S. Congress, House Committee on Resources, Subcommittee on Fisheries Conservation, Wildlife and Oceans, *Oversight Hearing on the “Implementation of the Hydrographic Services Improvement Act of 1998,”* 106th Cong., 2nd sess., July 27, 2000, https://naturalresources.house.gov/uploadedfiles/lt_comm_george_rey_testimony_7.27.00.pdf; Jacques Gansler et al., “Rethinking the Buy vs Lease Decision,” *Proceedings of the Eleventh Annual Acquisition Research Symposium*, Thursday Sessions, vol. 2, April 30, 2014.

Alternatives to Research Vessels

In the decade since the 2016 federal fleet status report, certain federal agencies have increasingly deployed marine technology, including UMSs. For example, NOAA has deployed UMSs for “the collection and utilization of critical, high accuracy, and time-sensitive data.”¹⁰⁷ According to NOAA, the benefits of UMSs include lower costs to own and operate, and reduced safety risk in remote and extreme environments.¹⁰⁸ Congress also has encouraged NOAA to expand UMS operations across the agency and to coordinate research and acquisition of UMSs with the Navy and other federal agencies, industry, and academia.¹⁰⁹ UNOLS contends that “despite rapid advances in satellites, robotics, and autonomous platforms, research vessels remain indispensable,” given they provide for the direct sampling of the ocean and seafloor; the deployment, recovery, and servicing of marine technologies (e.g., buoys); and other services.¹¹⁰ To illustrate this, in May 2026, NOAA announced a \$21.6 million award for the purchase of UMSs to be deployed from new NOAA charting and mapping vessels.¹¹¹ As another example, that same month, NSF announced a plan to remove a network of ocean observation arrays, collectively referred to as the Ocean Observatories Initiative, “subject to ship scheduling and other operational constraints.”¹¹² NSF has since paused its plans to remove these arrays in response to congressional and other stakeholder concerns.¹¹³ Congress may seek to better understand the relative costs and benefits of advanced marine technologies, including UMSs, versus research and survey vessels for fulfilling national maritime priorities.

Congress has previously directed NOAA to provide information about the agency’s use of “chartering agreements, uncrewed assets capable of operating independent of vessels, and commercial data purchase agreements” when its oceanographic research vessels are out of commission.¹¹⁴ Congress could consider directing other agencies to do the same. It could also direct the IWG-FI to broaden such analysis—in a federal fleet status report or elsewhere—to include information about how certain federal agencies are using UMSs and commercial data

¹⁰⁷ NOAA, “About NOAA Uncrewed Systems Operations,” <https://www.oma.noaa.gov/uncrewed-systems/about-noaa-uncrewed-systems-operations> (hereinafter NOAA, “About NOAA Uncrewed Systems Operations”). For more information about how NOAA uses uncrewed marine systems, see NOAA, “Beyond Ocean Mapping: Using Uncrewed Vehicles to Advance Ocean Research,” August 20, 2026, <https://www.fisheries.noaa.gov/feature-story/beyond-ocean-mapping-using-uncrewed-vehicles-advance-ocean-research>.

¹⁰⁸ NOAA, “About NOAA Uncrewed Systems Operations.”

¹⁰⁹ For example, Congress appropriated \$12,665,000 to NOAA’s Office of Marine and Aviation Operations for “unmanned systems operation” in the FY2020 Consolidated Appropriations Act (see the Explanatory Statement for Division B accompanying P.L. 116-93). Also see Commercial Engagement Through Ocean Technology Act of 2018 (P.L. 115-394; 33 U.S.C. §§4101-4106).

¹¹⁰ UNOLS, “Why the ARF Is Important.”

¹¹¹ NOAA, “NOAA Awards \$21.6M for Uncrewed Systems to Support New Charting and Mapping Vessels,” press release, May 6, 2026, <https://www.noaa.gov/news-release/noaa-awards-21-point-6-million-dollars-for-uncrewed-systems-to-support-new-charting-and-mapping-vessels>.

¹¹² Ocean Observatories Initiative (OOI), “Announcement on NSF OOI Descoping,” May 21, 2026, <https://oceanobservatories.org/2026/05/announcement-on-ooi-descoping>. R/V *Sally Ride*, owned by the U.S. Navy and operated by Scripps Institution of Oceanography under a charter agreement with the Office of Naval Research, was used to remove one of the OOI arrays in early June 2026. In late July 2026, NSF began the redeployment of the array (OOI, “NSF Advances Endurance Array Redeployment,” <https://oceanobservatories.org/2026/07/nsf-advances-endurance-array-redeployment/>). For more information about the OOI, see CRS In Focus IF13257, *The Role of U.S. In Situ Ocean Observation Networks: A Case Study of the Atlantic Meridional Overturning Circulation*, by Caitlin Keating-Bitonti.

¹¹³ NSF, “Update on Ocean Observatories Initiative,” June 18, 2026, <https://www.nsf.gov/news/update-ocean-observatories-initiative>.

¹¹⁴ S.Rept. 118-62, p. 58.

buys in conjunction with or independent of federally owned or leased oceanographic research vessels (independent of when research vessels are out of commission). Such an analysis could inform congressional decisions related to the federal oceanographic fleet, including whether the fleet should maintain or decrease its current size in light of the future demand for and use of UMSs.

Appendix. Abbreviations

Abbreviations used in this report are listed below, alphabetically.

Glossary

AGOR	Auxiliary General Oceanographic Research ship
AGS	Auxiliary General Surveying ship
ARF	Academic Research Fleet
ASC	Arctic Security Cutter
CGC	Coast Guard Cutter
IWG-FI	Interagency Working Group on Facilities and Infrastructure
MSC	Military Sealift Command
NASA	National Aeronautics and Space Administration
NAVOCEANO	Naval Oceanographic Office
NDAA	National Defense Authorization Act
NOAA	National Oceanic and Atmospheric Administration
N/V	NOAA Vessel
NSF	National Science Foundation
ONR	Office of Naval Research
PRC	People's Republic of China
USCG	U.S. Coast Guard
R/V	Research Vessel
UMS	Uncrewed Marine System
UNOLS	University-National Oceanographic Laboratory System

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