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Project Instructions

Date Submitted	August 13, 2025
Platform	NOAA Ship *Okeanos Explorer*
Project Number	EX2506
Project Title	Beyond the Blue: Palau Mapping 2
Project Dates	August 18, 2025 - September 11, 2025

Prepared by _____ Dated _____
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1. Overview

1.1 Project Purpose

This project is part of a multi-year campaign with multiple NOAA and interagency partners to improve understanding of the diversity and distribution of deepwater habitats throughout the remote Pacific. The work will expand understanding by the science community and contribute to the identification of vulnerable marine ecosystems and underwater cultural heritage sites of importance to multiple Line Offices within NOAA, local stakeholders, and regional management councils as well as inform modeling efforts associated with identifying critical mineral areas. This expedition will provide new baseline information on habitat distributions and functioning in the Pacific Island region, including characterization, extent, abundance, and relative importance/sensitivity of deep sea habitats. The study will also assess connections between benthic productivity and productivity in the overlying water column to develop a better understanding of whole ecosystem functioning and the overall role of unique benthic habitats. Results will be compared to data collected in other areas across the region and be used to close several large data gaps identified by the science community and resources managers. All data collected will support the National Strategy for Mapping, Exploring, and Characterizing the US EEZ, Seabed 2030, the Deep Sea Coral Research and Technology Program's upcoming regional initiative in the Pacific Islands, as well as other ongoing partner initiatives.

This expedition will work with the Republic of Palau to map critical areas of Palau’s National Marine Sanctuary, contributing to scientific understanding of the region, closing data gaps, and providing baseline information for future management decisions.

1.2 Project Impact

EX2506 will conduct mapping and CTD operations in the pursuit of ocean exploration and will provide valuable baseline scientific data for scientists and managers, and may help inform future exploration and management decision-making in the region.

This project is part of a multi-year campaign (Beyond the Blue: *Illuminating the Pacific*) with multiple NOAA and interagency partners to improve understanding of the diversity and distribution of deepwater habitats throughout the remote Pacific Islands. This work will improve understanding of and contribute to the identification of vulnerable marine ecosystems and underwater cultural heritage sites of importance to multiple Line Offices within NOAA, local stakeholders, and regional management councils as well as inform modeling efforts associated with critical mineral areas. This expedition will conduct mapping and CTD operations to provide new baseline information on habitat distributions in the Pacific Islands region, including characterization, extent, abundance, and relative importance/sensitivity of deep-sea habitats. Outcomes from this expedition will be compared to data collected in other areas across the region, and will be used to close data gaps identified by the science community and resource managers. All data

will support the National Strategy for Mapping, Exploring, and Characterizing the U.S. EEZ (NOMEC), Seabed 2030, the Deep Sea Coral Research and Technology Program's upcoming regional initiative in the Pacific Islands, as well as other ongoing partner initiatives.

All exploration work completed during the 2025 field season will directly support and implement the international Seabed 2030 initiative and the U.S. National Ocean Mapping, Exploration, and Characterization (NOMEC) Strategy. The Seabed 2030 project aims to bring together all available bathymetric data to produce the definitive map of the world ocean floor by 2030 and make it available to all. The NOMEC Strategy calls for complete mapping of U.S. waters deeper than 40 meters by 2030, exploring and characterizing priority areas of the U.S. Exclusive Economic Zone, and developing and operationalizing emerging mapping and exploration technologies. The FY25 expeditions on NOAA Ship Okeanos Explorer have been planned to maximize contributions to these key initiatives in both U.S. and international waters of the Pacific Ocean. NOAA is required under the MSA to map and conduct research on deep-sea coral habitats. These habitats represent high priorities for the NMFS Deep Sea Coral Research Program, NMFS Pacific Island Fisheries Science Center, and NOS Office of National Marine Sanctuaries. These expeditions will provide new baseline information on habitat distributions and functioning in the Pacific Island region, including characterization, extent, abundance, and relative importance/sensitivity of deep-sea habitats. Results will be compared to data collected in other areas across the region and will be used to close several large data gaps identified by the science community and resource managers. All data collected support the National Strategy for Mapping, Exploring, and Characterizing the US EEZ, Seabed 2030, the Deep Sea Coral Research, and Technology Program's upcoming regional initiative in the Pacific Islands, as well as other ongoing partner initiatives. NOAA ocean exploration will use the unique telepresence capabilities of Okeanos Explorer to allow real-time participation of a greater number of scientists ashore than normally provided onboard a vessel, providing real-time access to data and products without proprietary rights, and engaging classrooms, news media, and the general public in live interactions with the ship. Having access to this platform is critical to the program's continued success and goals to learn more about unknown and poorly understood areas of the world's oceans.

1.3 Project Performance Metrics

Project performance metrics include the square kilometers of seafloor mapped and CTD casts conducted, as deemed necessary by on-board science priorities, time availability, and weather conditions.

(1) Acoustic/Echo Sampling

Acoustic Doppler Current Profiler (ADCP)	% Project Time:	As needed.
Multibeam Echo Sounder Square Miles	# Needed:	40,000 sq mi

(2) Chemical/Oceanographic Sampling

Expendable Bathythermograph (XBT)	# Needed:	At least 1 per 6 hours of acoustic mapping operations
Thermosalinograph (TSG)	# Needed:	Continuously whenever the ship is underway.
CTD	# Needed	At least 4 required, up to 10 requested as conditions permit

(6) Other Mission Sampling

eDNA	# Needed	At least 72-168. The number and depth will vary based on the number of CTD casts performed and desired sample replicates

1.4 Days at Sea (DAS)

25

1.5 Participating Institutions

(A) National Oceanic and Atmospheric Administration (NOAA), Office of Ocean Exploration and Research — 1315 East-West Highway, Silver Spring, MD 20910 USA

(B) NOAA, National Centers for Environmental Information (NCEI) — Stennis Space Center, MS 39529 USA

(C) University Corporation for Atmospheric Research (UCAR) Programs for Advancement of Earth System Science — P.O. Box 3000, Boulder, CO 80307 USA

(D) Palau International Coral Reef Center- P.O. Box 7086 Koror, Republic of Palau 96940

(E) Ocean Exploration Cooperative Institute - University of Rhode Island, Kingston, RI 02881, USA

1.6 Licenses and Permits

This project will be conducted in accordance with NOAA Ocean Exploration's Best Management Practices (BMPs), the Essential Fish Habitat (EFH) consultation dated April 1, 2024, and the EFH Supplemental dated August 7, 2024. It is also covered under the Endangered Species Act (ESA) Programmatic Letter of Concurrence issued on March 14, 2022, with subsequent revisions dated May 4, 2023. An updated ESA Concurrence Letter and Conference for the Reinitiation of the Programmatic Consultation reflecting revised and updated Project Design Criteria was issued on March 25, 2025. In addition, a Categorical Exclusion (CE) under the National Environmental Policy Act (NEPA) is currently under development for the project. Copies of all relevant permits are provided in Appendix A and will be included in the final Expedition Report.

1.7 Foreign Research Clearances

This project involves Marine Scientific Research and U.S. Department of State (DOS) Marine Scientific Research data (MSR) clearances in waters under the jurisdiction of Palau and Federated States of Micronesia. Diplomatic clearance has been requested and received, and is attached in Appendix E.

1.8 Personnel/Science Party

(A) OER Operational Lead

Name & Title:	Treyson Gillespie
Laboratory/Office:	NOAA Ocean Exploration/University Corporation for Atmospheric Research
Phone Number:	202-650-7319
Email Address:	Treyson.Gillespie@noaa.gov

(B) Additional Contacts

Name & Title:	Kasey Cantwell*, Operations Chief
Laboratory/Office:	NOAA Ocean Exploration
Phone Number:	301 717 7776
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Name & Title:	Rachel Medley, Division Chief
Laboratory/Office:	NOAA Ocean Exploration
Phone Number:	301-789-3075
Email Address:	Rachel.Medley@noaa.gov

* Kasey Cantwell will be providing federal oversight to this project from shore as NOAA Ocean Exploration will not have a federal Expedition Coordinator sailing during this project. Trey will serve as the OER operational lead onboard the ship and rely on the shore side support for all inherently federal decisions. Mashkoor Malik is also available to assist and is on call as needed.

Name (Last, First)	Title	Date Aboard	Date Disembark	Gender	Affiliation	Nationality
Copeland, Adrienne	EK Sonar Technician	8/16	9/12	F	OER	USA
Coulson, Anna	Mapping contractor	8/16	9/12	F	OER/UCAR	USA
Doros, Brian	OECI Data Team	Previously Sailing	Continuing to Sail	M	OECI	USA
Gillespie, Treyson	Operations Lead	8/16	9/13	M	OER	USA
O'Donnell, Garret	Knauss Fellow	8/17	9/12	M	OER	USA
Spencer, Gretchen	Operations in Training	8/17	9/12	F	OER	USA
Wright, Chris	OECI Network Team	8/16	Continuing to Sail	M	OECI	USA

1.9 Project Classification

(A) Supplementary ("Piggyback") Projects
None

(B) NOAA Fleet Ancillary Projects
None

2. Operations

2.1 Project Area

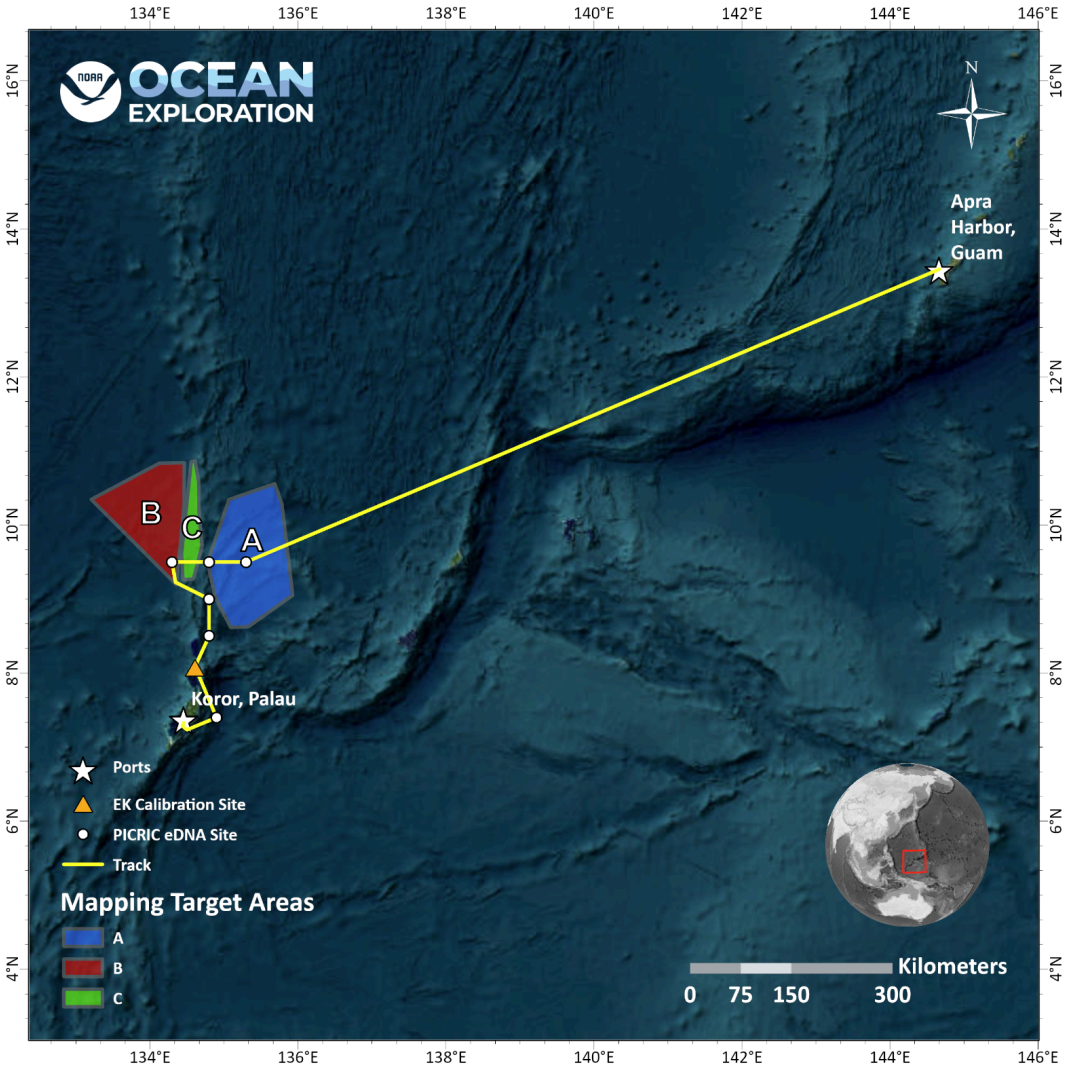
This project will occur within the waters of the Republic of Palau and include transit through the waters of Federated States of Micronesia, en route to port call in Guam.

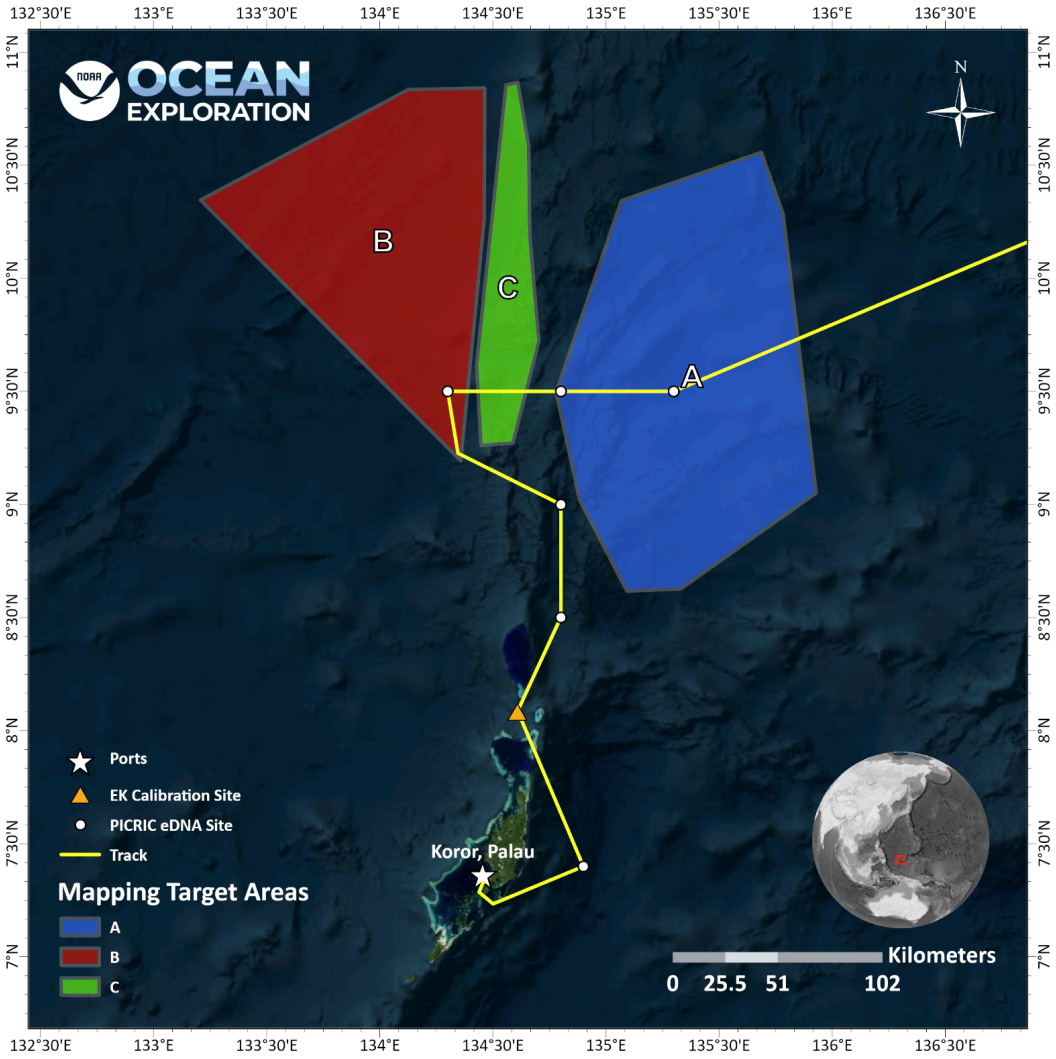
(A) Desired Operational Waters
Ocean. Primary operations will take place within the Palauan EEZ.

(B) Way Point/Station List

Station	Latitude (E)	Longitude (N)
EK calibration (approximate)	134° 39.00'	8° 5.00'
CTD1	134° 54.00'	7° 24.00'
CTD2	135° 24.00'	7° 24.00'
CTD3	134° 48.00'	8° 30.00'
CTD4	134° 48.00'	9° 0.00'
CTD5	135° 18.00'	9° 30.00'
CTD6	134° 48.00'	9° 30.00'
CTD7	134° 18.00'	9° 30.00'

(C) Project Area Shapefile(s)





2.2 Project Itinerary

(A) Starting Port: Koror, Palau

(B) Number (#) of Staging Days: 2

(C) Itinerary Information: Below

(D) Intermediate Port Call(s): N/A

(E) Foreign Port Call(s): Koror, Palau

(F) Ending Port: Apra Harbor, Guam

(G) Number (#) of Destaging Days: 2

Date	DAS#	Operations	Notes
8/16	-	● Mobilization ● Science Crew Move On ● Vessel Familiarization	
8/17	-	● Mobilization ● Science Crew Move On ● Ping Sonars	
8/18	1	● Depart Koror, Palau ● Transit to nearshore eDNA CTD Locations ● eDNA operations and mapping	
8/19	2	● ORT (4 hour block for stationary activities) ● Smallboat transfer to retrieve Chief Steward ● Potential for shallow CTD cast, depending on how small boat operations go ● Opportunistic mapping overnight	Conditions dependent for ORT operations
8/20	3	● CTD cast if not completed during the previous day ● Potential for EK calibrations if conditions are favorable ● Transit mapping with opportunistic gap filling. ● Transit to EK calibration site	Conditions dependent
8/21	4	● EK Calibrations ● Shallow CTD cast to support calibrations ● EK optimized configuration testing ● Opportunistic eDNA Operations and Mapping	Conditions dependent
8/22	5	● EK Calibrations (if not completed yet) ● Potential shallow CTD cast to support calibrations ● Opportunistic eDNA Operations ● EK optimized configuration testing ● Overnight Mapping and transit north	Conditions dependent
8/23	6	● EK Calibrations (if not completed yet) ● Potential shallow CTD cast to support calibrations ● Opportunistic eDNA Operations ● EK optimized configuration testing ● Transit to northern CTD and Mapping polygons	Conditions dependent
8/24	7	● Focused mapping operations ● Potential for CTD cast and eDNA operations	Conditions dependent
8/25	8	● Focused mapping operations ● Potential for CTD cast and eDNA operations	Conditions dependent

8/26	9	• Focused mapping operations • Potential for CTD cast and eDNA operations	Conditions dependent
8/27	10	• Focused mapping operations • Potential for CTD cast and eDNA operations	Conditions dependent
8/28	11	• Focused mapping operations • Potential for CTD cast and eDNA operations • EK optimized configuration testing	Conditions dependent
8/29	12	• Focused mapping operations • Potential for CTD cast and eDNA operations	Conditions dependent
8/30	13	• Focused mapping operations • Potential for CTD cast and eDNA operations	Conditions dependent
8/31	14	• Focused mapping operations • Potential for CTD cast and eDNA operations	Conditions dependent
9/1	15	• Focused mapping operations • Potential for CTD cast and eDNA operations	Conditions dependent
9/2	16	• Focused mapping operations • Potential for CTD cast and eDNA operations	Conditions dependent
9/3	17	• Focused mapping operations • Potential for CTD cast and eDNA operations	Conditions dependent
9/4	18	• Focused mapping operations • Potential for CTD cast and eDNA operations	Conditions dependent
9/5	19	• Focused mapping operations • Potential for CTD cast and eDNA operations • EK optimized configuration testing	Conditions dependent
9/6	20	• Focused mapping operations • Potential for CTD cast and eDNA operations • EK optimized configuration testing	Conditions dependent
9/7	21	• Focused mapping operations • Potential for CTD cast and eDNA operations	Conditions dependent
9/8	22	• Opportunistic Mapping prior to transit north	
9/9	23	• Transit Mapping • ORT operations (mobile operations)	
9/10	24	• Transit Mapping • EK optimized configuration testing	
9/11	25	• Arrival in Apra Harbor, Guam	
9/12	-	• Demobilization • Request for small ship tour for Garret O’Donnell’s family in Guam	

2.3 Staging and Destaging

No significant support is expected outside of permissions from port for a sonar ping test.

2.4 Operations To Be Conducted

(A) Calibrations and testing of acoustic mapping equipment (EK80s)

(B) CTD casts

(C) XBT launches via the autolauncher and the handhelds

(D) Exploratory acoustic mapping operations in focused polygons and during transits

(E) Sun photometer measurements.

2.5 Dive Operations

Science dives are not planned for this project. The ship may complete husbandry dives as needed or as part of ORT.

2.6 Small Boat Operations

Small boat operations are only planned for ORT operations and to retrieve/ bring aboard the Chief Steward on 8/19.

2.7 Uncrewed Systems Operations

Uncrewed systems operations are not planned for this project.

2.8 Applicable Restrictions

(A) Conditions That Preclude Normal Operations

Poor weather conditions, mapping systems, and CTD equipment failures, foreign vessel activity, or other unforeseen software or mechanical failures may preclude operations. Contingency plans may be identified if original locations are inaccessible, and decisions made in conjunction with the ship as needed.

2.9 Energy Efficiency

Transit and mapping speeds will be discussed by the Mission team, Wardroom, and Department Heads to determine potential efficiencies, with prioritization given to eDNA and mapping operations.

3. Equipment

3.1 Platform Capabilities

Itemized list of required equipment and capabilities provided by the ship. Use the following headers to categorize the list.

(A) Vessel Core Systems: Functioning/seaworthy Safety of Life at Sea (SOLAS) approved fast rescue boat, functioning/seaworthy work boat to support personnel transfers, Electronic Chart Display and Information System (ECDIS), Kongsberg dynamic positioning system, meteorological and weather sensor package, three voice over internet protocol (VOIP) telephone lines.

(B) Labs/Interior Spaces: Wet Lab and ROV workshop for the staging of equipment, Dry Lab, Wet Lab and Mission Control Room for mission team workspaces, Server Room for mission network and equipment. ROV Hangar, Workshop, and Winch Room for ROV operations and maintenance (potential to conduct ROV evaluation alongside and storage of equipment/systems).

(C) Exterior Spaces: CTD deck, fantail, boat deck, space available for HAZMAT storage available for ethanol, space available for conex box that hosts ROV spares and equipment

(D) Handling And Over-The-Side Deployment/Retrieval: J-Frame for deployment/recovery of CTDs, hand-deployment of CastAway CTD, and potential hand-deployment of EK calibration gear (if needed).

(E) Acoustic Suite: Kongsberg EM 304 MKII multibeam echosounder, Kongsberg Simrad EK80 split-beam sonars: wide band transceivers (18, 38, 70, 120, ~~200*~~ kHz), Knudsen Chirp 3260 sub-bottom profiler, Teledyne RDI Workhorse Mariner ADCP (300 kHz), ~~Teledyne RDI Ocean Surveyor ADCP (38 kHz)~~.

(F) Other: Lockheed Martin Sippican XBT Mark21 system, Sea-Bird SBE 9-11Plus CTD and deck box, Sea-Bird SBE 32 carousel and 12 10 L Niskin Bottles, Sea-Bird SBE 43 Dissolved Oxygen sensor, Sea-Bird SBE 45 MicroTSG Thermosalinograph, Sea-Bird SBE 38 Temperature Probe, ECO-FLNTU-RTD Fluorescence/Turbidity sensor, PMEL Oxidation-Reduction Potential (ORP) sensor, PMEL Altimeter sensor, Scientific Computing System (SCS), Scientific Seawater System, HYPACK software license.

*EK80 200 kHz and 38 kHz ADCP are not functional at this time.

3.2 Scientific Capabilities

Itemized list/table of equipment and capabilities provided by scientists. All Standard Operating Procedure(s) must be provided for equipment and capabilities operated by the ship.

Equipment Name	Category	Type
EK80 38 kHz WBT	Mapping	Hardware
EK80 70 kHz WBT	Mapping	Hardware
EK60 18 kHz GPT	Mapping	Hardware

Konsberg Synchronization Unit	Mapping	Hardware
Castaway CTD	Mapping	Hardware
AOML XBT Autolauncher	Mapping	Hardware
EK Calibration Spheres	Mapping	Hardware
EK Calibration Gear	Mapping	Hardware
Marinestar Correctors (POS MV)	Mapping / ROV	Service
Marinestar Correctors (Seapath)	Mapping / ROV	Service
Sippican Deep Blue XBTs	Mapping	Consumable
Kongsberg Acquisition Computer	Mapping	Hardware
EK60/80 Acquisition Computer	Mapping	Hardware
Knudsen 3260 Acquisition Computer	Mapping	Hardware
UHDAS Computer and CTD Acquisition Computer	Mapping	Hardware
QPS Software Suite	Mapping	Software
NCEI Cruise Information Management System	Mapping / ROV	Software
Microtops II Ozone Monitor Sun Photometer and Handheld GPS required for NASA Marine Aerosols Network Supplementary Project	Other	Hardware
Sontek CastAway-CTD	Mapping / ROV	Hardware
Mission-Provided VSAT High-Speed Link (15 Mbps Ship-to-Shore; 5 Mbps Shore-to-Ship)	Telepresence	Hardware
Mission Starlink Terminals	Telepresence	Hardware
Exploration Operations Networking Infrastructure	Telepresence	Hardware / Software
Telepresence System	Telepresence	Hardware / Software
Mission VoIP System	Telepresence	Hardware

Mission-Provided Data Storage	Data Management	Hardware

4. Hazardous Materials

4.1 Policy and Compliance

Hazardous Materials are not being brought aboard the ship for this project.

4.2 Inventory

Common Name of Material	Quantity	Notes	Trained Individual	Spill Control
Ethanol (95%)	454 L	Stored in shed (Container side = 55 gallon drum)	Treyson Gillespie	Univ.
Formaldehyde (37.5%)	8 L	Stored in fume hood (4 L container)	Treyson Gillespie	HAZ.
Bleach	8 L	Stored in fume hood (4 L container)	Treyson Gillespie	Univ.
Mercury	150 ml	Stored in fume hood	Treyson Gillespie	Univ.

4.3 Safety and Spill Response

Product Name	Quantity	Chemicals it is effective against	Amount it can clean up
PIG® Spill Kit in 95-Gallon High-Visibility Container	1	Oils, coolants, solvents, water, universal	60 gal
PIG® HazMat Spill Kit in a Clear-Top Duffel Bag	1	Acids, bases, unknowns	8 gal
Oil-only absorbent mat	300	Oil	28 oz/mat

4.4 Radioactive Materials and X-ray Generating Devices

No Radioactive Isotopes or X-ray Generating Devices are planned for this project.

4.5 Lithium Batteries

Laptops and cell phones brought on board will contain Lithium-Ion batteries. These batteries are enclosed within each unit and do not present any risks or disposal hazards. These items will frequently be on a person (as is the case for cell phones) or in an occupied space (e.g. dry lab, control room, or state room at night) and may move around the ship to various locations, depending on where the owners are located.

Additionally, the ROVs and their component parts have enclosed lithium batteries. These are currently located on the vehicles (ROV hangar and fantail), in the ROV pit, and in the connex box. We will work with the ship to ensure compliance with OMAO Procedure 1102-04.

5. Disposition of Data and Reports

Disposition of data gathered aboard NOAA ships must conform to all Federal, Agency, Chief Scientist's LO, and OMAO data governance directives, policies and stewardship (Appendices B and C). Systems that produce data continually, periodically, and during specific operations described in Section 2.4, and equipment listed in Sections 3.1 and 3.2, will have accompanying entries in the Project Data Management plan. The data will be classified as either OMAO data or Program Data and roles and responsibilities for acquisition, stewardship, and submission to archive will be determined during pre-project communications and meetings. OMAO expects the Chief Scientist, Program, and Lab Directors to abide by their LO Data Management Plan and procedural directive. By completing this section all parties agree to OMAO Policy 1102-38 Shipboard Data Acquisition and Stewardship.

5.1 Data Acquisitions Plan

The Data Management Plan (DMP) is completed following a program specific template.

Appendix A Categorical Exclusions

Categorical Exclusion (CE) Evaluation Worksheet

Project Identifier: EX2506

Date Review Completed: 6/24/2025

OAR NEPA Project Lead: Amanda Maxon, Environmental Compliance Specialist, Contractor, NOAA Office of Ocean Exploration and Research

OAR Functional Area: OER

Worksheet File Name: 2025-06-OER-E3-EX2506

Step 1. CE applicability

1. **Is this federal financial assistance, including via grants, cooperative agreements, loans, loan guarantees, interest subsidies, insurance, food commodities, direct appropriations, and transfers of property in place of money?**
   no

2. **What is the proposed federal action?**
   The proposed federal action is for NOAA's Office of Ocean Exploration and Research (OER) to conduct the EX2506 expedition, Beyond the Blue: Palau Mapping 2, focused on deepwater mapping (depths >200 meters) in the Exclusive Economic Zone (EEZ) of Palau, Guam, and the nearby high seas. Contingency mapping may be conducted within the EEZ of the Federated States of Micronesia utilizing NOAA Ship Okeanos Explorer's deepwater sonar systems in case of unforeseen events such as weather.

   The expedition is scheduled to begin on or around August 18, 2025, in Koror, Palau, and conclude on or around September 11, 2025, in Guam. The exact start and end dates may vary by a few days to several weeks depending on weather and other logistical considerations. The expedition will span approximately 24 days at sea and mapping operations will be conducted continuously 24 hours per day.

   Planned and proposed operations include the following:

1

•Deepwater mapping using Okeanos Explorer's suite of sonar systems, including the Kongsberg EM 304 multibeam sonar, EK60/EK80 split-beam sonars, Knudsen 3260 Chirp sub-bottom profiler, and Teledyne acoustic doppler current profilers;

•Deployment of expendable bathythermographs (XBTs) in support of sonar mapping;

•Conductivity, temperature, and depth (CTD) casts to assess oceanographic conditions and validate system performance;

•Continuous ship-to-shore communications via high-bandwidth satellite telepresence, enabling real-time shore-based participation;

•Styrofoam cup shrinking via pressure exposure using the CTD rosette system;

•Water samples collected via the CTD rosette system.

This expedition will serve as a mapping expedition to validate the performance of newly integrated mission equipment, support personnel training, mapping, eDNA and CTD operations, and to map the marine regions of Palau, Guam, and surrounding high seas. Water samples may be collected via CTD casts for eDNA analysis in partnership with the Palau International Coral Reef Center (PICRC), Palau National Marine Sanctuary, and within Guam. Although the collection of other biological samples is not planned, any organism that inadvertently attaches to or is caught in the CTD system will be preserved and made publicly available for research. Any data acquired will be made publicly available. We intend to operate with full transparency and close collaboration with PICRC while operating within Palau's marine region.

EX2506 will also gather exploratory baseline data to characterize deep-sea habitats and support regional science and management needs. Mapping operations will address known data gaps and inform ongoing initiatives including the National Strategy for Mapping, Exploring, and Characterizing the U.S. EEZ (NOMEC Strategy), the Seabed 2030 project, the Deep-Sea Coral Research and Technology Program's Pacific Islands initiative, and U.S. Department of State regional priorities.

Transit routes will be strategically selected to maximize mapping coverage in support of Seabed 2030 and the NOMEC Strategy which seek to create a complete map of the global ocean floor by 2030. The actions under this NEPA CE have independent utility and have not been inappropriately segmented from a larger federal action for review.

3. **Which class of CE in Appendix E of the NAO 216-6A Companion Manual is applicable to this action and why?**
   a. E3: Activities to collect aquatic, terrestrial, and atmospheric data in a non-destructive manner.

b. The topical scope for this action is consistent with the CE number E3 in Appendix E of the Companion Manual to NOAA Administrative Order (NAO) 216-6A: to collect aquatic, terrestrial, and atmospheric data in a non-destructive manner. The expedition will utilize active acoustic sound sources, expendable sensors, cabled scientific instruments, and a limited number of physical samples to collect baseline information from unexplored deep-water areas (>200 meters) within the EEZ of Palau, Guam, and nearby high seas. Contingency mapping may be conducted within the EEZ of the Federated States of Micronesia using NOAA Ship Okeanos Explorer's deepwater sonar systems in the event of unforeseen circumstances such as inclement weather. The expedition may include calibration of mapping sonars to collect aquatic, terrestrial, and atmospheric data in a non-destructive manner, documenting visual, physical, chemical, and biological characteristics of the environment. Water samples may be collected via CTD cast for eDNA analysis in partnership with PICRC and Palau National Marine Sanctuary. Although no other samples are planned, if an animal attaches to or is accidentally caught in the CTD system, we will preserve it and make it publicly accessible as there are few specimens from this part of the world. Any data acquired will be made publicly available to Palau. We intend to operate with full transparency and close collaboration with PICRC. The expedition will use CTD instruments, deploy XBTs, and conduct cup-shrinking activities for scientific outreach. The deployment and retrieval of these technologies will follow industry standards and all applicable provisions under the Endangered Species Act (ESA), Marine Mammal Protection Act (MMPA), and Magnuson-Stevens Fishery Conservation and Management Act (MSA). Local and regional regulatory requirements will also be observed. All activities are temporary, cause no permanent environmental changes, have negligible impacts, and follow best practices.

Step 2. Extraordinary Circumstances Consideration

4. Would the action result in adverse effects on human health or safety that are not negligible?

The proposed activities aboard NOAA Ship Okeanos Explorer will primarily take place in remote deep-sea regions (depths >200 meters) offshore of Palau and Guam's EEZ, within adjacent high seas, and extending into contingency areas located in the EEZ of the Federated States of Micronesia. Operations are focused on underwater mapping and oceanographic data collection, with no human presence in the operational areas except for personnel aboard the vessel. The vessel transits through different depths as it moves from the ports of call to the areas of activities in deeper waters. These actions are not expected to affect human health or safety.

5. **Would the action result in adverse effects on an area with unique environmental characteristics that are not negligible?**

While operations will occur within the EEZ of Palau and Guam and the contingency EEZ of the Federated States of Micronesia, any effects will be negligible. Acoustic mapping, CTD operations, and XBTs deployments would not cause any permanent or more than negligible impacts on the seabed or within the water column. XBTs will likely be deployed once every three to six hours to ensure accurate bathymetic data collection. The very fine copper wire connecting the XBT probe to the instrument onboard the ship is extremely easy to break and does not present an entanglement risk to protected species in the areas of operation. Operations are well-documented and follow accepted best management practices for all activities conducted aboard the vessel, ensuring that any impacts remain negligible and the level of impact is considered negligible and unlikely to be detectable. The expedition activities are developed to meet the objectives of the onboard mapping systems. Additionally, project plans are reviewed before any actions are taken in the area of interest to determine the potential for adverse effects on the area.

6. **Would the action result in adverse effects on species or habitats protected by the ESA, MMPA, MSA, NMSA, or MBTA that are not negligible?**

The activities are not likely to have a negative effect on species or habitats protected by the laws and regulations listed above. As outlined in response to Question 11, NOAA OER has completed consultations and evaluations in accordance with the MMPA, ESA, and MSA. These reviews concluded that the federal actions proposed by OER will not result in violations of any Federal, State, or local environmental laws or requirements. Operations conducted by NOAA Ship Okeanos Explorer will abide by the Best Management Practices (BMPs) and Mitigation Measures developed in coordination with various federal and regulatory agencies to ensure that operations in these sectors would not result in any activities having adverse effects on the species or habitats protected under the above regulations and laws. Before each expedition, expedition coordinators and vessel crews receive BMPs and mitigation guidance to ensure the activities follow the actions developed to minimize or limit adverse effects on species or habitats in the proposed action area.

7. **Would the action result in the potential to generate, use, store, transport, or dispose of hazardous or toxic substances, in a manner that may have a significant effect on the environment?**

The expedition operations are designed to follow FEC 07 Hazardous Materials and Hazardous Waste Management Requirements for Visiting Scientific Parties (or the OMAO procedure that

supersedes it) to ensure generation, use, storage, transport, and disposal of such substances will not result in significant impacts.

8. **Would the action result in adverse effects on properties listed or eligible for listing on the National Register of Historic Places authorized by the National Historic Preservation Act of 1966, National Historic Landmarks designated by the Secretary of the Interior, or National Monuments designated through the Antiquities Act of 1906; Federally recognized Tribal and Native Alaskan lands, cultural or natural resources, or religious or cultural sites that cannot be resolved through applicable regulatory processes?**

   The proposed action will not cause direct or indirect adverse effects, as no activities will occur near any properties listed or eligible for the National Register of Historic Places, or on Tribal lands, cultural or religious sites.

9. **Would the action contribute to the introduction, continued existence, or spread of noxious weeds or nonnative invasive species known to occur in the area or actions that may promote the introduction, growth, or expansion of the range of the species?**

   This circumstance is not applicable. EO 12898 was rescinded.

10. **Would the action result in a potential violation of Federal, State, or local law or requirements imposed for protection of the environment?**

    Based on prior operations and established mitigation measures, this action is unlikely to contribute to the introduction, continued presence, or spread of noxious weeds or non-native invasive species in the region. During EX2506, NOAA Ship Okeanos Explorer will only make landfall in Koror, Palau, and Guam and will operate primarily in offshore deepwater environments. The ship and OER mission teams comply with all applicable local and federal regulations regarding the prevention or spread of invasive species.

    To minimize the risk of biological transfer between sites, all overboard equipment will be thoroughly rinsed with fresh water and completely air dried after each deployment. The Engineering Department aboard NOAA Ship Okeanos Explorer attends yearly Ballast Management Training in accordance with NOAA Form 57-07-13 NPDES VGP Annual Inspection and Report to prevent the introduction of invasive species.

11. Would the action result in highly controversial environmental effects?

OER has taken measures to ensure that any effects on species or habitats protected by the ESA, MMPA, and MSA meet the definition of negligible. The proposed actions will not result in any Federal, State, or local law violations or requirements imposed for protection of the environment.

Under the ESA, OER received a Programmatic Letter of Concurrence and Project Design Criteria (NMFS No: OPR-2021-03453) from the NOAA Fisheries ESA Interagency Cooperation Division on March 14, 2022. This letter concurs with OER's determination that the proposed action "may affect, but is not likely to adversely affect" ESA-listed species or their designated critical habitats. On March 25, 2025, NOAA's Office of Protected Resources reinitiated consultation to address new technologies, species, and geographic areas not covered under the initial Programmatic Letter of Concurrence (NMFS No: OPR 2021-03453) or amendments. NMFS concurs with OER that the effects of OER's changes in marine operations and action area under the recent reinitiation are not likely to adversely affect whales, seals and sea lions, and invertebrates. NMFS also concurs with OER that the effects of OER's changes in marine operations and action area considered in the reinitiation are not likely to adversely affect the following designated or proposed critical habitat: whales, seals and sea lions, sea turtles. Conclusions for listed and proposed species and designated and proposed critical habitat included in the 2022 consultation and 2023 amendment have not changed. The ESA and its Project Design Criteria will be provided in the EX2506 expedition report.

In accordance with the MSA, OER requested an Essential Fish Habitat (EFH) consultation under Section 304. The EFH Letter of Concurrence was received on April 1, 2024 from the Assistant Regional Administrator for the NOAA Office of Habitat Conservation Division stating that the FY24 through FY26 expeditions will not adversely impact EFH critical habitats for species that reside in those areas. This letter will additionally be included in the EX2506 expedition report.

12. Does the action have the potential to establish a precedent for future action or an action that represents a decision in principle about future actions with potentially significant environmental effects?

No, the proposed mapping and oceanographic data collection activities are routine, non-invasive and/or impacts are considerable negligible in the long term. These activities are routinely and safely conducted by the scientific and ocean management communities following established environmental safeguards. Given the project's limited scope, the activities are not expected to result in lasting or controversial environmental effects. Any effects would be small and

considered negligible as the vessel transits through the area of interest.

13. Would the action result in environmental effects that are uncertain, unique, or unknown?

The decision to proceed with this action will not set a precedent for future actions or represent a decision in principle that could lead to actions with potentially significant environmental effects. Each expedition conducted by NOAA Ship Okeanos Explorer is considered independent, with no direct connection to future federal or non-federal actions. This action will not result in growth-inducing changes, compel future activities that may have environmental impacts, or limit options for future actions. Therefore, it is unlikely to create a precedent that would affect future environmental assessments or decisions.

14. Does the action have the potential for significant cumulative impacts when the proposed action is combined with other past, present and reasonably foreseeable future actions, even though the impacts of the proposed action may not be significant by themselves?

The techniques have been used in prior OER expeditions for over 15 years without causing significant effects. The potential environmental effects of these methods and materials are well-understood and have been thoroughly assessed to ensure that they do not result in uncertain, unique, or unknown impacts. Any effects associated with the proposed activities are predictable and based on established scientific knowledge and previous monitoring of similar activities.

Additionally, mitigation measures are incorporated into the action and have been demonstrably effective in minimizing potential environmental impacts. As such, the likelihood of unforeseen or significant environmental effects is minimal.

CE Determination

☒I have determined that a Categorical Exclusion is the appropriate level of NEPA analysis for this action and that no extraordinary circumstances exist that would require preparation of an environmental assessment or environmental impact statement.

☐I have determined that an environmental assessment or environmental impact statement is required for this action.

OAR Decision Maker's Name: Kristen Crossett CROSSETT.KRISTEN.MAUREEN O'GRADY.1365889615 Digitally signed by CROSSETT.KRISTEN.MAUREEN O'GRADY.1365889615 Date: 2025.06.30 15:45:44 -04'00'

OAR Decision Maker's Position/Title: Acting Deputy Director of NOAA Ocean Exploration and Research

Date Signed:

Appendix B Operational Standards

1. Meetings, Vessel Familiarization, and Project Evaluations

1.1 Pre-Project Meeting

The Chief Scientist and Commanding Officer (CO) will meet with pertinent members of the scientific party and ship's crew to discuss required equipment, planned operations, concerns, and establish mitigation strategies for all concerns. This meeting must be conducted before the beginning of the project with sufficient time to allow for preparation of the ship and project personnel. The ship's Operations Officer usually is delegated to assist the Chief Scientist in arranging this meeting.

1.2 Vessel Familiarization Meeting

The CO is responsible for ensuring scientific personnel are familiarized with applicable sections of the standing orders and ship protocols (e.g., meals, watches, etiquette, drills, etc.). A ship familiarization meeting must be conducted in the first 24 hours of the project's start and is normally presented by the ship's Operations Officer. See OMAO Procedure 1102-20 - General Rules and Minimum Requirements for Embarked Personnel and OMAO Procedure 1201-08 - NOAA Ship Familiarization.

1.3 Meals and Berthing

(A) The ship will provide meals for the scientists listed above. Meals will be served three (3) times daily beginning one (1) hour before scheduled departure, extending throughout the project, and ending two (2) hours after the termination of the project. Since the watch schedule is split between day and night, the night watch may often miss daytime meals and will require adequate food and beverages (for example a variety of sandwich items, cheeses, fruit, milk, juices) during what are not typically meal hours. Send special dietary requirements for scientific participants to the ship's command no less than two (2 weeks) before the start of a project.

(B) Berthing requirements, including number and gender of the scientific party, will be provided to the ship by the Chief Scientist. The Chief Scientist and CO will work together on a detailed berthing plan to accommodate the gender mix of the scientific party taking into consideration the current makeup of the ship's complement per OMAO Procedure 1102-03 - Vessel Quarters. The Chief Scientist is responsible for ensuring the scientific berthing spaces are left in the condition in which they were received; for stripping bedding and linen return; and for the return of any room keys that were issued. Unless prior arrangements are made, the science party may move aboard the night before scheduled departure and must move off the ship the day after scheduled arrival (at the end of project). The Chief Scientist/Principal Investigator is also responsible for the cleanliness of the laboratory spaces and the storage areas utilized by the scientific party, both during the project and at its conclusion before departing the ship.

(C) All NOAA scientists will have proper travel orders when assigned to any NOAA ship. The Chief Scientist will ensure that all non-NOAA or non-Federal scientists aboard also have proper orders. It is the responsibility of the Chief Scientist or Principal Investigator to ensure that the entire scientific party has a mechanism in place to provide lodging and food and to be reimbursed for these costs in the event that the ship becomes

uninhabitable and/or the galley is closed during any part of the scheduled project.

1.4 Shipboard Safety

(A) All embarked personnel are required to fully support and comply with NAO 202-1106: NOAA Sexual Assault and Sexual Harassment Prevention and Response Policy. The at-sea working/living environment is particularly sensitive and it is incumbent upon all personnel to uphold a positive and professional workplace dynamic in order to successfully accomplish cruise objectives.

(B) All persons boarding NOAA vessels give implied consent to comply with all safety and security policies and regulations administered by the CO. All spaces and equipment on the vessel are subject to inspection or search at any time. All personnel must comply with OMAO Procedure 1102-20 General Rules and Minimum Requirements for Embarked Personnel, which forbids the possession and/or use of illegal drugs and alcohol aboard NOAA Vessels.

(C) Surge protectors, power strips, and Uninterrupted Power Sources (UPS) must be approved for marine/shipboard use, removed from service if hot to the touch, regularly inspected for damage or wear, limited to one surge protector per duplex receptacle (i.e., “outlet”), and never daisy chained. The equipment must meet Military Performance Specification MIL-PRF-32167A (Transient Voltage Surge Suppressors), which incorporates American Society for Testing and Materials ASTM F1507 (Standard Specifications for Surge Suppressors for Shipboard Use) and Underwriters Laboratories UL 1449 (Safety Standards for Surge Protective Devices).

(D) Hard hats are required when working with suspended loads. Work vests are required when working near open railings and during small boat launch and recovery operations. Hard hats and work vests will be provided by the ship when required.

(E) Wearing open-toed footwear or shoes that do not completely enclose the foot (such as sandals, clogs, or crocs) outside of private berthing areas is not permitted. At the discretion of the ship CO, safety shoes (i.e. steel or composite toe protection) may be required to participate in any work dealing with suspended loads, including CTD deployment and recovery. The ship does not provide safety-toed shoes/boots. The ship’s Operations Officer should be consulted by the Chief Scientist to ensure members of the scientific party report aboard with the proper attire. See OMAO Procedure 1102-20 or SSI equivalent.

1.5 Post-Project Meeting

The CO is responsible for conducting a meeting no earlier than 24 hrs before or 7 days after the completion of a project to discuss the overall success and shortcomings of the project. Concerns regarding safety, efficiency, and suggestions for future improvements are discussed and mitigations for future projects will be documented for future use. This meeting includes the ship’s officers, applicable crew, the Chief Scientist, and members of the scientific party and is normally arranged by the ship’s Operations Officer and Chief Scientist.

1.6 Project Evaluation Report

Within 7 days of the completion of the project, the Chief Scientist or Principal Investigator completes a Customer Satisfaction Survey, as appropriate. The form is available at https://sites.google.com/a/noaa.gov/omao-intranet-dev/operations/marine/customer-satisfaction-survey and provides a "Submit" button at the end of the form. It is also located at Marine Operations Customer Satisfaction Survey. Submitted form data is deposited into a spreadsheet used by OMAO management to analyze the information. Though the complete form is not shared with the ships, specific concerns and praises are followed up on while not divulging the identity of the evaluator.

2. Shoreside Support

2.1 Medical Forms and Emergency Contacts

(A) The Chief Scientist must ensure all scientists have created/updated their eSAIL account with their emergency contact information. This must be completed seven (7) days prior to the departure date. An emergency contact is required to include: valid phone number, address, and email (if applicable). US based phone numbers are preferred, if a foreign number is used we require a US based alternate be listed as well.
Link for eSAIL: esail.omao.noaa.gov

All NOAA scientists will have proper travel orders when assigned to any NOAA ship. The Chief Scientist will ensure that all non-NOAA or non-Federal scientists aboard also have proper orders. It is the responsibility of the Chief Scientist or Principal Investigator to ensure that the entire scientific party has a mechanism in place to provide lodging and food and to be reimbursed for these costs in the event that the ship becomes uninhabitable and/or the galley is closed during any part of the scheduled project. NOAA Form (NF) 57-10-01 - Health Services Questionnaire (NHSQ) must be completed in advance by each participating scientist.

NHSQs must be submitted every 2 years for individuals under the age of 50 and every 1 year for ages 50 and above. NHSQs must be accompanied by NOAA Form (NF) 57-10-02 - Tuberculosis Screening Document in compliance with OMAO Policy 1008 (Tuberculosis Protection Program).

The completed forms should be sent to Marine Health Services at **marinemedicine@noaa.gov**. Before clearance to sail can be granted, all participating scientists must submit the NHSQ and Tuberculosis Screening Document to Marine Medical Branch no later than 4 weeks before the start of the project to allow time for the participant to obtain and submit additional information should health services require it. Please contact Marine Medical Branch with any questions regarding eligibility or completion of either form. The participant will receive an email notice when medically cleared to sail if a legible email address is provided on the NHSQ.

The participant can mail, fax, or email the forms to the contact information below. Participants should take precautions to protect their Personally Identifiable Information (PII) and medical information and ensure all correspondence adheres to DOC guidance. https://www.osec.doc.gov/opog/privacy/pii_bii.html.

(B) Contact information:

Marine Health Services
Marine Operations Center – Atlantic
439 W. York Street
Norfolk, VA 23510
Telephone 757-441-6320
Fax 757-441-3760

OR

Marine Health Services
Marine Operations Center – Pacific
2002 SE Marine Science Dr.
Newport, OR 97365
Telephone 541-867-8822
Fax 541-867-8856

(C) Before departure, the Chief Scientist must provide an electronic listing of emergency contacts to the Executive Officer for all members of the scientific party, with the following information: Contact name, Address, Relationship to member, and Telephone number.

3. Communications and Information Technology (IT)

3.1 Communications

A progress report on operations prepared by the Chief Scientist may be relayed to the program office. Sometimes it is necessary for the Chief Scientist to communicate with another vessel, aircraft, or shore facility. Through various means of communications, the ship can usually accommodate the Chief Scientist. Special radio voice communications requirements should be listed in the Project Instructions.

The ship’s primary means of communication with the Marine Operations Center is via email and the Very Small Aperture Terminal (VSAT) link. If increased bandwidth is being considered, program accounting is required and it must be arranged through the CO at least 30 days in advance.

3.2 IT Security

(A) IT Security Awareness Training:

(1) Guest scientists must complete NOAA’s IT Security Awareness Course before using or accessing any NOAA ship science computer or network resources. It is recommended that guests complete the course 3 days before embarking. Guest scientists must review and sign the Rules of Behaviour (ROB)

(2) For Foreign Nationals see Section 7.6

(B) Any computer that will be hooked into the ship's network must meet the following

requirements, at a minimum:

(1) Installation of the latest virus definition (.DAT) file on all systems and performance of a virus scan on each system.

(2) Installation of the latest critical operating system security patches.

(3) No external public Internet Service Provider (ISP) connections.

(4) No Kaspersky products are allowed

(5) Adhere to all licenses, copyright laws, contracts, and other restricted or proprietary information.

(6) Utilize all security measures that are in place to protect the confidentiality, integrity, and availability of information and systems.

(7) Refrain from using NOAA OMAO Public Network information resources for inappropriate activities.

(8) Do not visit inappropriate sites while using NOAA OMAO Public Network. Inappropriate sites can be but are not limited to:
   (a) Sexually Explicit Content (including nudity, pornography, and other obscene materials)
   (b) Websites With Extreme Political Views
   (c) Hate Websites
   (d) Websites That Promote Drug Use or Terrorist Activities
   (e) Online Gambling (including ads with adult-only content)
   (f) Web Sharing Websites (downloading illegal content, BitTorrent, Webtorrent, uTorrent)

(C) Computer Operating Systems that the support vendor has identified as reaching “End of Life” for support will not be allowed on the shipboard network.

(D) At any time, NOAA/OMAO may monitor and/or audit user activity and/or network traffic. In addition, NOAA/OMAO may access your system and disclose information obtained through audits to third parties, including law enforcement authorities.

3.3 Disposition of Data and Reports

Data Classifications:

(A) OMAO Data

(1) Since OMAO has limited tools and bandwidth for moving large datasets, OMAO commits to acquisition and archive responsibility for:

   (a) Scientific Computer System (SCS) data and metadata

   (b) Conductivity Temperature Depth (CTD profile) data

   (c) Acoustic Doppler Current Profile (ADCP) data

   (d) Ship Daily Activity Tracker (SDAT) Cruise level metadata

(2) On a project by project basis, if special submission capabilities are made available, the CO may commit to stewardship of other datasets.

(B) Program Data

(1) Systems attached to and maintained by the ship but will be run by the science party or Survey department such as bathymetric multibeam sonar, water column single, split beam, multibeam sonar, video and other digital imagery.

(2) Systems the Scientific Party brings aboard

(3) SCS, CTD, and ADCP will remain part of the Chief Scientist's project data package as well as being submitted to the archive in near real time by ship's personnel.

(C) Communication and Documentation

(1) Data Management Plans are reviewed at the Pre-Project Meeting (Section 7).

(2) Instrument, system, geographic, and operational interference are discussed and prioritized during pre-cruise communications and the Pre-Project Meeting. This ensures that every data acquisition system can operate to satisfy commitments to initiatives such as Seabed 2030 and OMAO's general guidance to acquire the most and best data possible, while not interfering with the project's primary objectives.

(D) Data Transmittal and Storage Media

(1) Before departure, bandwidth, storage capacity, and MACC (Marine and Aviation Cyber Center) media policies will guide strategies for stewardship of data collected during the project and the manner that the Chief Scientist's data package and other large data files will be transmitted to shore or carried from the ship at the end of the project.

(2) The ship CO completes data transmittal or other chain of custody documentation and a copy of each is retained on the ship and will accompany the data media.

(E) Acknowledgment and Acceptance

(1) Cover page signatures acknowledge each parties acceptance of the data submission responsibilities outlined in this section.

3.4 Responsibilities

(A) OMAO Data

(1) OMAO owned shipboard systems will be maintained, calibrated at prescribed intervals, in good working order, and tested before departure. Sounders and systems that require patch test or sphere calibration may require project time if the ship does not have the means to conduct calibrations before the beginning of the project

(2) System (SCS) data, Conductivity Temperature Depth (CTD profile) data, Acoustic Doppler Current Profile (ADCP) data will be submitted in near real time or at end-of-project through existing and developing utilities.

(3) Metadata for each data type will be complete, up-to-date, and accurate.

(4) SDAT ship and cruise level metadata will be accurate and updated every 2 to 3 days.

(5) On a project by project basis, if special submission capabilities are made available, the ship's CO may commit to stewardship of other datasets.

(B) Program Data

(1) All non-OMAO data collected is stewarded and delivered to the lab's data managers for prompt packaging and submission to National Centers for Environmental Information according to their LO's directives.

(2) Holds, or embargoes may be placed on sensitive data for up to 1 year.

(C) Communication and Documentation

(1) Data Management Plans are reviewed at the Pre-Project Meeting.

(2) Instrument, system, geographic, and operational interference are discussed and prioritized during pre-cruise communications and the Pre-Project Meeting. This ensures that every data acquisition system can operate to satisfy commitments to initiatives such as Seabed 2030 and OMAO's general guidance (including OMAO Environmental Data Management Directive and ship specific instructions) to acquire the most and best data possible, while not interfering with the project's primary objectives.

(D) Data Transmittal and Storage Media

(1) Before departure, bandwidth, storage capacity, and MACC (Marine and Aviation Cyber Center) media policies will guide strategies for stewardship of data collected during the project and the manner that the Chief Scientist's data package and other large data files will be transmitted to shore or carried from the ship at the end of the project.

(2) The ship CO completes data transmittal or other chain of custody documentation and a copy of each is retained on the ship and will accompany the data media.

(A) Acknowledgment and Acceptance

(1) Signatures on this document acknowledge each parties acceptance of the data submission responsibilities outlined in this section.

3.5 Shipboard Data Acquisition and Stewardship Procedures

(A) Chief Scientist/Principal Investigator – Draft Project Instructions, Collect Data, Define Metadata, and Submit Processed Data

The CS/PI shall:

(1) Include a section entitled "Disposition of Data and Reports" in the Project Instructions.

(a) This section shall state that the CS/PI is responsible for the collection, management, and archiving of all project-specific data in accordance with NOAA's Administrative Order (NAO) 212-15 - Management of Environmental Data and Information.

(2) Clearly identify in the "Disposition of Data and Reports" the data sets generated during the project and classifications of data as either OMAO Data or Program Data. OMAO is required to archive OMAO data and the Program is required to archive

Program Data. Programs will archive their data following their own internal procedures.

(3) Clearly identify in the “Disposition of Data and Reports” Section 5 of the Project Instructions all data that NOAA will publicly release and all data that NOAA will not publicly release along with responsible parties for each data set.

(4) Assign an indefinite date for public release by the proper authorities for data having homeland/national security, cultural heritage, or protected resources.

(5) Document in the Project Instructions the specific justification for non-release of data, as well as the authority responsible for the non-release decision.

(6) The CS/PI shall work with shipboard personnel to collect data of the highest possible quality and to create project metadata. Unless otherwise excepted, the project data and metadata shall include a date for public release of data not to exceed 1 year after collection.

(7) As soon as practical and not to exceed 15 days following the completion of the project, the CS/PI shall obtain a copy of raw data collected with OMAO-owned instruments.

(8) The CS/PI shall provide all project-specific processed data with corresponding project metadata to a data archive within 1 year of collection. In addition, the CS/PI shall submit, when available, data event logs, Project Instructions, survey reports, and other high-utility documentation to this archive.

(9) Upon receiving evidence (preferably an accession number or a digital object identifier) that the project-specific processed data has been properly archived following NOAA guidelines with metadata, the CS/PI’s responsibility for archival is complete.

(10) The CS/PI shall be responsible for all data generated from instruments not owned by OMAO. Future opportunities to participate in data collection activities, as a CS/PI aboard a NOAA ship, may require verification from a data archive that project-specific processed data with project metadata were delivered within 1 year of collection.

(11) The OER CS/PI is responsible to adherence to the NOAA Ocean Exploration data management plan in Appendix A. Additionally, CS/PI will work with shipboard personnel and NCEI team to ensure data are copied/transmitted to archive during the interim phase while CORIOLIX, GLOBUS, and the OMAO cloud data solution is being stood up. This includes retrieving a copy of all positioning data, SCS, ADCP data, METOC data, as well as other ancillary data prior to departing the ship.

(B) Commanding Officer/Master - Submit Raw Data to NCEI and Data Disposition

(1) Depending on connectivity, and preferably not to exceed 60 days following the completion of each cruise/project, the CO shall ensure all OMAO-collected data, corresponding project metadata, and Project Instructions are submitted to NCEI.

(a) These data include all raw data collected with OMAO-owned and scientific party-provided instruments that OMAO is responsible for per the Project Instructions, as well as any processed data available at the time of submission.

(2) The CO or the CO's designee shall notify NCEI electronically when the data are ready for transfer. This procedure does not relieve the CS/PI from their responsibility to provide all project-specific data and project metadata to a data archive within 1 year of data collection.

(3) The CO’s responsibility for archiving the data is complete upon receiving confirmation from NCEI that raw data and project metadata are archived (preferably an accession number or a digital object identifier).

(4) Policy for implementing Appendix B Section 3.5 is outlined in OMAO Policy 1102-38 Shipboard Data Acquisition and Stewardship.

(5) For each project, the CO shall ensure that all OMAO-owned instruments are acquiring high-quality data. OMAO instruments should be acquiring data at all times unless it interferes with the specific project, violates rules/laws/policy, or is due to another reason specified in the SDAL Ship Operations Log for that sea day.

(C) OMAO Environmental Data Acquisition Manager

(1) The EDAM plans, directs, and implements policies and procedures to standardize the acquisition, safeguarding, and submission of high quality environmental, water column, and bathymetric data by NOAA Ships.

(2) The EDAM will validate and monitor publication of the appropriate metadata in the NOAA archive, ensure the data is publicly available by the agreed date of public release, and assess current digital inventories of all published OMAO owned data sets.

(3) The EDAM will ensure proper data stewardship and implementation of the terms of the submission agreements, address policy requirements, and adopt procedural directives throughout the data lifecycle.

(D) NCEI Data Manager - Archive and Publish Data at NCEI

(1) After confirming that raw data and project metadata received from the CO or the CO's designee are valid, a DM will archive them at NCEI and then return confirmation (preferably an accession number or a digital object identifier) to the CO and/or the CO's designee and the OMAO Data Manager.

(2) A DM will validate and publish metadata, archive appropriate data in accordance with data archival best practices, make the data publicly available by the agreed date of public release, safeguard non-public, restricted data (i.e., data with homeland/national security, cultural heritage, or protected resources value), and maintain current digital inventories of all public data.

(3) NCEI will make publicly available all unrestricted raw and processed data (i.e., all data with no homeland/national security, cultural heritage, or protected resources value) no sooner than the agreed date of public release and not later than 1 year after collection. Ships should account for NCEI's time to receive and process the data (~90 days) in this 1 year.

(4) OMAO and NCEI will describe the technical details of implementing Section 5 in their Submission Agreements and appendices to this document. The DM will ensure to implement the terms of the submission agreements.

4. Foreign Nationals

4.1 Foreign National Guests Access to OMAO Facilities and Platforms

All foreign national access to the vessel shall be in accordance with NAO 207-12: Technology Controls and Foreign National Access. All LO personnel will use the Foreign National Registration System (FNRS) to submit requests for access to NOAA facilities and ships. FNRS does not route through OMAO for access to OMAO facilities and platforms or for access to OMAO Information Technology systems. Therefore OMAO also requires the form Request for Foreign National Access to OMAO Facilities and Platforms The Departmental Sponsor/NOAA (DSN) is responsible for obtaining clearances and export licenses and for providing escorts required by the NAO. DSNs should consult with their LO Controlled Technology Coordinators to assist with the process.

Foreign National access must be sought not only for access to the ship involved in the project but also for any Federal Facility access (NOAA Marine Operations Centers, NOAA port offices, USCG Bases, Navy Bases, commercial ports) that foreign nationals might have to traverse to gain access to and from the ship. The following are basic requirements.

Full compliance with NAO 207-12 is required.

(A) Responsibilities of the Chief Scientist

(1) Provide the CO with the email generated by the Servicing Security Office granting approval for the foreign national guest's visit. This email will identify the guest's DSN

and Designated Escorts (if any) and will serve as evidence that the requirements of NAO 207-12 have been complied with.

(2) Escorts – The Chief Scientist is responsible to provide escorts to comply with NAO 207-12 Section 5.10, or as required by the vessel's DOC/OSY Regional Security Officer.

(3) Ensure all non-foreign national members of the scientific party receive the briefing on Espionage Indicators (NAO 207-12) at least annually or as required by the Servicing Security Office.

(4) Export Control - Ensure that approved controls are in place for any technologies subject to Export Administration Regulations (EAR) that will be brought aboard the ship.

(5) The CO and the Chief Scientist will keep each other informed of controlled technologies belonging to the ship and to the scientific party and will work together to implement any access controls necessary to ensure no unlicensed export occurs.

(B) Responsibilities of the Commanding Officer

(1) Ensure only those foreign nationals with DOC/OSY clearance are granted access.

(2) Deny access to OMAO platforms and facilities by foreign nationals from countries controlled for anti-terrorism (AT) reasons and individuals from Cuba or Iran without written approval from the Director of the Office of Marine and Aviation Operations and compliance with export and sanction regulations.

(3) Ensure foreign national access is permitted only if unlicensed deemed export is not likely to occur.

(4) Ensure receipt from the Chief Scientist or the DSN of the Servicing Security Office email granting approval for the foreign national guest's visit. OMAO CTC will email the CO when access to the platform and IT assets has been approved.

(5) Ensure Foreign Port Officials, e.g., Pilots, immigration officials, receive escorted access in accordance with maritime custom to facilitate the vessel's visit to foreign ports.

(6) Ensure all OMAO personnel onboard receive the briefing on Espionage Indicators (NAO 207-12) at least annually or as required by the Servicing Security Office.

(C) Responsibilities of the Departmental Sponsor

(1) Export Control - The DSN is responsible for obtaining any required export licenses and complying with any conditions of those licenses prior to the foreign national being provided access to the controlled technology onboard regardless of the technology's ownership.

(2) The DSN, if not sailing for the project, shall assign an on-board Program individual, who will be responsible for the foreign national while on board. The identified individual must be a U.S. citizen and a NOAA or DOC employee. According to DOC/OSY, this requirement cannot be altered.

(3) Ensure completion and submission of NAO 207-12 (Certification of Conditions and Responsibilities for a Foreign National) within 3 days of the FN's arrival onboard the ship.

5. Hazardous Materials

5.1 Policy and Compliance

The Chief Scientist is responsible for complying with OMAO Procedure 0701-22 Visiting Scientists' Chemicals and Related Hazardous Materials (Mission HAZMAT). By federal regulations and NOAA Marine and Aviation Operations policy, the ship may not sail without a complete inventory of all hazardous materials by name and quantity, Safety Data Sheets (SDS), appropriate spill cleanup materials (i.e., neutralizing agents, buffers, or absorbents) in amounts adequate to address spills of a size equal to the amount of chemical brought aboard, and chemical safety and spill response procedures. Documentation regarding those requirements will be provided by the Chief of Operations, Marine Operations Center, upon request.

(A) Per OMAO Procedure 0701-22, the scientific party will include with their Project Instructions and provide the CO of the respective ship 30 days before departure:

(1) List of chemicals by name with anticipated quantity;

(2) List of spill response materials, including neutralizing agents, buffers, and absorbents;

(3) Chemical safety and spill response procedures, such as excerpts of the program's Chemical Hygiene Plan or SOPs relevant for shipboard laboratories; and

(4) For bulk quantities of chemicals in excess of 50 gallons total or in containers larger than 10 gallons each, notify the ship's Operations Officer regarding quantity, packaging, and chemical to verify safe stowage is available.

(B) During embarkation and before loading hazardous materials aboard the vessel, the scientific party will provide the CO or their designee:

(1) An inventory list (NF 57-07-11 or similar) showing actual amount of hazardous material to be brought aboard;

(2) An SDS for each material;

(3) Confirmation that neutralizing agents and spill equipment were brought aboard sufficient to contain and cleanup all of the hazardous material brought aboard by the program; and

(4) Confirmation that chemical safety and spill response procedures were brought aboard.

(C) During loading, the scientific parties will work with the ship's Operations Officer and the ECO to track mission hazmat brought aboard, using NOAA Form 57-07-11 or similar. SDS will be made available to the ship's complement, in compliance with Hazard Communication Laws.

(D) Underway, the scientific parties are expected to manage and respond to spills of scientific hazardous materials. Overboard discharge of hazardous materials is not permitted aboard NOAA ships.

(E) Upon departure from the ship, the removal of mission hazmat and related products must

be verified and the Chief Scientist and Operations Officer or designee must initial the Mission HAZMAT Log (NF 57-07-11). A closed out copy of the Mission Hazmat Log will be provided to the scientific party upon request.

5.2 Chemical safety and spill response procedures

(A) ACID [A]

(1) Wear appropriate protective equipment and clothing during clean-up. Keep upwind. Keep out of low areas.

(2) Ventilate closed spaces before entering them.

(3) Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible.

(4) Large Spills: Dike far ahead of spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.

(5) Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

(6) Never return spills in original containers for re-use.

(7) Neutralize spill area and washings with soda ash or lime. Collect in a non-combustible container for prompt disposal.

(8) J. T. Baker NEUTRASORB® acid neutralizers are recommended for spills of this product.

(B) Mercury [M]

(1) Spills: Pick up and place in a suitable container for reclamation or disposal in a method that does not generate dust. Sprinkle area with sulfur or calcium polysulfide to suppress mercury. Use Mercury Spill Kit if need be.

(C) Formalin/Formaldehyde [F]

(1) Ventilate area of leak or spill. Remove all sources of ignition.

(2) Wear appropriate personal protective equipment.

(3) Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible.

(4) Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e.g., vermiculite, dry sand, earth), and place in a chemical waste container.

(5) Do not use combustible materials, such as sawdust.

5.3 Radioactive Materials and X-ray Generating Devices

The Chief Scientist is responsible for complying with OMAO Procedure 0701-10 Radioactive Material and X-ray Generating Device Use Aboard NOAA Ships. Documentation regarding those requirements is provided by the Chief of Operations, Marine Operations, upon request. Use of radioactive isotopes in areas under the jurisdiction of other countries may require additional permits from the host countries. Port calls in other countries, while the ship is carrying

radioactive isotopes, may also require special notification, compliance with host country regulations, and consent from the host.

(A) Radioactive Materials (RAM)

The Chief Scientist submits, at least three months in advance of a domestic project and eight months in advance of a foreign project start date, required documentation to MOC-CO, including:

(1) NF 57-07-02 Request to use Radioactive Material Aboard a NOAA Ship.

(2) Draft Project Instructions (only one copy required per project).

(3) Licenses: Nuclear Regulatory Commission (NRC) Materials License (NRC Form 374) or State license with Report of Proposed Activities in Non-Agreement States, Areas of Exclusive Federal Jurisdiction, or Offshore Waters (NRC Form 241).

(4) Experiment and usage protocols, including spill clean-up and accidental exposure procedures.

(5) If applicable, copies of any applications submitted and/or consent obtained from other countries.

(B) X-ray Generating Devices (XGD)

The Chief Scientist submits, at least three months in advance of a domestic or foreign project start date, required documentation to MOC-CO, including:

(1) NF 57-07-19 Request to use X-ray Generating Device (XGD) Aboard a NOAA Ship.

(2) Draft Project Instructions (only one copy required per project).

(3) Experiment or usage protocol, including all proposed use parameters.

(4) A current (within 1 year of the day the vessel is to leave port) performance test report for each device

(5) Manufacturer specification sheet.

(6) If applicable, copies of any applications submitted and/or consent obtained from other countries.

Scientific parties will follow responsibilities and requirements for storage and use, routine wipe tests, signage, and material disposal as outlined in OMAO Procedure 0701-10.

5.4 Lithium Batteries

Lithium batteries include:

- Lithium batteries,
- Lithium cells,
- Lithium battery-powered, or associated, systems or equipment, and
- Batteries that utilize lithium metal, alloys, or compounds.

Per OMAO Procedure 1102-04 Lithium Battery Safety Procedures, the Chief Scientist is responsible for:

(A) Providing a risk management plan to mitigate lithium battery concerns, including:

(1) Packaging. How will the system/battery be packaged?

(2) Storage facilities. How will the system/battery be stored from delivery to disposal?

(3) Transportation methods

(4) Operational use scenario (Include a complete description of how the system/batteries will be handled and used; what platform(s) will carry or deploy the system; location of recharging operations; recovery operations; number of units anticipated to be used; and, where appropriate, the sequence of events before system use/activation/deployment, etc.).

(5) Disposal information

(B) Provide scientific party and Ship's Command with relevant SOPs related to equipment containing lithium batteries.

(C) Include Safety Data Sheets and/or Technical Data Sheets in the hazardous materials inventory that is transmitted to the ship.

(D) Notify the ship's Command/ECO when equipment arrives on-scene.

Appendix C References

Federal Regulations and Standards

- ASTM F1507 American Society for Testing and Materials - Standard Specifications for Surge Suppressors for Shipboard Use
- Export Administration Regulations (EAR)
- MIL-PRF-32167A Military Performance Specification - Transient Voltage Surge Suppressors
- UL 1449 Underwriters Laboratories - Safety Standards for Surge Protective Devices

NOAA Administrative Orders

- NAO 121-15-B Management of NOAA's Data and Information
- NAO 202-1106 NOAA Sexual Assault and Sexual Harassment Prevention and Response Policy
- NAO 207-12 Technology Controls and Foreign National Access
- NAO 212-15 Management of Environmental Data and Information
    - NOAA Data Documentation Procedural Directive
    - NOAA Data Management Planning Procedural Directive (preparation of DMPs)
- NAO 216-101 Ocean Data Acquisitions

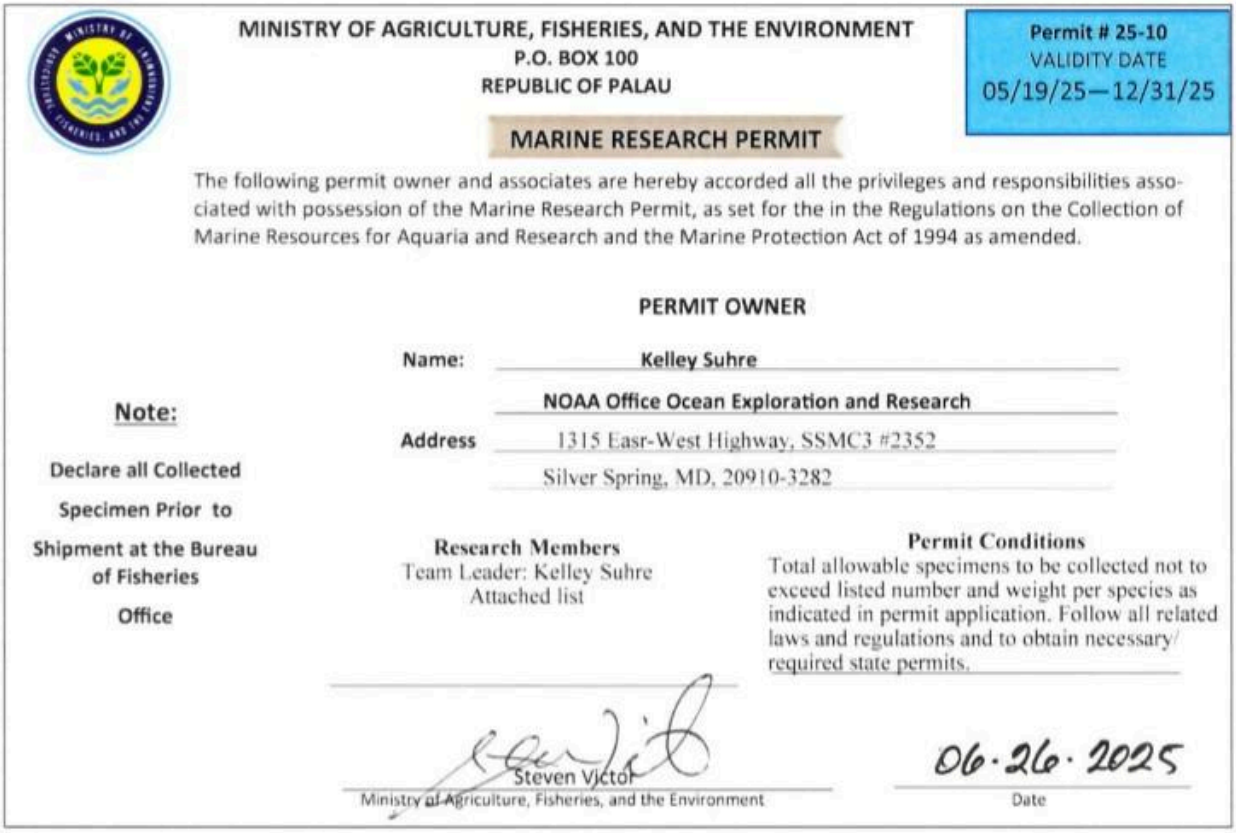
OMAO Policies and Procedures

- OMAO Policy 1008 Tuberculosis Protection Program
- OMAO Policy 1102-38 Shipboard Data Acquisition and Stewardship
- OMAO Procedure 0701-10 Radioactive Material and X-ray Generating Device Use aboard NOAA Ships
- OMAO Procedure 0701-22 Visiting Scientists' Chemicals and Related Hazardous Materials (Mission HAZMAT)
- OMAO Procedure 1102-03 Vessel Quarters
- OMAO Procedure 1102-04 Lithium Battery Safety Procedures
- OMAO Procedure 1102-20 General Rules and Minimum Requirements for Embarked Personnel
- OMAO Procedure 1201-080 NOAA Ship Familiarization

Appendix D Forms

- NOAA Form 57-07-02 Request to Use Radioactive Material Aboard a NOAA Ship
- NOAA Form 57-07-19 Request to Use X-ray Generating Devices (XGD) Aboard a NOAA Ship
- NOAA Form 57-10-02 Tuberculosis Screening Document
- NOAA Form 57-10-01 Health Services Questionnaire (NHSQ)
- NRC Form 374 Nuclear Regulatory Commission Materials License
- NRC Form 241 Report of Proposed Activities in Non-Agreement States, Areas of Exclusive Federal Jurisdiction, or Offshore Waters
- Request for Foreign National Access to OMAO Facilities and Platform

Appendix E: Diplomatic Clearances



MINISTRY OF AGRICULTURE, FISHERIES, AND THE ENVIRONMENT
P.O. BOX 100
REPUBLIC OF PALAU

Permit # 25-10
VALIDITY DATE
05/19/25—12/31/25

MARINE RESEARCH PERMIT

The following permit owner and associates are hereby accorded all the privileges and responsibilities associated with possession of the Marine Research Permit, as set for the in the Regulations on the Collection of Marine Resources for Aquaria and Research and the Marine Protection Act of 1994 as amended.

PERMIT OWNER

Name: Kelley Suhre
NOAA Office Ocean Exploration and Research
Address 1315 Easr-West Highway, SSMC3 #2352
Silver Spring, MD, 20910-3282

Note:

Declare all Collected Specimen Prior to Shipment at the Bureau of Fisheries Office

Research Members
Team Leader: Kelley Suhre
Attached list

Permit Conditions
Total allowable specimens to be collected not to exceed listed number and weight per species as indicated in permit application. Follow all related laws and regulations and to obtain necessary/ required state permits.

Steven Victor
Ministry of Agriculture, Fisheries, and the Environment

06·26·2025
Date

Department of Foreign Affairs
Federated States of Micronesia

DFA-LSR-182-25
April 28, 2025

The Department of Foreign Affairs of the Federated States of Micronesia presents its compliments to the Embassy of the United States of America in the FSM and has the honor to provide the enclosed copy of the research permit issued to research vessel NOAA Okeanos Explorer.

The Department has the further honor to request the Embassy's assistance in forwarding the enclosed permit to the recipient.

The Department of Foreign Affairs of the Federated States of Micronesia avails itself of this opportunity to renew with the Embassy of the United States of America in the FSM the assurances of its highest consideration.

Palikir, Pohnpei

Enclosure:

RESEARCH AND TRAINING PERMIT FOR THE EXCLUSIVE ECONOMIC ZONE OF THE FEDERATED STATES OF MICRONESIA

PERMIT NO: FM25-US20251RS-26107
EFFECTIVE DATE: 01 May 2025
EXPIRATION DATE: 31 December 2025

VESSEL NAME: RV NOAA OKEANOS EXPLORER
NAME OF PERMIT HOLDER: NOAA
TYPE OF VESSEL: RESEARCH
RADIO CALL SIGN: WTDH
COUNTRY OF REGISTRATION: US
REGISTRATION NUMBER: MMSI: 369888000

YEAR BUILT:	1988	**GROSS TONNAGE:**	2312
LENGTH:	224	**ENGINE HORSEPOWER:**	1600 Kilowatt
		AUTHORIZED CREW SIZE:	27

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OPERATING CONDITIONS ARE ON THE REVERSE SIDE OF THIS PERMIT

18 Mar 2025
DATE ISSUED

Limanman Helgenberger,
Acting Executive Director
APPROVED BY:

NATIONAL OCEANIC RESOURCE MANAGEMENT AUTHORITY

PERMIT SHALL BE PROMINENTLY DISPLAYED IN WHEELHOUSE OF THE VESSEL

Application ID: 1b717dcb-ebc5-4592-b859-accc952a13df

OPERATING CONDITIONS

1. This Permit is valid only during the specified Effective and Expiration dates above.
2. Research and Survey within the 12 miles of the FSM is prohibited unless authorized by the State concerned.
3. This permit shall be displayed prominently in the wheelhouse of the vessel.
4. A copy of the Research or Survey report shall be submitted to the FSM.
5. This permit is not transferable.

Application ID: efe0ca55-7b1b-4a96-a403-d7b16fb3af96