NOAA Small Boat Program

2018 Annual Report

CONTENTS

NOAA SMALL BOAT PROGRAM

The National Oceanic and Atmospheric Administration's Small Boat Program (SBP) is administered through the Office of Marine and Aviation Operations (OMAO) and is headquartered in Seattle, Washington. It establishes policies and procedures that promote a safe small boat program to support NOAA's program needs, identify applicable regulations, provide operator training, staffing guidance, and marine engineering assistance on boat alterations, boat design and selection criteria. NOAA boats are cost-effective, responsive platforms that are critical to the priorities and mandates of the agency.

NOAA relies on hundreds of small boats located throughout the country to support NOAA's mission of science, service and stewardship through safe, efficient, effective and professional small boat operations. The vision of NOAA' s Small Boat Program is to be the industry leader for diverse, multi-mission small boat operations.

POSTCARD FROM THE FIELD

Galveston Team Aids Search & Rescue

NOAA Fisheries' Kris Benson, Jennifer Doerr, and Jen Leo helped save lives in flood-stricken Texas. Kris rescued this couple on August 27 when their home, built 11 feet above ground, was threatened with fast-rising water. As NOAA's Galveston team searched for Hurricane Harvey survivors, Kris heard the couple's daughter shouting for help. Grappling with disabilities, the couple had only one way out of their home, and Kris navigated debris-loaded water to rescue them.

LINE OFFICE SMALL BOAT OFFICER

Dennis Donahue (OAR & NWS)
Wayne Hoggard (NMFS)
Richard Chesler (NMFS/OLE)
Dave Slocum (NOS)
Michael Davidson (NOS)
John Humphrey (OMAO)

SMALL BOAT SAFETY BOARD MEMBERS

Dennis Donahue (OAR & NWS, Chairperson)
Wayne Hoggard (NMFS)
Richard Chesler (NMFS/OLE)
Chad Yoshinaga (NMFS)
Dave Slocum (NOS)
Michael Davidson (NOS)
John Humphrey (OMAO)
Kevin Ivey (OMAO)
LCDR Nicola VerPlanck (OMAO/SBP)
Joe Duran (SECO)

SMALL BOAT PROGRAM OFFICE STAFF

LCDR Nicola VerPlanck (Manager)
LT Brian Elliot (Executive Officer)
Darel McCormick (Inspection Coordinator)
Jeff Kingrey (Engineering Coordinator)
Paul Moreno (Training Coordinator)

VESSEL PROGRAM COORDINATORS

Peter Plantamura (NMFS)
Wes Parker (NMFS)
Brad Weinlaeder (NMFS)
CDR John Crofts (NMFS)
Chad Yoshinaga (NMFS)
LCDR Carl Rhodes (OMAO)
LCDR Ryan Wartick (OMAO)
Dana Wilkes (NOS)
CDR John Lomnicky (NOS)

VESSEL OPERATIONS COORDINATORS

NMFS

Carl Alderson
LTJG Justin Boeck
John Brusher
Eric Chavez
LTJG Blair Delean
Jennifer Doerr
LT Erick Estela
LTJG Tyler Fifield
LTJG Christopher Gallagher
Annie Gorgone
James Hackett
LTJG Keith Hanson
Pete Harwell
James Hawkes
Michael Hendon
Brandon Howard
Paul Iseri
Christopher Jacobsen
Thomas Kearns
Kenneth Keene
Kyle Koyanagi
Jesse Lamb
Jay Lazar
Robert Marvelle
Camilla McCandless
LT David McVay
Tom Moore
David Morin
Ryan Nichols
Erik Norris
LTJG Bryan Pestone
Peter Plantamura
Russell Reardon
Sean Rooney
Kate Savage
Steve Sessions
Brian Simpson
Jennifer Spencer Smith
Mark Sramek
Erin Strange
Frederick Wenzel
Timothy Wilmarth
Barb Zoodsma

NOS

Andy Armstrong
Keith Brkich
CDR Sean Cimilluca
James Daugomah
Michael Davidson
LTJG Patrick Debroisse
Jean de Marignac
Jean de Marignac
Brian Degan
LTJG Terril Efird
LTJG Alisha Friel
Mike Geagel
LTJG Marybeth Head
Dan Jacobs
Brian Johnson
James Kirkpatrick
LTJG Dylan Kosten
LTJG Michelle Levano
Jay Lewis
Wayne Nowocien
LT Kristin Raja
Eddie Roggenstein
Hanae Spathias
LTJG Sara Thompson
LTJG Melissa Trede
LT Collin Walker
Robert Warner
LTJG Brian Yannutz

OMAO

Ship Commanding Officers
LTJG Sean Digre
LT Justin Ellis
CDR Mike Levine
CDR Jeff Shoup

OAR

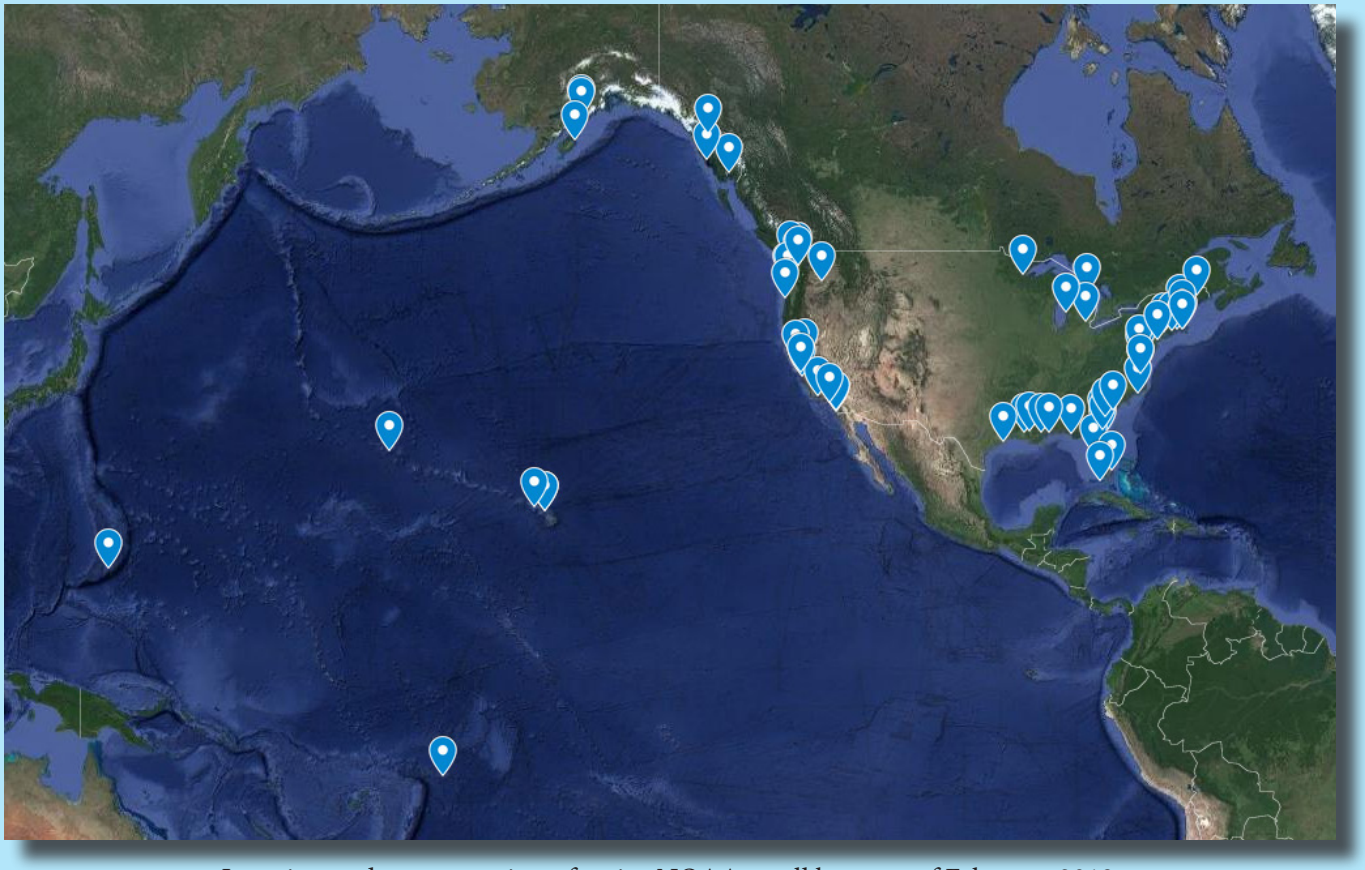
ENS Hunter Brendel
Nick Delich
LTJG Daniel Devereaux
Stephanie Gandulla
LTJG Alyssa Thompson

NWS

LTJG Lauren Jarlenski

NOAA SMALL BOAT PROGRAM HISTORY

Since its formation in 1970, NOAA has relied on both small boats and ship operations to meet the strategic goals of the agency. NOAA's fleet of large research vessels support oceanic requirements and are often the focal point of at sea operations. Smaller vessels owned and operated by NOAA also play a critical role in the agency's mission. Prior to 2002, small boat operations, maintenance and operator training were managed at the regional level, or in some cases local level. A well-defined policy that included minimum standards and procedures did not exist across NOAA. In 2002, the administrator of NOAA at the time, retired U.S. Navy Vice Admiral Conrad Lautenbacher, instructed NOAA to establish universal standards, procedures and policies for conducting safe small boat operations. From this mandate both the Small Boat Program (SBP) and the Small Boat Safety Board (SBSB) were formally established. One of the first actions by the SBSB was development of a NOAA Administrative Order (NAO) specifically to address small boat operations along with supporting documents to enhance safety.



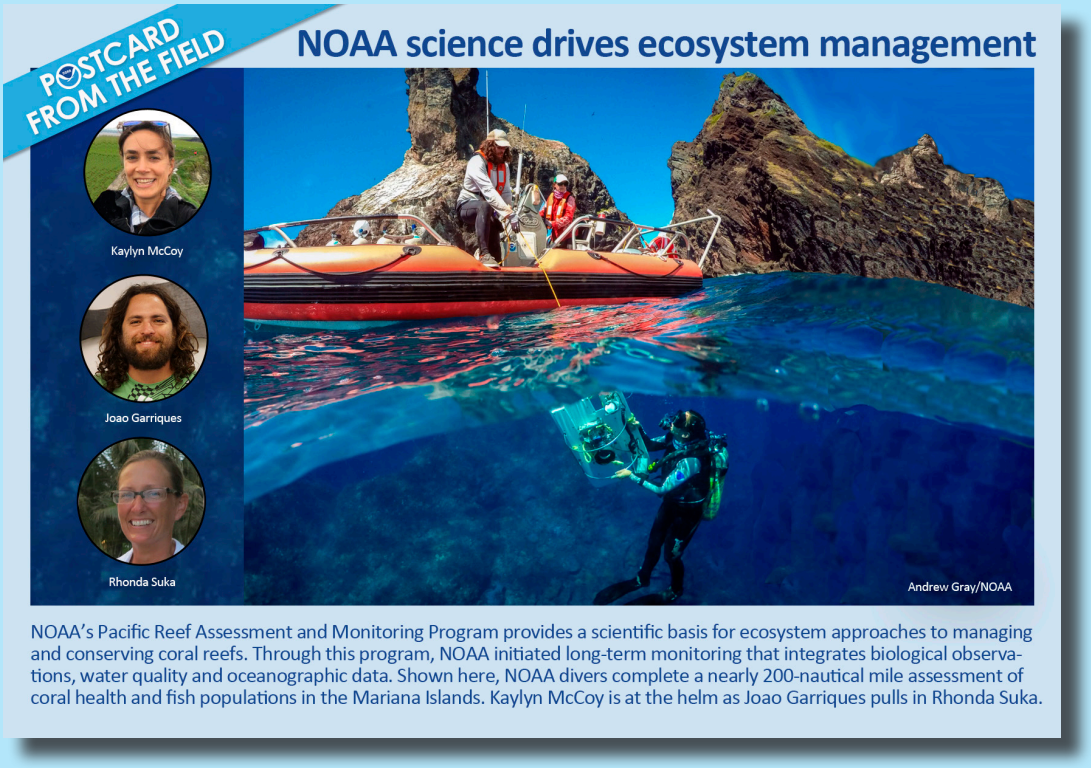
Location and concentration of active NOAA small boats as of February 2019

NOAA operates a fleet of over 400 small boats across the following line offices: Office of Marine and Aviation Operations (OMAO), National Marine Fisheries Service (NMFS), National Ocean Service (NOS), Office of Oceanic and Atmospheric Research (OAR) and National Weather Service (NWS). These small boats range in size from a 10-foot kayak to a complex 85-foot research boat capable of extended overnight operations. The majority of boats are categorized as Class I small boats (16-25 feet) and operate primarily in near-shore environments. These boats are located throughout the United States and its territories and conduct a wide range of operations that include: hydrographic surveys, fishing, diving, scientific instrument deployment and recovery, water and air quality monitoring, law enforcement, marine mammal surveys and educational outreach.

NOAA's small boats are owned, maintained and operated by the individual line offices. OMAO, through the Small Boat Program Office, provides administrative oversight and is the point of contact for support regarding engineering, inspections and policy related questions. The SBP Office is supported by subject matter experts from NOAA line offices, other federal agencies, and industry in developing safety and operational guidelines for both small boats and operators. The SBP Office ensures NOAA owned boats meet or exceed all applicable regulatory and industry standards for construction, safety and operation through comprehensive inspection and training programs tailored to the small boat and mission. In addition, the SBP Office provides technical expertise in the design and acquisition of new small boats, assists with contracting repairs and modifications for existing platforms, administers small boat inspections and conducts training on small boat inspections and maintenance.

The SBP Office, in coordination with the NOAA SBSB develops and implements operational requirements to improve safety on the water. The SBSB is an advisory panel comprised of representatives from each line office as well as members from the NOAA Safety and Environmental Compliance Office, SBP Office and NOAA Fisheries' Office of Law Enforcement. The SBSB is charged with initiating, reviewing, revising and approving all policy and operating procedures pertaining to the agency's small boats. The small boat NAO and Small Boat Standards and Procedures Manual (SBSPM) govern the operating requirements under the authority of NOAA. The SBSB is responsible for initiating and endorsing revisions before final approval.

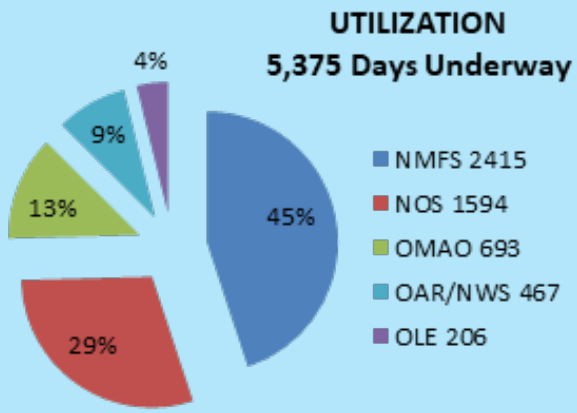
Day-to-day operations are overseen by the Vessel Operations Coordinator (VOC) at each facility who ensures NOAA boats are a properly maintained and crews receive appropriate training for their respective operations. VOCs work with their respective program manager and with the Line Office Small Boat Officer (LOSBO) to carry out safe and effective small boat operations in compliance with all safety and environmental policies. NOAA line offices that have extensive boat inventories utilize a regional Vessel Program Coordinator (VPC) to assist with oversight and inspections within each region. In addition, VPCs assist the LOSBO in better understanding the operations and challenges within each region.

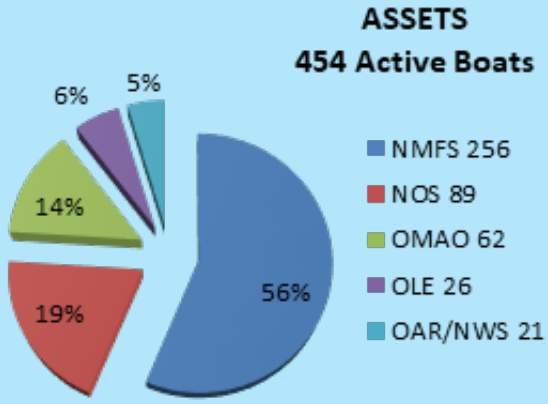


NOAA's Pacific Reef Assessment and Monitoring Program provides a scientific basis for ecosystem approaches to managing and conserving coral reefs. Through this program, NOAA initiated long-term monitoring that integrates biological observations, water quality and oceanographic data. Shown here, NOAA divers complete a nearly 200-nautical mile assessment of coral health and fish populations in the Mariana Islands. Kaylyn McCoy is at the helm as Joao Garriques pulls in Rhonda Suka.

FISCAL YEAR 2018 SMALL BOAT METRICS

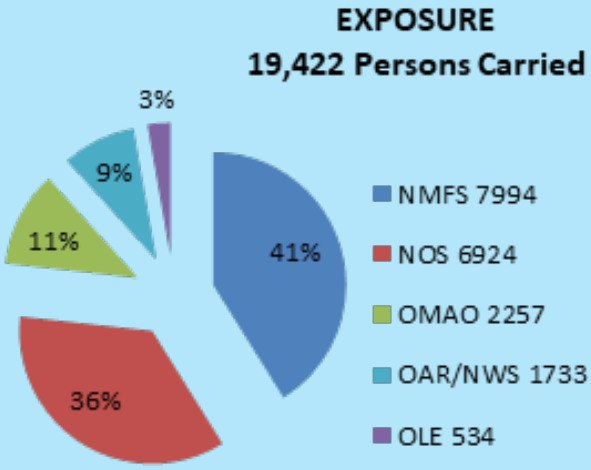
The NOAA Small Boat Program continues to develop fleet wide metrics that support vessel manager needs and inform NOAA leadership of the value and challenges of small boat operations. The program relies on these summary metrics, and associated databases, to develop effective policy, focus resources to areas of elevated risk and customize products and services for the NOAA small boat community.





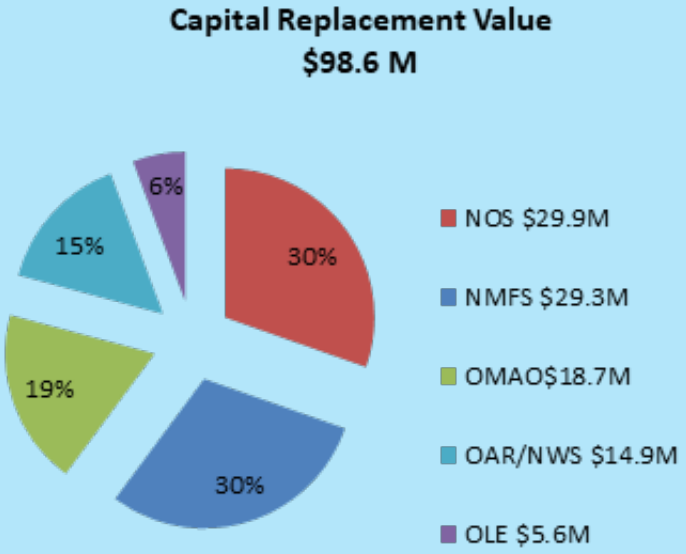
NOAA maintained 454 active small boats in fiscal year (FY)18. These vessels range from kayaks and small skiffs to 80-foot Small Research Vessels (SRVs). The capabilities and configurations of these platforms are a reflection of the diverse missions across NOAA.

Small boats logged 5,375 days underway in support of NOAA' s FY18 missions. These platforms are critical infrastructure for research, resource management and event response programs. Small boats are deployed at all coastal states, U.S. territories and support ship based projects on the open oceans. These versatile platforms have proven to be cost effective tools in support of emerging technologies, event response and remote deployments.



More than 19,000 person/days logged in FY18 is a measure of NOAA's presence on the water. This is one indicator of the magnitude of field work accomplished and potential risk to personnel. A better understanding of the small boat community and their unique missions allows for the refinement of program policy, training and risk management tools. Exposure measures are valuable in qualifying incidents/accidents and sharing of lessons learned.

A 2018 fleet wide summary of the cost to replace existing assets has been derived from individual boat replacement estimates. The $98.6M valuation is an indicator of NOAA' s investment and is a measure of current resources. This data set is based upon in-kind replacement of boat design and capabilities and does not address future mission growth, technology advancements or current unmet requirements.
These boats were originally funded through line office base, program or individual project funding sources. The fleet is comprised of boats acquired through commercial vendors, custom builders, inter-agency transfers and government surplus.

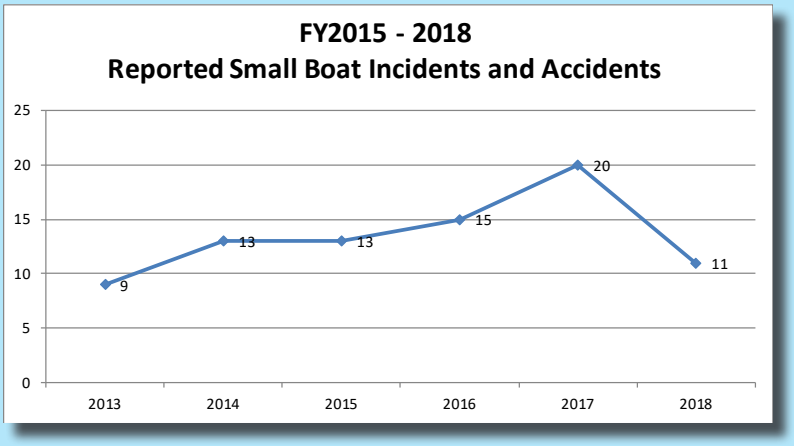


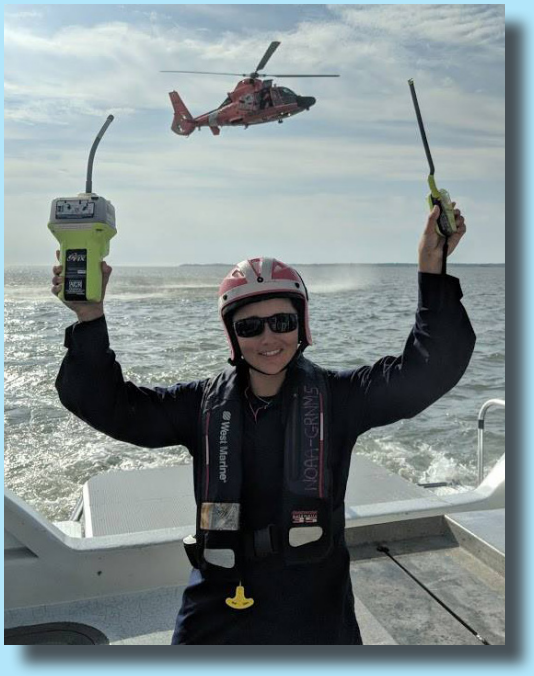
Trends

As collection of program metrics is a new initiative, this two year data set cannot show meaningful trends. However, noted differences between the inaugural year, FY17 and FY18 can be attributed to improvements in reporting accuracy and better defined terms of reference. Program efforts to automate data collection and processing, from new agency-wide float plan and inventory databases, will soon provide higher resolution and real time capabilities.

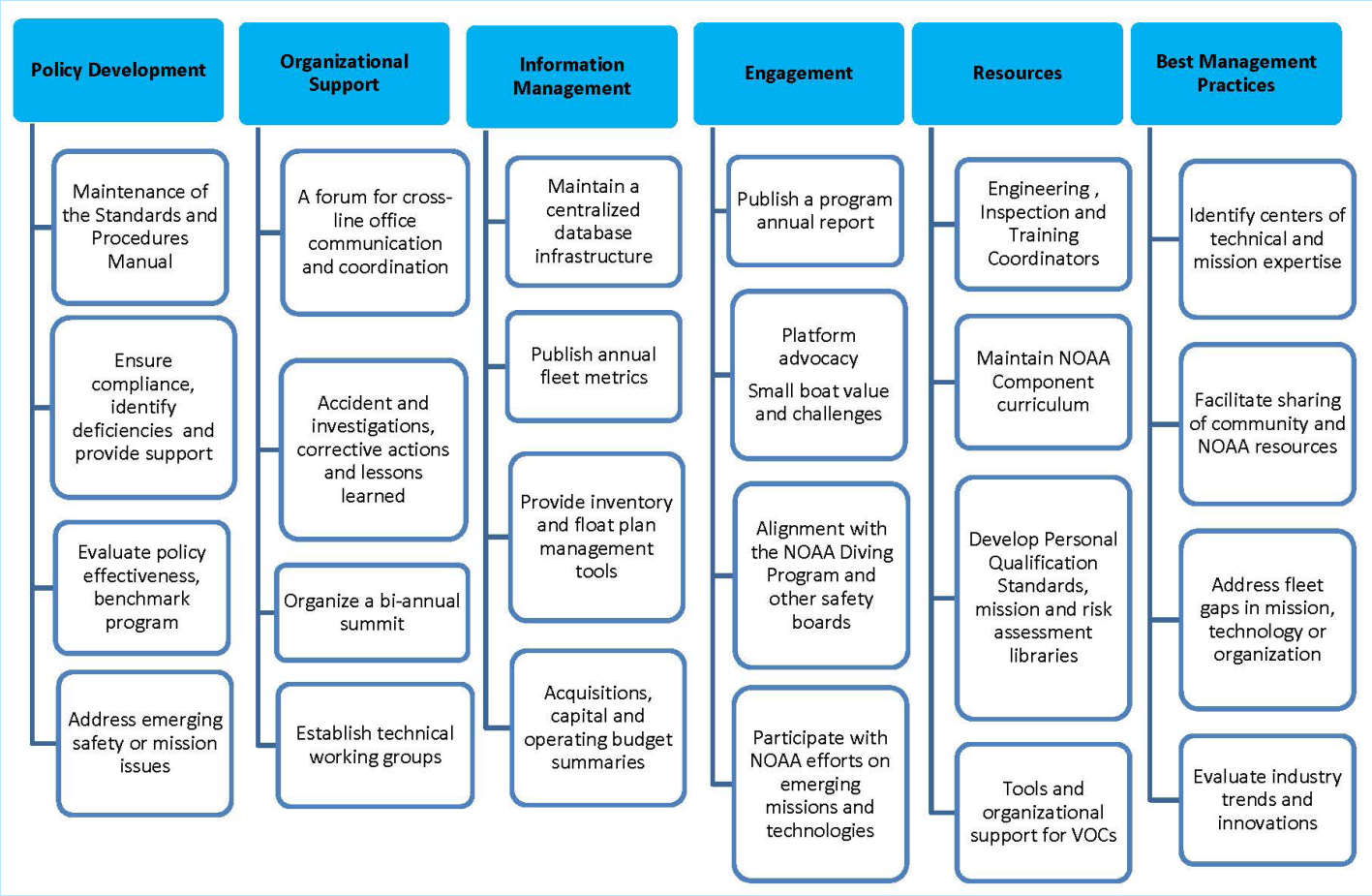
Measures	FY17	FY18	Percent of Change
Assets - Active Boats	421	454	+7%
Utilization - Days Underway	5018	5375	+6%
Exposure - Persons Carried	15898	19422	+11%

The SBP has a much longer data collection history for safety incident and accident information. This data can now be coupled with the new utilization and exposure metrics to best define safety performance and validate program effectiveness.





NOAA SMALL BOAT PROGRAM PRIORITIES



NOAA Small Boat Program – Priorities and Action Plans

The NOAA Small Boat Program continues to evolve to best address the needs of the fleet, maturity of the program, and the diversity of small boat operations across NOAA line offices. The program has grown from a primarily administrative and regulatory effort to become a forum for the larger issues facing the management and use of the NOAA small boat fleet.

Since its initial charter, the SBSB and SBP have recognized the complex relationship of the drivers that ultimately influence risk to safety and mission success. A greater emphasis on these operational drivers has proven to be effective in achieving high safety performance. That holistic and balanced approach to managing risk defines the SBP.

The SBSB maintains a list of priorities to provide focus for program products and initiatives, direct resources and draft sound policy. The associated action plans ensure compliance with the SBSB Charter and NAO 209-125.

Operational Risk Drivers

Policy Development

Making a singular standard relevant to the diversity of platforms, missions and organizational

structures has been an administrative and technical challenge. The Standard and Procedure Manual Edition 4.1 was released in FY18. The new format of the manual better addressees the range of complexities from Small Research Vessels, conducting multi-day offshore missions, to the simplicity of kayaks working in shallow estuaries. It presents a universal model to best manage operational risk through a matrix consideration of platform resources, mission requirements and environmental factors. Collectively, this provides a holistic approach to factors that influence small boat safety and assures regulatory compliance.

In FY18 new online tools were created to capture feedback on the Standards and Procedures Manual. This will support timely resolution to discrepancies and drive future policy revisions.

Organizational Support

Program successes are largely attributed to its strong connections to the realities of field operations. It is built upon the community of dedicated individuals responsible for safety and operational efforts on the waterfront, otherwise known as Vessel Operations Coordinators (VOCs). VOCs have an extensive list of responsibilities and are the foundation of small boat safety, platform management and mission support. By design, the execution of small boat policy is delegated to these subject matter experts who have the best understanding of waterfront activities and risks. The SBSB and SBP office are working to improve tools, organizational structure and resources that support VOC efforts. In FY18 the program initiated standard requirements for performance plan elements to support VOC responsibilities.

It should be recognized that the SBP oversight is dependent upon both OMAO administrative support through program staff and the collaborative efforts of the line offices. That structure poses organizational and accountability challenges that are being addressed through strategic engagement with NOAA leadership. Future program successes will rely on continued cross-line collaboration. Sharing the wealth of technical talent and operational perspectives throughout the small boat community is an overarching priority.

The SBSB provides critical oversight when safety has been compromised. All accident/incident and near-miss reports are reviewed to ensure thorough investigation, establishment of root cause and sharing of lessons learned. Additionally, reports from fleet inspections provide insight to the material condition and asset management challenges that ultimately influence safety margins. New procedures have been developed to process this information to determine fleet exposure or initiate policy changes.

Efforts are being made to expand the community involvement. Creation of working groups that include boat operators and VOCs have extended program participation to a larger portion of the small boat community. Their input has proven to be a valuable reality check and will build potential for the next generation of program leadership.

Information Management

It is increasingly more important to quantify the magnitude of small boat operations. These measures are needed to communicate the critical mission value and safety record of the small boat fleet. In response, the program is supporting centralized databases to help manage the inventory and operation of over 400 small boats.

The Vessel Inventory Management (VIM) database and the Vessel Operations Program (VOP) provide critical insight into fleet assets and missions. These tools provide vessel management efficiencies at the local level and allow for oversight at the line office and program levels.

The program has realized improvements in response to data calls, safety compliance measures and identifying areas of risk exposure. These tools better qualify traditional safety metrics with new activity measures. A notable accomplishment in FY18 was establishing replacement cost for the fleet, which now gives context to NOAA's capital investment.

The SBSB is working to secure long term commitments for critical data management development and support resources. A standing working group is identifying new programming applications and enhancements. These efforts support the requirements and perspectives on the waterfront and at headquarters.

Engagement

Many SBP initiatives are devoted to raising the general awareness of fleet value and challenges. An overarching theme is to improve communication to ensure that the agency is supportive of the safe and

efficient use of NOAA small boats. A high program priority is to act as an advocate of the small boat platform across all line office and agency interests.

Steps have been taken to improve the visibility of NOAA small boats to a broader audience of potential users. Increased sea days better support fixed operating costs and add mission value.

Connection to external groups is also a high priority. The small boat team is working to engage interested parties throughout NOAA to share expertise and facilitate new missions from small boats. Closer coordination with the NOAA Diving Program is addressing boat support during diving missions. Near term plans include engagement with groups coordinating the use of autonomous vehicles and drones from boat platforms.

The SBSB recognizes the value in leveraging successes at partner agencies, institutions and industries to enhance support of NOAA small boat operations. There is support for a formal peer review of the NOAA Small Boat Program as a benchmarking and improvement effort. This peer review is expected to provide a fresh perspective on the SBP's structure, policy and products.

Resources

There has been broad recognition of the effectiveness of the SBP and SBSB in recent years. It is truly a collaborative effort with notable successes. Maintenance of program documents and web content, producing fleet metrics, facilitating training, conducting inspections and providing technical support are core program staff responsibilities. The ambitious SBSB priorities, new products and increased program visibility compound expectations. Supporting program growth, while maintaining high quality products, will remain a challenge.

In FY18, a Training Coordinator position was added to support interest in training opportunities and resources for career development. Due to the nature of seasonal field work, many units are reliant upon annual training for new personnel and qualification of boat operators. A training working group has updated the content and delivery of the NOAA Component Course which is an introduction to NOAA policy and risk management. Near-term plans include the development of libraries of mission specific risk assessments and standard operating procedures, and a clearinghouse for external training opportunities.

Management of the larger vessels in the small boat fleet poses challenges to programs, labs and centers across all line offices. Engineering and Inspection Coordinators provide technical assistance and oversight of regulatory compliance and material condition. A stability working group was established to assist in the evaluation of design and operating area limitations for Class I and II boats. A process has been developed to provide guidance and oversight of vessel acquisitions to assure that new boats meet compliance and mission requirements.

The program is committed to organizing a bi-annual small boat summit as a workshop for technical presentations and networking forums. These summits support all the stated program priorities and are effective in validating current program initiatives and establishing new requirements. The current action plan is a direct reflection of the summit in 2017. The next summit, scheduled for November 2019, is a considerable effort of program staff and SBSB members.

Best management practices

The culmination of all of these priorities is the development of best management practices. The program is formalizing procedures and creating products that institutionalize safety and mission expertise found throughout the fleet. Key to these efforts is the strong support for the bi-annual summit, creation of working groups and cross-line collaboration.

NOAA SMALL BOAT PROGRAM OFFICE UPDATE

The NOAA Small Boat Program Office has had a busy and successful year. The office supports the fleet through Engineering, Inspection and Training Coordinators. The Program Manager and Executive Officer are critical to coordination and implementation of SBSB initiatives, maintaining communications, and are the focal point for interest in NOAA's small boat fleet. The office manages critical databases used to support policy development, respond to data calls and publish fleet wide metrics.

In 2018, the small boat inspectors completed 22 Class III and Small Research Vessels inspections and 79 Class I and II inspections. These 101 inspections provided a fresh set of eyes on material condition and a comprehensive review of compliance. Efforts this year were focused on the implementation of the new minimum requirements for operating offshore and safety equipment. There has been a decline in the number of deficiencies found during these inspections. This can be attributed to increased participation in the Annual Small Boat Examination Course and the maturity of boat programs at the labs and centers.

The SBP Office provided construction oversight of nine new boats and technical support for the repairs or alteration of five boats for various NOAA centers and labs. Assistance in preparing statements of work for small boat projects and review of drydock repair packages ensures specifications meet the requirement set forth in the Small Boat Standards and Procedures Manual Edition 4.1 (SBSPM). The Inspection and Engineering Coordinators participate on the stability working group which is responsible for the comprehensive evaluation of Class I and II boats intended to work in exposed waters. In FY18 the working group completed six evaluations to ensure that boats meet design requirements for offshore service.

The SBP has hired a new Training Coordinator, Paul Moreno. This position will be the focal point for managing the certifications and qualifications mandated by the SBSPM, such as the NOAA Component Course and basic seamanship training. The process for qualifying new NOAA Component instructors has been updated to ensure training quality and availability in all regions. Plans have been developed to increase the use of the Commerce Learning Center for training content and tracking of operator credentials. Upcoming efforts include creation of a Personal Qualification Standards library and sharing of career learning opportunities across the small boat fleet.

NOAA LINE OFFICE HIGHLIGHTS

N M F S

NOAA National Marine Fisheries Service

The National Marine Fisheries Service (NMFS), or NOAA Fisheries, has more than 30 research centers around the United States. The agency relies heavily on small boats to support fisheries management, protected species and marine resources. The diversity of scientific operations and environmental challenges require special considerations and platforms to successfully accomplish the agency's mission. NOAA Fisheries operates 250 boats, ranging from small, one person plastic kayaks to steel deep draft small research vessels, approaching 80 feet in length. This widespread range in vessel size and capability is required to support the priorities of the agency. From the shallow mangrove lagoons to the blue open ocean, small boats fulfill a critical role. NOAA Fisheries boats are used to support the Endangered Species Act, Magnuson Stevens Act, assess the health and populations of marine mammals and sea turtles, improve stock assessments, evaluate critical habitat, and support law enforcement.

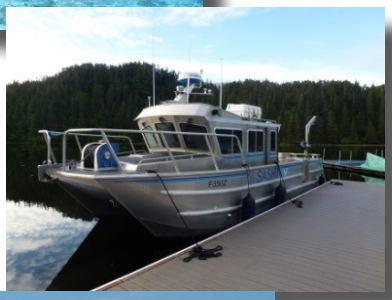
A valuable capability of the NOAA Fisheries fleet is to be able to quickly respond and provide assistance during national emergencies. From recent hurricanes to coastal flooding, these platforms responded and were instrumental in rescue efforts, as well as able to rapidly mobilize and evaluate damage after the disaster. The *Deepwater Horizon* oil spill and other similar events required a prompt response in order to gather critical baseline data and the NOAA Fisheries boats were standing by and responded. This nimble capability and state of readiness is sometimes an overlooked asset. Today, small boats continue to support recovery efforts across the nation through multiple restoration projects.

NOAA boats are cost-effective, responsive platforms that are critical to the priorities and mandates of the agency. Small boats are an essential platform for numerous NOAA Fisheries operations, a few of these include: responding to marine mammal disentanglements, assessing critical habitat, conducting resource surveys, bycatch reduction evaluations, dive operations and supporting numerous other research activities. The larger research vessels operated by NOAA Fisheries are often called into service during a disaster to serve as a base of operations. Many of these boats are equipped with ample berthing, full galley, and potable water, along with the electronics, deck equipment and the sampling gear required to gather baseline information. The NOAA Fisheries small boat fleet provides the assets needed to execute on the water research conducted in both coastal and near coastal areas. Their flexibility in scheduling and the wide range of available platforms that are capable of working in very shallow depths to oceanic blue water highlight the significance of the fleet. The important niche small boats fill is sometimes taken for granted and not readily apparent, nor does it garner the media coverage of some of the other platforms within the agency. Many of the ongoing projects and NOAA Fisheries priorities would not be initiated or completed without the support of the small boat fleet. To meet the mandates and research requirements of the agency, small boats are and will continue to be a required tool to conduct field work in every region. NOAA boats will continue to play a critical role in meeting the priorities of the agency, whether conducting research or responding to disasters these platforms are ready and fully capable.

Kayaks and canoes are the platform of choice for many operations. In the image to the right, a kayak is used to access a stationary antenna array, used to examine the movement of juvenile and adult Passive Integrated Transponder tagged salmonids. Non-motorized boats are an essential tool for acquiring vertical profiles of water temperature, dissolved oxygen, salinity and habitat assessment. Understanding how juvenile fish and crustaceans utilize inshore estuaries and lagoons before going out to sea is a NOAA Fisheries priority.

Small outboard and inboard powered boats support numerous nearshore operations such as: dive support, biopsy sampling, marine mammal surveys, disentanglement response, recovery of sampling devices, trawling, water profiles, debris removal and transportation of field crews to remote coastal sites. The majority (184) of the NOAA Fisheries fleet is comprised of vessels within this size range of 16 to 40 feet.

Vessels with extended capabilities are an important component and required to meet many of the operational requirements within NOAA Fisheries, which currently operates eight vessels configured to support a wide range of operations. Two Small Research Vessels (SRVs) the R/Vs *Gloria Michelle* and *Southern Journey* have berthing and extensive range to support multifaceted cruises. The R/V *Gloria Michelle* is now equipped with 100 percent LED lighting and will operate on biodiesel during the 2019 season. This class of vessels can satisfy many of the nearshore research requirements therefore providing additional sea days for NOAA ships. SRVs and Class III (40-65 feet) boats are cost effective and fully capable of fulfilling many of the agency's research and survey requirements.



N
M
F
S

NOAA Office of Law Enforcement

NOAA's Office of Law Enforcement (OLE) protects marine wildlife and habitat by enforcing domestic laws and supporting international treaty requirements designed to ensure global resources are available for future generations.

OLE West Coast Division 27-foot SafeBoat providing at-sea compliance assistance of marine mammal regulations

OLE supports the core mission mandates of NOAA Fisheries—maximizing productivity of sustainable fisheries and fishing communities, as well as protection, recovery and conservation of protected species—through its efforts to enforce and promote compliance with the marine resource protection laws and implementing regulations under NOAA's purview.

OLE Southeast Division 24-foot Zodiac RHIB approaching a fishing vessel to conduct an at-sea boarding

OLE Enforcement Officers and Special Agents operate 26 small boat patrol vessels throughout the five Enforcement Divisions. These small boats support OLE's priorities through at-sea enforcement and compliance assistance of fisheries and protected resources regulations.

Alaska Division 37-foot Bay Weld (right)
30-foot North River (left)

OLE small boats vary in size from 17 to 37 feet and include fiberglass and aluminum hull constructions and inboard and outboard drives. The majority of small boats operate in near-shore environments. In the Alaska Division, small boats allow OLE officers and agents to travel to the ports not connected to the road system.

In 2018, OLE took delivery of eight new small boat patrol vessels. In the Alaska Division, two Bay Weld 37-foot vessels and two North River 30-foot vessels were delivered with a combined cost of approximately $1.3 million. These vessels joined a fleet of four 26 and 27-foot rigid hull inflatable boats (RHIB).

34-foot Metal Sharks:
Southeast Center Console (right)
Northeast Cabin (left)

For the Northeast and Southeast Divisions, four Metal Shark 34-foot vessels were delivered. Two of these Metal Shark boats are the first OLE vessels in the northeast in over 16 years. The other two join a fleet of four 24-foot Zodiac RHIBs in the southeast.

Pacific Islands Division 35-foot SafeBoat patrols around the main Hawaiian Islands, primarily within the Humpback Whale National Marine Sanctuary off of the island of Maui and along the Waianae Coast of Oahu focusing on spinner dolphins and humpback whale activity, and boarding commercial long line vessels (right).

OLE officers and agents attend the four week Marine Law Enforcement Training Program (MLETP) at the Federal Law Enforcement Training Center in Glynco, GA. The major emphasis of this comprehensive training program is on the safe and proper operation of marine patrol vessels with specific training in law enforcement operations.

NOAA LINE OFFICE HIGHLIGHTS

NOS

NOAA National Ocean Service

National Ocean Service (NOS) small boats are essential to accomplishing the mission of the National Ocean Service. From supporting safe and efficient transportation and commerce to preparedness and risk reduction to stewardship, recreation and tourism, NOS programs rely on small boats to achieve its core priorities.

Small boats respond to storms, help reopen ports

Small boats assist the Office of Coast Survey (OCS) in achieving its mission to conduct hydrographic surveys, update NOAA's suite of nautical charts, and respond to navigational emergencies. OCS has six small boats strategically located around the country and homeported with each of its Navigation Response Teams (NRT).

During the 2018 hurricane season, NRTs responded to storm-damaged ports and waterways, conducting hydrographic surveys from their small boats following hurricanes Florence and Michael. One team coordinated with the U.S. Army Corps of Engineers to survey the Cape Fear River, thus allowing a fuel barge to enter Wilmington, NC, and refuel the local hospital and water facility to keep them running. OCS also identified hazards in the Cape Fear River, getting an updated chart to the U. S. Coast Guard (USCG) in a record time of less than eight hours. This data supported the USCG's decision to reopen the Port of Wilmington, which contributes $13 billion a year to the state. In Panama City, FL, after Hurricane Michael, NRTs searched for the USS *Sea Fighter*'s two anchors lost while the ship weathered the storm at anchor, and identified the location of three collapsed range towers for the U.S. Coast Guard.

OCS is planning autonomous systems survey missions for each of its NRTs in 2019. Autonomous systems on OCS's small boats can more efficiently and effectively acquire survey data in dangerous or extremely shallow waters during both routine and emergency response missions.

Small boats aid data collection to support safe marine transportation

Small boats support the Center for Operational Oceanographic Products and Service's (CO-OPS) National Water Level Observation Network, tidal current surveys, prototype testing, and Physical Oceanographic Real-Time Systems (PORTS®). These CO-OPS products and services — which would not be possible without small boats — are at the heart of NOS's priority to support safe and efficient marine transportation and commerce.

CO-OPS current surveys improve current predictions, which mariners need to safely and efficiently navigate coastal waters. In 2018, small boats supported a 16-month current meter survey in south Texas. Because of the shallow water in the region, CO-OPS had to use non-standard methods to deploy sensors for the survey. CO-OPS staff opted to use a smaller boat than usual, providing a more cost effective way to accomplish its goal. CO-OPS also relies on small boats to test newly engineered observation systems that will allow for more efficient collection of tidal current data. In 2018, a field crew used small boats for missions out of Cape Charles, VA, to test prototype real-time current meters attached to a small surface buoy.

Finally, small boats are an asset to get new current meters on U.S. Coast Guard Aid to Navigation (ATON) buoys. In 2018, CO-OPS used small boats to deliver crew and equipment to ATON buoys in the Miami ship channel to install new sensors as part of a new Miami PORTS® partnership.

Small boats enable protection, enjoyment of marine sanctuaries

The Office of National Marine Sanctuaries (ONMS) serves as the trustee for a network of underwater parks encompassing more than 600,000 square miles of marine and Great Lakes waters. The ONMS small boat fleet is a critical tool for assessing, monitoring and protecting some of our nation's most significant marine resources. Every national marine sanctuary depends on small boats to access the area it manages.

In the Florida Keys National Marine Sanctuary (FKNMS), NOAA small boats help protect coral reefs. Staff install and maintain mooring buoys that make it possible for boaters to enjoy the sanctuary without damaging fragile coral reefs, eliminating the need to anchor on sensitive habitats. There are currently more than 500 mooring buoys available for use within the sanctuary. FKNMS also maintains more than 300 informational buoys throughout the Florida Keys. By marking shallow sites, no wake zones and sensitive habitats, informational buoys mitigate the impacts of boaters and reduce the risk of economic losses from potential resource damages. These markings aid in preventing vessel groundings and possible ship strikes with seagrasses and corals, further reducing habitat damage.

In the northwestern Gulf of Mexico, one particular small boat — the R/V *Manta* — gives NOAA staff the ability to conduct dive research, deploy remotely operated vehicles (ROV), and perform survey mapping operations. In 2018, the R/V *Manta* spent 56 days at sea over the course of 16 trips. In total, 490 dives were conducted safely and successfully from the vessel. The R/V *Manta* also successfully completed 19 days of ROV operations, including 34 ROV dives and 42 hours of bottom time. The Flower Garden Banks National Marine Sanctuary teamed up with OCS to survey Big Dunn Bar, Small Dunn Bar, Claypile Bank, and Coffee Lump Bank. These efforts support the Bureau of Ocean Energy Management as well as the NOAA Fisheries and the Gulf of Mexico Fisheries Management Council by identifying sensitive natural habitats relevant to the resources they manage.

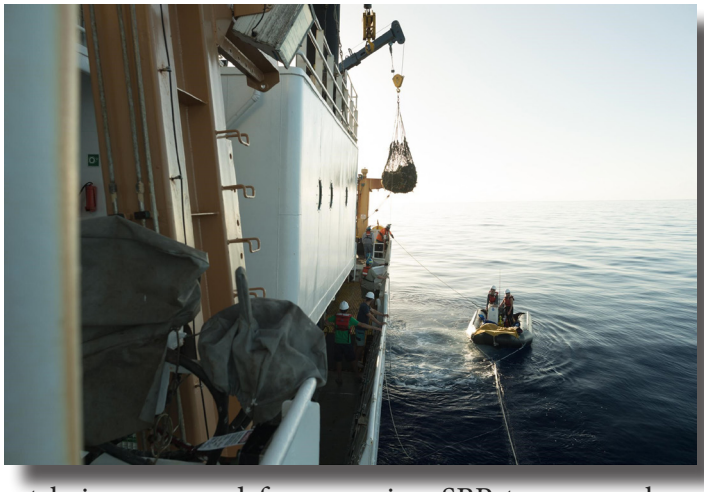
Small boats are an invaluable NOS resource

NOS will continue to rely on small boats as it pursues its mission into the future. As NOS is more frequently called upon to respond to storm-damaged communities, it will rely on small boats to aid in their recovery. It is important to note that the increasing demands on an aging fleet are leading to higher operating costs as well as near and long-term challenges to maintaining safe, efficient and effective operations. However, the emerging technology of autonomous vehicles is beginning to boost the efficiency and effectiveness of small boats to gather key hydrographic and current survey data essential to continued support of safe and efficient transportation and commerce along our nation's coasts.

OMAO

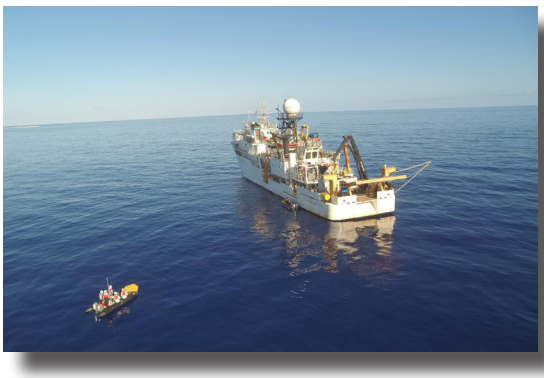
NOAA Office of Marine and Aviation Operations

The Office of Marine and Aviation Operations (OMAO) has a unique role in the NOAA small boat world. Widely known for its management and operation of NOAA's fleet of 16 ships and nine aircraft, it is less known that many operations require extensive use of small boats.



While the fleet is staffed with professional mariners and in many cases, personnel with an extensive background in operating small boats safely and efficiently, the NOAA Small Boat Program still provides extensive support to OMAO in many different facets. This year members of the SBP team assisted in identifying a critical failure in NOAA Ship *Ronald H. Brown*'s fast rescue boat. While this led to the *Brown*'s fast rescue boat being removed from service, SBP team members continued to assist and quickly identified a suitable replacement and ensured that the replacement would function properly aboard the *Brown*.

Ultimately, they worked closely with the *Brown* and the Marine Operations Acquisition, Analysis and Accountability Branch to ensure an accurate and complete statement of requirements was produced for the acquisition of a new asset. This finalized the process of replacing an unsafe boat thereby ensuring the safety of all aboard Brown as she carries out her important missions around the world.



In the spirit of a "One NOAA" attitude, SBP, OMAO and the NOAA Fisheries personnel reached across the boundaries of line offices, as well as physical boundaries stretching from Silver Spring, MD, to Honolulu, HI, to lay the groundwork to introduce diesel powered outboard engines into the NOAA small boat fleet thereby eliminating the need to carry additional amounts of gasoline, which is a significant safety concern aboard ships due to its increased volatility and fire danger.

SBP personnel worked hand in hand with OMAO engineering, environmental and ship based professional mariners to develop a new bilge water filtration system when the hydrograpic launch's original manufacturer discontinued making the filtration system.

Whether aboard the ship, or ashore, the SBP has offered assistance to OMAO through supporting the Marine Operations Center - Pacific in Newport, OR, who dealt with the ravages of galvanic corrosion at their piers. The recommendations of Small Boat Program personnel have led to the purchase of a testing/ monitoring kit for the facility and they continue to assist in monitoring and evaluating the results to ensure that OMAO's assets are protected whether they are in or out of the water.

The above are just small examples of how the SBP has supported and enhanced OMAO's overarching mission and allows many of OMAO's personnel to remain focused on the direct mission at hand while knowing there is a team of small boat professionals ready to assist when needed.

NOAA LINE OFFICE HIGHLIGHTS

O
A
R

NOAA Office of Oceanic and Atmospheric Research
NOAA National Weather Service

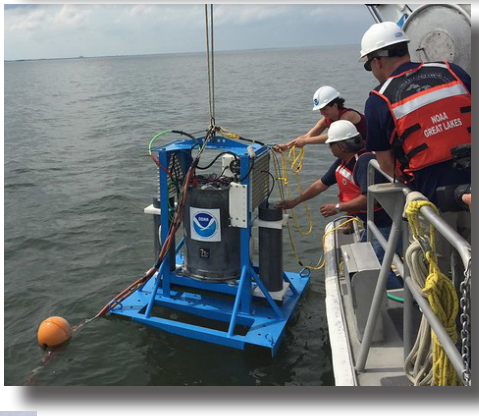
NOAA small boats provide critical support to the missions and research objectives of the Oceanic and Atmospheric Research (OAR) labs and the National Weather Service (NWS). The Small Boat Program has grouped these line offices together for administrative purposes but there are many operational similarities. Small boats are maintained by the OAR "wet" labs; the Atlantic Oceanographic and Meteorological Lab (AOML), the Pacific Marine Environmental Lab (PMEL), the Great Lakes Environmental Research Lab (GLERL), the NWS field offices and the National Data Buoy Center (NDBC).

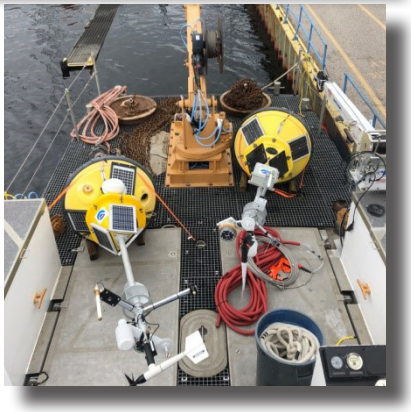
Common to all of these labs and centers is the development, deployment and servicing of meteorological, ocean and Great Lakes observing systems. Small boats are integral to the successes of those observing platforms which feed NOAA's ecosystem modeling and climate weather forecasting. OAR and NWS missions are dependent upon small boat support and collaboration with other line offices.

AOML uses small boats for study the coral reefs along the Florida Keys to provide sustained and long-term measurement of key variables to gauge the status and trends of coral reef health. Small boats deploy sub-surface automated samplers to study water chemistry on shallow reef habitats and support sampling at monitoring sites at Cheeca Rocks in the Florida Keys. These boats are critical to AOML efforts to understand the status and trends of coral reef health. Boats support research efforts to connect Everglades restoration and climate change with economically vital sport fish species within Florida Bay.

PMEL has been a leader in development of instrumentation that advances our knowledge of the global ocean and its interactions with the earth, atmosphere, ecosystems, and climate. The testing, calibration and validation of those instruments is supported by the research vessel SP Hayes. The Hayes is equipped with an A-frame, which allows for the deployment and recovery of full-size research moorings and the deployment and recovery of autonomous vehicles. It is vital in the development of the Oculus glider program and the Profiling Crawler (PRAWLER) mooring system. The Hayes primarily works in Puget Sound where it deploys and recovers underwater gliders for testing and analysis before their global deployments.

GLERL vessel operations support all NOAA interests in the Great Lakes basin. A fleet of Class III boats and one SRV are used to cover the diverse NOAA missions across a significant geographical area. Consolidation of small boat resources under one operating unit has proven to be a valued asset to researchers at OAR's Lab, Thunder Bay National Marine Sanctuary, and NOS programs and centers. These shared-use platforms and talented crews facilitate the "One NOAA" approach to management of our fresh water seas. These boats support GLERL's research portfolio including ecosystem dynamics, observing systems and modeling. Much of this work is dependent upon vessel infrastructure optimized for heavy buoy and subsurface instrument deployments.





In addition to supporting a network of coastal observation buoys, GLERL boats conduct ecological monitoring and track harmful algal blooms that impact municipal water supplies. Multibeam and side scan sonar capabilities are critical to the management of 4500 square miles of National Marine Sanctuaries and NOAA's ecological mapping and hydrography needs in the Lakes. The versatility of the SRV *Laurentian* allows for multi-discipline, long range cruises. GLERL has been working to refine the optimum number of vessels, geographic distribution and mix of capabilities. This ongoing effort to right-size the fleet focuses on efficiency and provides the versatility for researchers to quickly respond to emerging issues.

NDBC maintains two Ridged Hull Inflatable Boats with outboard motors to transport personnel and gear between a support vessel and an ocean buoy for servicing. Additionally, the small boats can be used to tow equipment and mooring components to its precise location for deployments.

The availability of ship time aboard government owned vessel assets decreases each year due to the decommissioning of ships and the competition for project days. NDBC small boats are increasingly being deployed from commercial charter contracts for buoy system operation and maintenance. The NDBC and NWS field units across the country are dependent upon small boat support from other line offices. Event response and equipment repairs are often being facilitated by the network of NOAA small boats and operators.

SMALL BOAT SAFETY

Promoting Small Boat Safety through Risk Management

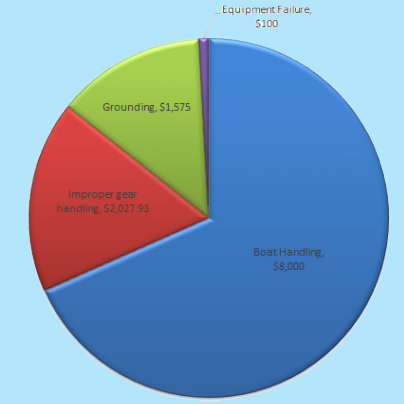
The focus of effective occupational safety programs has shifted away from traditional compliance based approaches towards systems, which include continuous improvement, identifying potential risks and reducing hazards. The Small Boat Program has integrated these risk management principles in the development of policy, standards and support resources.

FY18 was the first field year under the revised Standards and Procedures Manual Edition 4.1 which instituted a new holistic approach to risk management in small boat operations. It encompasses risk to personnel, assets and mission success. That approach builds upon the success of the Green Amber Red risk assessment tool which has been in use for over ten years. The addition of a baseline assessment of the boat capabilities and a mission assessment of critical operational requirements has provided a better means identifying, communicating and managing risk. New standards for emergency training and onboard resources have provided better incident response.

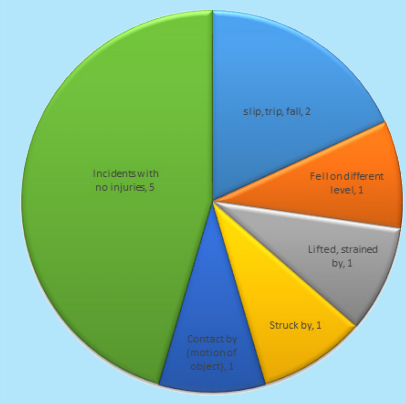
There are indicators that these tools, in combination with improved training and vessel management, have been effective. In 2018, 11 reported small boat indents and accidents resulted in six minor injuries and a total of $11,703 in small boat or equipment damage cost. FY18 metrics, showing more than 5,000 days underway with nearly 20,000 persons, provides context, defines fleet incident rates and exposure.

The SBSB investigates all reported incidents, accidents and near misses to ensure that root cause is established and that corrective actions are implemented. This information is also used to establish trends, direct program resources and draft policy. The SBP's exceptional safety record is primarily due to the talent and engagement of vessel operators and coordinators who manage risks on the waterfront.

2018 Equipment Damage Cost ($)



2018 Accident with Injury Type



PARTNERSHIPS

Spotlight on Partnerships

All NOAA missions are reliant upon cooperative efforts and partnerships. The small boat community is a reflection of that philosophy. The program was built upon collaborative efforts and contributions from all line offices to support the needs and objectives of the fleet. The hallmark of the small boat community is the sharing of resources and talent to support NOAA's diverse missions. This is particularly evident on the waterfront where it is a team effort to support safe and efficient operations. These collaborative efforts often develop into larger initiatives that can be shared and implemented on a larger scale. There have been a number of notable highlights in 2018.

NOAA Fisheries has partnered with the U.S. Fish and Wildlife Service (USFWS) to collaborate on training programs. NOAA has approved the Department of Interior (DOI) Motorboat Operator Certification Course (MOCC) as an equivalent to the basic boating training requirement for Class A, I, and II boats. NOAA Fisheries has worked with the USFWS to develop the MOCC training opportunities for all NOAA personnel by building a robust training program in the Pacific region and certifying NOAA Fisheries instructors to increase capacity for existing DOI courses.

NOAA has a five-year Memorandum of Understanding (MOU) with the Customs and Border Protection, Office of Air and Marine, National Marine Center (NMC), based in St. Augustine, FL, to support and assist the NOAA line offices with managing and maintaining their small boats. NMC provides technical, logistical, and maintenance support for small boats. This MOU provides NOAA an efficient procedure to ensure the small boats are supported and maintained to the highest quality of standards.

Internally, the NOAA Small Boat Program and NOAA Diving Program have been working to better coordinate the overlap in responsibilities and operations. Those efforts will provide a comprehensive approach to requirements and a coordinated response to field issues. The SBP has new initiatives to engage with NOAA groups managing the technologies deployed from small boats, such as autonomous vehicles and drones. This proactive engagement will better support the science objectives and allow for strategic development of training and infrastructure.

There are many successful regional efforts based on consolidation or sharing NOAA small boat resources and infrastructure. That approach has been fully developed in the Great Lakes where OAR maintains a fleet of boats to serve the needs of OAR, NWS and NOS managers. This arrangement was piloted with the Thunder Bay National Marine Sanctuary and has been expanded to include other NOS programs and offices. This approach was partly borne out of necessity but has proven to be a model of efficiency and supports a center of marine operations expertise. Researchers have realized more platform options, boat availability and surge capacity.

LOOKING AHEAD

Goals and Priorities for 2019 and Beyond

Every two years, the Small Boat Safety Board holds a Small Boat Summit, for all Line Office Small Boat Officers, Small Boat Program staff, Vessel Program Coordinators and Vessel Operations Coordinators (VOC). The last summit was held in Boulder, CO, in September 2017 and covered the launch of NOAA Small Boat Safety and Procedure Manual Edition 4. The 2019 Small Boat Summit will be held in St. Petersburg, FL November 5-7, 2019.

There has been a continuous advancement in new technologies and resources for small boat operations and that will be the focus of the 2019 Small Boat Summit. Some of the topics that will be covered are the Vessel Operations Program which will be the required float plan system, new electronic navigation policy, new training resources, new small boats, and highlighting emerging science technologies, specifically unmanned systems. The SBP personnel and SBSB members will discuss the changes in small boat procedures and policies, answer questions, and assure VOCs have a clear understanding of these changes and how to communicate them to boat operators in the field.

The Small Boat Summit will have multiple opportunities for participants to learn and share, these include the following: presentations and discussions by NOAA personnel, outside agency subject matter experts and industry specialists; breakout sessions by varying topics; brainstorming forums; and networking opportunities. These will create and promote open communication between all levels and line offices and enhance safe small boat operations.

ACRONYMS

AOML - Atlantic Oceanographic and Meteorological Laboratory
ATON - Aid to Navigation
CO-OPS - Center for Operational Oceanographic Products and Services
DOI - Department of Interior
FKNMS - Florida Keys National Marine Sanctuary
FY - Fiscal Year
GLERL - Great Lakes Environmental Research Laboratory
LOSBO - Line Office Small Boat Officer
MOCC - Motorboat Operator Certification Course
MOU - Memorandum of Understanding
NAO - NOAA Administrative Order
NDBC - National Data Buoy Center
NMFS - National Marine Fisheries Service
NMC - Office of Air and Marine, National Marine Center
NOAA - National Oceanic Atmospheric Administration
NOS - National Ocean Service
NWS - National Weather Service
OAR - Oceanic and Atmospheric Research
OCS - Office of Coast Survey
OLE - Office of Law Enforcement
OMAO - Office of Marine and Aviation Operations
ONMS - Office of National Marine Sanctuaries
PMEL - Pacific Marine Environmental Laboratory
PORTS - Physical Oceanographic Real Time System
RHIB - Ridged Hull Inflatable Boat
ROV - Remotely Operated Vehicle
RV - Research Vessel
SECO - Safety and Environmental Compliance Office
SBP - Small Boat Program
SBSB - Small Boat Safety Board
SBSPM - Small Boat Standards and Procedures Manual
SRV - Small Research Vessel
USCG - United States Coast Guard
USFWS - US Fish and Wildlife Service
VOC - Vessel Operations Coordinator
VOP - Vessel Operations Program
VPC - Vessel Program Coordinator

NOAA Small Boat Program

https://www.omao.noaa.gov/learn/small-boat-program