



UNITED STATES DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration
NOAA Marine and Aviation Operations
Marine Operations Center
439 W. York Street
Norfolk, VA 23510-1114

September 4, 2017

MEMORANDUM FOR: Commander Eric Johnson, NOAA
Commanding Officer, NOAA Ship *Okeanos Explorer*

FROM: Captain Scott M. Sirois, NOAA
Commanding Officer, NOAA Marine Operations Center-Atlantic

SUBJECT: Project Instruction for EX-17-08
Musician Seamounts (ROV & Mapping)

Attached is the final Project Instruction for EX-17-08, Musician Seamounts (ROV & Mapping), which is scheduled aboard NOAA Ship *Okeanos Explorer* during the period of September 6 – September 30, 2017. Of the 25 DAS scheduled for this project, 25 DAS are funded by Line Office Allocation. This project is estimated to exhibit a High Operational Tempo. Acknowledge receipt of these instructions via e-mail to Opsmgr.MOA@noaa.gov at Marine Operations Center-Atlantic.





Ocean Exploration and Research

Final Project Instructions

Date Submitted: September 1, 2017

Platform: NOAA Ship *Okeanos Explorer*

Project Number: EX-17-08

Project Title: Musicians Seamounts (ROV & Mapping)

Project Dates: September 6 - 30, 2017

Prepared by: Kasey Cantwell

Dated: 9/1/17

Kasey Cantwell, NOAA
Expedition Coordinator
Office of Ocean Exploration & Research

Approved by: [Signature]

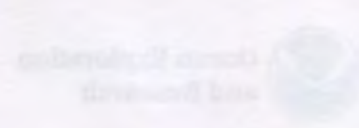
Dated: 9/1/2017

Craig Russell
Program Manager
Office of Ocean Exploration & Research

Approved by: [Signature]

Dated: 9/15/17

Captain Scott M. Sirois, NOAA
Commanding Officer
Marine Operations Center - Atlantic



I. Overview

“America’s future depends on understanding the ocean. We explore the ocean because its health and resilience are vital to our economy and to our lives. We depend on the ocean to regulate weather and climate; sustain a diversity of life; for maritime shipping and national defense; and for food, energy, medicine, and other essential services to humankind.”

- NOAA Office of Ocean Exploration and Research Strategic Plan

A. Brief Summary and Project Period

This document contains project instructions for EX-17-08. Operations for this cruise will be conducted 24 hours/day and consist of daily remotely operated vehicle (ROV), overnight mapping, and full shore-based participation via telepresence. The expedition will commence on September 6, 2017 in Honolulu, Hawaii (21° 22' 2.62"N, 157° 57' 51.32"W) and conclude on September 30, 2017 in Honolulu, Hawaii (21° 22' 2.62"N, 157° 57' 51.32"W). Operations will include the use of the ship’s deep water mapping systems (Kongsberg EM302 multibeam sonar, EK60 split-beam fisheries sonars, Knudsen 3260 chirp sub-bottom profiler sonar, and Teledyne Acoustic Doppler Current Profiler), XBT and CTD casts in support of multibeam sonar mapping operations, OER’s two-body ROV Deep *Discoverer* and *Seirios*, and the ship’s high-bandwidth satellite connection for continuous real-time ship-to-shore communications. Operations are planned in and around Hawaii, the US EEZ, and in the High Seas around the Musicians Seamounts.

NOAA’s Office of Ocean Exploration and Research (OER) is the only federal organization dedicated to exploring our unknown ocean. OER works with partners to identify priority areas for exploration; support innovations in exploration tools and capabilities; and encourage the next generation of ocean explorers, scientists, and engineers. The publicly available data and information gained from our expeditions and the research we fund gives resource managers, the academic community, and the private sector the information they need to identify, understand, and manage ocean resources for this and future generations of Americans.

NOAA Ship *Okeanos Explorer* is the only federal vessel dedicated to exploring our largely unknown ocean for the purpose of discovery and the advancement of knowledge about the deep ocean. America’s future depends on understanding the ocean. We explore the ocean to make valuable scientific, economic, and cultural discoveries, and we explore because ocean health and resilience are vital to our economy and to our lives. Exploration supports NOAA mission priorities and national objectives by providing high-quality scientific information about the deep ocean to anyone who needs it.

In close collaboration with government agencies, academic institutions, and other partners, OER conducts deep-ocean exploration expeditions using advanced technologies on the *Okeanos Explorer*. From mapping and characterizing previously unseen seafloor to collecting and disseminating information about ocean depths, this work helps to establish a foundation of information and fill data gaps. Data collected on the ship follow federal open-access data standards and are publicly available shortly after an expedition ends. This ensures the delivery of reliable scientific data needed to identify, understand, and manage key elements of the ocean environment.

This expedition is the final cruise of a three year Campaign to Address Pacific monument Science, Technology, and Ocean Needs ([CAPSTONE](#)) focused on systematically collecting baseline information to support science and management needs within and around the Monuments and other protected places in the Pacific, and serves as an opportunity for NOAA and the Nation to highlight the uniqueness and importance of these national symbols of ocean conservation. NOAA will work with the scientific and management community to characterize unknown and poorly-known areas through telepresence-based exploration. Baseline information collected during this cruise will support and catalyze further exploration, research and management activities.

Understanding biogeographic patterns between and among the Pacific Monuments and Sanctuaries is a coordinating theme for CAPSTONE science priorities. Themes and objectives for the expedition series include:

- Acquire data to support priority Monument and Sanctuaries science and management needs, including habitat surveys in recently expanded boundary areas;
- Identify and characterize vulnerable marine habitats - particularly potential locations for high density deep sea coral and sponge communities;
- Characterize seamounts within the Prime Crust Zone (PCZ). The PCZ is the area of the Pacific with the highest expected concentration of deep sea minerals, including rare metals and rare earth elements;
- Collect information on the geologic history of Central Pacific Seamounts, including those that are or may be relevant to our understanding of plate tectonics and subduction zone biology and geology; and
- Provide a foundation of publicly accessible data and information products to spur further exploration, research, and management activities.

B. Days at Sea (DAS)

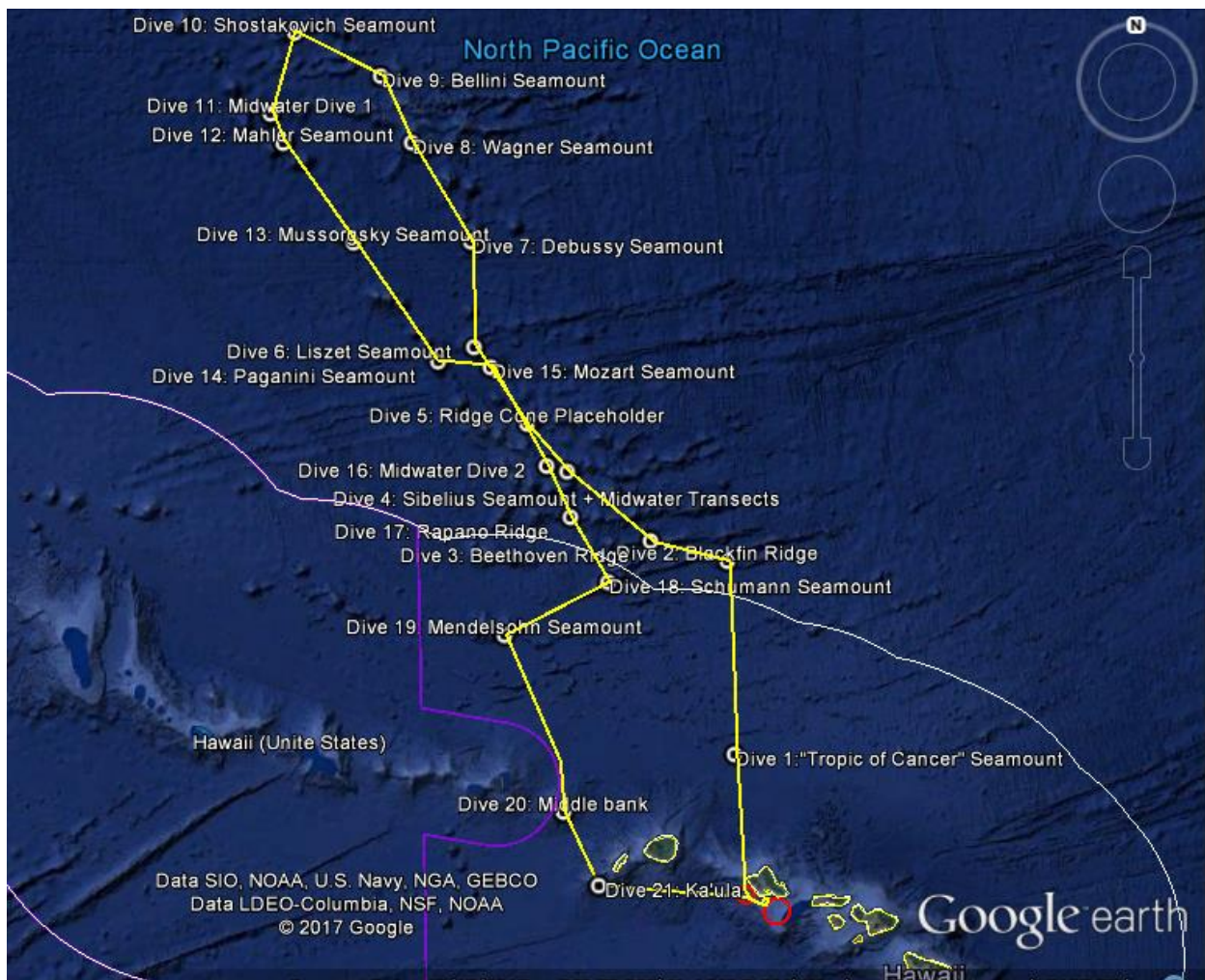
Of the 25 DAS scheduled for this project, 0 DAS are funded by an OMAO allocation and 25 DAS are funded OAR Allocation. This project is estimated to exhibit a High Operational Tempo due

to 24 hour operations consisting of daily ROV dives, possible CTD rosette casts, overnight mapping operations and continuous shore-side participation via telepresence.

C. Operating Area

EX-17-08 of the CAPSTONE Expeditions is a combined ROV and mapping cruise that will focus operations in the US EEZ around Hawaii and the high seas around the Musician Seamounts. Mapping, ROV and CTD rosette operations will focus in depths generally between 250 and 6,000 meters. ROV operations will be limited to 4,500 m.

Figure 1: Map showing the general expedition operating area. The yellow line is the rough cruise track for EX-17-08. The purple polygon represents the boundaries of the Papahānaumokuākea Marine National Monument. The white polygon designates the US EEZ. Planned ROV dives are represented by white markers.



Generalized operating area coordinates		
ID	Latitude	Longitude
SW corner	22.195690° N	161.109378° W
SE corner	20.630065° N	158.092465° W
NE corner	33.625011° N	161.308663° W
NW corner	33.026599° N	166.451234° W

Table 1: Bounding coordinates of the EX-17-08 operating area

D. Summary of Objectives

September 6-30, 2017 (Honolulu, HI to Honolulu, HI) Telepresence-enabled ROV, CTD rosette, and mapping Operations.

EX-17-08 operations will occur in the waters of Hawaii, the US EEZ and in the High Seas around the Musicians Seamounts. This cruise will collect baseline data and information to support priority NOAA science and management needs including in multiple marine protected areas of the Pacific Ocean.

Mission objectives for EX-17-08 include a combination of mapping/operational, science, education, outreach, and data management objectives:

1. Science
 - a. Acquire data to support priority Monument and Sanctuary science and management needs;
 - b. Identify and map vulnerable marine habitats – particularly high-density deep-sea coral and sponge communities;
 - c. Explore the diversity and distribution of benthic habitats – including bottom fish habitats and deep-sea coral communities;
 - i. Collect data on: habitat size and extent, animal diversity and density;
 - ii. Focus close-up imaging operations on potential new, rare and poorly documented animals as well as dominant members of the communities;
 - iii. Collect and preserve biological samples of potential new species, new records, dominant community members if not easily recognized, and other animals to aid in site characterization
 - iv. Collect and preserve geologic samples primarily manganese encrusted basalt
 - d. Investigate biogeographic patterns of deep-sea ecosystems and connectivity across Pacific seamounts;



- e. Characterize seamounts within the upper extent of the Prime Crust Zone (PCZ), an area of the Pacific with the highest levels of commercially valuable deep-sea mineral deposits
 - f. Investigate the geology of the Musicians Seamounts and the Murray Fracture Zone, to better understand the relationship between hotspot volcanism, mid-ocean ridges, and fracture zones
 - g. Explore U.S. maritime heritage by investigating sonar anomalies and characterizing World War II-era shipwrecks
 - h. Acquire a foundation of ROV, sonar, and oceanographic data to better understand the characteristics of the water column and the fauna that live there
 - i. Collect high-resolution bathymetry in areas with no (or low quality) sonar data;
 - j. Continue to refine specimen processing procedures;
 - k. Ground-truth acoustic data using video imagery and characterize associated habitat;
 - l. Engage a broad spectrum of the scientific community and public in telepresence-based exploration;
 - m. Successfully conduct operations in conjunction with shore-based Exploration Command Centers and remote science team participants;
 - n. Create and provide input into standard science products to provide a foundation of publicly accessible data and information products to spur further exploration, research, and management activities;
 - o. Follow UCH SOPs as identified in Appendix H.
2. Remote Science/Exploration Command Centers
- a. Provide operational support and training to scientists and managers to enable remote participation in at-sea operations;
 - b. Continue to test best practices for hosting internet-1 based live interactions;
 - c. Facilitate outreach and engagement activities and events at the ECCs and other facilities that host interactions;
 - d. Test and refine ship-to-shore communications procedures that engage multiple ECCs and other remote participants;
 - e. Test and refine operating procedures and products.
3. ROV Engineering
- a. Daytime ROV dives on exploration targets;
 - b. Ongoing training of pilots;
 - c. Ongoing system maintenance, documentation, and training;
 - d. Test and refine new ROV mid-water exploration procedures;
 - e. Spool removed 0.68 cable from EX1706 onto a drum for transport back to mainland US;
 - f. Follow UCH SOPs as identified in Appendix H;
 - g. Prep tool van and ROV equipment for transit back to the Atlantic.



4. Video Engineering (VSAT ~15 mb/sec ship-to-shore; 2.5 mb/sec shore-to-ship)
 - a. Test terrestrial and high-speed satellite links;
 - b. Support telepresence-enabled ROV operations;
 - c. Collect/create all standard video products;
 - d. Continue to refine new highlight video SOPs;
 - e. Facilitate live outreach events between ship and shore;
 - f. Formalize / Finalize parallel processing of imagery and video compression routines;
 - g. Develop protocols and procedure for using the Telestream video recording suite;
 - h. Install and integrate new EVERTZ unit;
 - i. Follow UCH SOPs as identified in Appendix H;
 - j. Test RTS system's new VPN tunnel for ship to shore communications

5. Mapping
 - a. Collect high resolution mapping data from sonars in priority areas as dictated by operational needs as well as science and management community needs;
 - b. Support ROV operations with mapping products and expertise;
 - c. Conduct mapping operations during transit, with possible further development of exploration targets;
 - d. Collect XBT casts as data quality requires, during mapping operations;
 - e. Create daily standard mapping products;
 - f. Follow UCH SOPs as identified in Appendix H;
 - g. Collect sun photometer measurements as part of survey of opportunity;

6. Data Management
 - a. Provide a foundation of publicly accessible data and information products to spur further exploration, research, and management activities;
 - b. Provide daily products to shore for operational decision making purposes;
 - c. Test protocols and procedures for handling the data from the Telestream video recording system;
 - d. Cross train existing ROV dedicated personnel;
 - e. Formalize Data Management SOPs;
 - f. Follow UCH SOPs as identified in Appendix H;
 - g. Work on plans for GFOE network to be installed during the winter inport.

7. Outreach
 - a. Engage the general public in ocean exploration through live video and timely content (daily updates, topical essays and web logs, highlight videos, video clips, still imagery and mapping products) posted on the Ocean Explorer website;
 - b. Host live events and interactions with shore. Final list is TBD, current list can be viewed here:
https://docs.google.com/a/noaa.gov/document/d/19EtjRa7QQuXlf5-EaHCiXeF9F8x9j_y-rsSWYZHxR1M/edit?usp=sharing
 - c. Conduct VIP live interactions



- i. OMAO Intergovernmental Working Group interaction at MTS OCEANS 2017 (9/20)
 - ii. IMPAC4 conference with NMFS partners (9/7)
 - iii. US Fish and Wildlife at Silver Spring ECC (9/21)
 - iv. Additional events TBD;
 - d. Conduct ship tours for the public, students, teachers, managers and officials while in port in Honolulu on 10/1;
 - e. More TBD.

8. Ship

- a. Provide a high quality stable internet connection with the VSAT;
- b. Provide stable and reliable VoIP telecommunications;
- c. Continue training new deck department personnel in ROV launch and recovery;
- d. Participate in outreach activities while in Honolulu- no crew involvement, officers to supply the OOD for gangway and bridge discussion;
- e. Develop and maintain proficiency with small boat operations for new and long term crew;
- f. Continue troubleshooting the CTD rosette;
- g. Conduct CTD operations as requested and able;
- h. Aft Conn Training;
- i. Follow UCH SOPs as identified in Appendix H;
- j. Potential for USCG Medevac Training Exercise on day of departure (TBD depending on availability of USCG);
- k. Potential for scuba diving operations for training or safety drills;
- l. Additional safety training.

E. Participating Institutions

- National Oceanic and Atmospheric Administration (NOAA), Office of Ocean Exploration and Research (OER)—1315 East-West Hwy, Silver Spring, MD 20910 USA
- NOAA, National Oceanographic Data Center, National Coastal Data Development Center, Stennis Space Center MS, 39529 USA
- University Corporation for Atmospheric Research Joint Office for Science Support (JOSS), PO Box 3000 Boulder, CO 80307 USA
- University of Hawai'i at Manoa- 2500 Campus Rd, Honolulu, HI 96822
- University of New Hampshire (UNH) Center for Coastal and Ocean Mapping (CCOM) Jere A. Chase Ocean Engineering Lab, 24 Colovos Rd, Durham, NH 03824 USA
- Global Foundation for Ocean Exploration, P.O. Box 417, Mystic, CT 06355
- NOAA National Marine Fisheries Service, Pacific Islands Regional Office, 1845 Wasp Blvd, Honolulu, HI 96818
- NOAA National Marine Fisheries Service, Marine National Monuments Program, 1845 Wasp Blvd, Honolulu, HI 96818



- NOAA National Marine Sanctuary of American Samoa, P.O. Box 4318, Pago Pago, American Samoa 96799
- NOAA National Marine Fisheries Service, Pacific Islands Fisheries Science Center, 1845 Wasp Blvd, Honolulu, HI 96818

F. Personnel (Mission Party)

Table 2: Full list of seagoing mission party members and their affiliations

#	Name (First, Last)	Title	Date Aboard	Date Disembark	Gender	Affiliation	Nationality
1	Kasey Cantwell	Expedition Coordinator	9/3	10/3	F	OER	USA
2	Meagan Putts	Biology Science Lead	9/3	10/3	F	UCAR/ Univ. of Hawaii	USA
3	John Smith	Geology Science Lead	9/3	10/3	M	UCAR/ Univ. of Hawaii	USA
4	Nolan Barrett	Sample Data Manager	9/4	10/3	M		USA
5	Michael White	Mapping Lead	9/3	10/3	M	OER	USA
6	Amanda Bittinger	Mapping Watch Lead	9/3	10/3	F	UCAR	USA
7	Karl McLetchie	Engineering Team Lead	9/4	10/3	M	GFOE	USA
8	Andy O'Brien	Engineering Team	9/3	10/3	M	GFOE	USA
9	Fernando Aragon	Engineering Team	9/3	10/3	M	GFOE	Colombian/ US Permanent Resident
10	Andy Lister	Engineering Team	9/4	10/3	M	GFOE	USA
11	Levi Unema	Engineering Team	9/3	10/3	M	GFOE	USA
12	Jeffrey Laning	Engineering Team	9/3	10/3	M	GFOE	USA
13	Sean Kennison	Engineering Team	9/3	10/3	M	GFOE	USA
14	Dave Casagrande	Engineering Team	9/3	10/3	M	GFOE	USA
15	Jon Mefford	Engineering Team	9/3	10/3	M	GFOE	USA
16	Dan Rogers	Engineering Team	9/3	10/3	M	GFOE	USA
17	Caitlin Bailey	Engineering	9/3	10/3	F	GFOE	USA

		Team					
18	Roland Brian	Engineering Team	9/3	10/3	M	GFOE	USA
19	Art Howard	Engineering Team	9/3	10/3	M	GFOE	USA
20	Bob Knott	Engineering Team	9/3	10/3	M	GFOE	USA
21	Katie Wagner	Web Coordinator	9/3	10/3	F	OER	USA

G. Administrative

1. Points of Contact:

Ship Operations

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439 West York Street
Norfolk, VA 23510-1145
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Fax: (757) 441-6495

Chief, Operations Division, Atlantic (MOA)
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LTJG(Sel) Bryan Brasher
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Other Mission Contacts

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Alan Leonardi, Director
NOAA Ocean Exploration & Research



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Mobile: 202-631-1790
E-mail: alan.leonardi@noaa.gov

Vessel Shipping Address

1. Shipments

Send an email to the *Okeanos Explorer* Operations Officer at OPS.Explorer@noaa.gov indicating the size and number of items being shipped.

[Contact Name]
NOAA Ship OKEANOS EXPLORER
1897 Ranger Loop Road
Ford Island BLDG 184
Honolulu, HI 96818

2. Diplomatic Clearances

None required

3. Licenses and Permits

A permit to collect CITES listed species was received from US Fish and Wildlife Service on 8/6/17. This permit covers all sampling operations conducted outside of the US EEZ. Permit requirements may trigger additional inspections of the vessel and samples collected upon return to Honolulu, HI. Please see Appendix G for the full text.

Pursuant to the National Environmental Policy Act (NEPA), NOAA OER is required to include in its planning and decision-making processes appropriate and careful consideration of the potential environmental consequences of actions it proposes to fund, authorize and/or conduct. NOAA's Administrative Order (NAO) 216-6A Companion Manual describes the agency's specific procedures for NEPA compliance. Among these is the need to review all proposed NOAA-supported field projects for their environmental effects. A categorical exclusion (CE) evaluation memorandum has been completed for this survey, in accordance with Section 4 of the Companion Manual. This evaluation document memorandum describes EX1708 and explains how it is consistent with one or more of the CE categories listed/described in Appendix E of the Companion Manual. The completed evaluation document also summarizes the review conducted to determine that no extraordinary circumstances exist that would preclude the use of a CE or require preparation of an environmental assessment or environmental impact statement (Appendix C).



Informal consultation was initiated under Section 7 of the Endangered Species Act (ESA), requesting NOAA Fisheries’ Protected Resources Division concurrence with our biological evaluation determining that 2016 Marianas Expedition and all other planned *Okeanos Explorer* operations during the 2016-17 field season, may affect, but are not likely to adversely affect, ESA-listed marine species. The informal consultation was completed on February 3, 2016 when NOAA OER received a signed letter from the Regional Administrator of NMFS Pacific Islands Regional Office, stating that NMFS concurs with OER’s determination that conducting proposed *Okeanos Explorer* cruises are not likely to adversely affect ESA-listed marine species (Appendix D).

OER has completed consultation with NOAA's Habitat Conservation Division on potential impacts of our operations to Essential Fish Habitat (EFH). They concurred that our operations would not adversely affect EFH provided adherence to our proposed procedures and their guidance stated in the letter (Appendix E).

II. Operations

The Expedition Coordinator is responsible for ensuring the scientific staff are trained in planned operations and are knowledgeable of project objectives, priorities and environmental compliance procedures. The Commanding Officer is responsible for ensuring all operations conform to the ship’s accepted practices and procedures.

A. Project Itinerary

All times and dates are subject to prevailing conditions and the discretion of the Commanding Officer. Locations are approximate. Final dive sites will be delivered to the bridge at night for the next day’s dive. A KMZ of ROV dive plans for EX1708 can be found [here](#). Transit estimates calculated with 9.3 kts.

Date	Activities
9/3/2017	EX1708 personnel arrive
9/4/2017	Mobilization. High voltage and hydraulics needed by ROV team.
9/5/2017	Mobilization. High voltage and hydraulics needed by ROV team. Science team dive planning meeting at 0930 – 1130. Operations and safety brief at 1230 for the mission team, followed by introductory meeting with new personnel.
9/6/2017	Depart Ford Island at 0900 and transit to “Tropic of Cancer” Seamount. Mapping operations commence in open water. There is potential for a section of this transit, immediately following the departure from Pearl Harbor, will be

	restricted UCH data. Normal operations would resume after the completion of the UCH survey. Mission prep for first dive.
9/7/2017	Dive 01: "Tropic of Cancer" Seamount (23°17'24.47"N; 158°21'50.89"W). Shortened dive (recovery at 1430). Overnight mapping operations.
9/8/2017	Dive 02: Blackfin Ridge (25°54'32.75"N; 158°20'5.02"W). Shortened dive (deployment at 1030, or as the team is ready based upon arrival on station and drift test completion). Overnight mapping operations.
9/9/2017	Dive 03: Beethoven Ridge (26°14'22.44"N; 159°29'29.67"W). Overnight mapping operations.
9/10/2017	Dive 04: Sibelius Seamount/Gershwin Ridge (27°13'9.60"N; 160°42'25.85"W) + midwater transects. Extended dive (recovery at 1830). Overnight mapping operations.
9/11/2017	Dive 05: Ridge Cone (27°52'34.32"N; 161°17'5.70"W). Overnight mapping operations.
9/12/2017	Dive 06: Liszt Seamount (28°55'18.37"N; 162° 2'55.30"W). Overnight mapping operations.
9/13/2017	Dive 07: Debussy Seamount (30°20'31.96"N; 162° 2'15.25"W) + midwater transects. Extended dive (recovery at 1830). Overnight mapping operations.
9/14/2017	Dive 08: Wagner Seamount (31°42'36.17"N; 162°54'40.14"W). Overnight mapping operations.
9/15/2017	Dive 09: Bellini Seamount (32°38'29.36"N; 163°22'34.37"W). Overnight mapping operations.
9/16/2017	Dive 10: Shostakovich Seamount (33°16'9.72"N; 164°44'59.82"W) + midwater transects. Extended dive (recovery at 1830). Overnight mapping operations.
9/17/2017	Dive 11: Midwater dive 1. Location to be determined by mapping operations and transit speeds. Overnight mapping operations.
9/18/2017	Dive 12: Mahler Seamount (31°44'8.27"N; 164°56'35.82"W) + midwater transects (recovery at 1830). Overnight mapping operations.
9/19/2017	Dive 13: Mussorgsky Seamount (30°21'46.62"N; 163°51'23.40"W). Overnight mapping operations.
9/20/2017	Dive 14: Paganini Seamount (28°44'24.84"N; 162°36'15.06"W) + potential CTD operations post dive (depending on troubleshooting and need). Potential for a late deployment depending on transit time. Overnight mapping operations.
9/21/2017	Dive 15: Mozart Seamount (28°38'47.24"N, 161°48'19.57"W). Extended dive due to operating depth (recovery at 1830). Overnight mapping operations.
9/22/2017	Dive 16: Midwater dive 2. Location to be determined by mapping operations and transit speeds. Overnight mapping operations.
9/23/2017	Dive 17: Rapano Ridge (26°36'35.76"N; 160°41'11.10"W) + midwater transects. Extended dive (recovery at 1830). Overnight mapping operations.
9/24/2017	Dive 18: Schumann Seamount (25°43'8.28"N; 160° 9'36.75"W). Overnight mapping operations.
9/25/2017	Dive 19: Mendelsohn Seamount (25° 4'16.66"N; 161°43'43.94"W). Shortened dive to accommodate transit (recovery at 1530). Overnight mapping operations.



	Ship to avoid PMNM boundaries.
9/26/2017	Dive 20: Middle Bank (22°39'1.61"N; 160°56'1.55"W). Shortened dive due to transit to dive site (deploy at 0930 or as the team is ready based upon arrival on station and drift test completion). MOB drills with ship maneuvers post ROV recovery. Overnight mapping operations. Ship to avoid PMNM boundaries.
9/27/2017	Dive 21: Ka'ula (21°37'28.64"N; 160°27'11.10"W). Shortened dive to accommodate transit (recovery at 1530). Overnight mapping operations.
9/28/2017	Dive 22: Archaeology target 1 (TBD). UCH procedures in effect. Overnight mapping operations.
9/29/2017	Dive 23: Archaeology target 2 (TBD). UCH procedures in effect. Overnight mapping operations.
9/30/2017	Return to port- pull into University of Hawaii Pier in Honolulu, HI. Prep for ship tours and public event.
10/1/2017	Conduct public tours as part of the Festival of Exploration in conjunction with R/V Falkor. Tentative schedule: Media event 0900-1000. Public tours 1000-1700 pm. Last tour will start at approximately 1600.
10/2/2017	EX to transit to Ford Island. EX fueling in advance of EX1709. Tentative date for spooling of ROV excess cable.
10/3/2017	Destaging and prep for transit back to the Atlantic.

Table 2: Detailed Cruise Itinerary. This is an approximate itinerary and is subject to change based on community input, survey results, field conditions, and discretion of the CO. UCH procedures can be found in Appendix H.

B. Staging and Destaging

Minimal staging is expected as all mission equipment will be onboard already. Standard preparation for ROV expeditions is anticipated, which includes hydraulic use and high voltage operations. Crane operations may be needed to load the rock sample box onto the O-2 deck, if box is too unwieldy to carry by hand. If needed, box can be loaded at anytime prior to departure.

At the conclusion of EX1708 the following actions will be done to prepare for the transit back to the Atlantic:

- Offload of samples and restock of sampling supplies. Dates TBD until port event logistics are finalized. Crane operations will likely be needed on 10/3 to offload the rock sample box;
- ROV 0.68 cable needs to be re-spooled and loaded onto EX. Dates are TBD. Loading will likely take place in advance of EX1709;
- Second ROV van needs to be loaded onto EX. Dates TBD, likely in advance of EX1709;

- Potential relocation of *Seirios*. Pending if the ship would like the vehicle moved for transit. Will require ship's crane;
- ROV, video, sampling, and telepresence equipment secured for transit and potential for high seas;
- Normal SOPs for wrap up on an ROV expedition to be followed.

C. Operations to be Conducted

1. Telepresence / Outreach Events

- Three live video feeds will be used throughout the cruise to provide situational awareness for onshore personnel.
- Final list is TBD, current list can be viewed here:
https://docs.google.com/a/noaa.gov/document/d/19EtjRa7QQuxlf5-EaHCiXeF9F8x9j_y-rsSWYZHxR1M/edit?usp=sharing
- 2-3 NOAA VIP interactions are expected with Silver Spring ECC
 - US Fish and Wildlife at Silver Spring ECC (9/21)
 - Other events are still being finalized
- OMAO Intergovernmental Working Group interaction at MTS OCEANS 2017 (9/20) in Anchorage, AK
- IMPAC4 conference with NMFS partners (9/7)
- Additional live events are likely but TBD

2. In-Port Events

- Public ship tours in conjunction with R/V Falkor are planned for on 10/1.
- Tours will be handled primarily by OER and GFOE personnel with assistance from the ship requested on the bridge, for VIP greetings, and gangway safety. No crew involvement is expected, officers to supply the OOD for gangway and bridge discussion and CO to be engaged as available for VIP and media meet and greets.

Tentative In port schedule

This schedule is still evolving. The ship will be kept up to date with changes as more details are made available.

Saturday	Sunday	Monday	Tuesday	Wednesday
9/30 0700: EX at the Pearl Harbor sea buoy. Mission	10/1 Festival of Exploration 0900-1000:	10/2 EX departs UH Marine Center Mission team	10/3 Mission team cruise wrap up and prep for transit to	10/4 Potential for Mission team cruise wrap up and prep for



operations complete. EX arrives into UH Marine Center 0900-1700: Prepare for ship tours. Staging for port event.	Media event 0900: Opening remarks followed by media tour 1000-1600: Public tours. Last tour departs at 1500. 1600-1730: Wrap up and close out event	cruise wrap up EX Fuels EX returns to Ford Island 0830-1700: CAPSTONE Closeout Meeting TBD- ROV 0.68 removed cable spooling	Atlantic Offload supplies Mission team should be moved off the ship by this evening	transit to Atlantic
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D. SCUBA Dive Plan

All dives are to be conducted in accordance with the requirements and regulations of the [NOAA Diving Program](#) and require the approval of the ship’s Commanding Officer. No science dives are planned during EX1708, but the ship may plan training, safety drill, or maintenance dives.

E. Applicable Restrictions

Sonar Operations

EM 302, EK 60, ADCP, and sub-bottom profiler data acquisition is planned for this cruise. All data acquisition will be conducted in accordance with established standard operating procedures under the direction of the mapping team lead. These operating procedures will include protection measures when operating in the vicinity of marine mammals, sea turtles or Endangered Species Act-listed species as described in appendices of this document. The final decision to operate and collect 24-hour sub-bottom profiler data will be at the discretion of the Commanding Officer.

III. Equipment

A. Equipment and capabilities provided by the ship

- Kongsberg Simrad EM302 Multibeam Echosounder (MBES)

- Kongsberg Simrad EK60 Deepwater Echosounders and GPTs (18, 70, 120, 200 kHz)
- Knudsen Chirp 3260 Sub-bottom profiler (SBP)
- Teledyne RDI Workhorse Mariner (300 kHz) ADCP
- Teledyne RDI Ocean Surveyor (38 kHz) ADCP – not operable
- Teledyne Underway CTD
- LHM Sippican XBT Mark21 System(Deep Blue probes)
- AOML Automated XBT Launcher (Deep Blue probes)
- Seabird SBE 911Plus CTD
- Seabird SBE 32 Carousel and 24 2.5 L Niskin Bottles
- Light Scattering Sensor (LSS)
- Oxidation – Reduction Potential (ORP)
- Dissolved Oxygen (DO) sensor
- Altimeter Sensor and battery pack
- MarineStar GPS
- POS/MV
- Seabird SBE-45 (Micro TSG)
- Kongsberg Dynamic Positioning-1 System
- Netshares mapping storage system
- IVS Fledermaus Software suite
- SIS Software
- Hypack Software
- Scientific Computing System (SCS)
- ECDIS
- Met/Wx Sensor Package
- Telepresence System
- VSAT High-Speed link (Comtech 20 Mbps ship to shore; 2 Mbps shore to ship)
- Cruise Information Management System (CIMS)
- Three VoIP telephone lines
- 1 functioning and seaworthy SOLAS approved fast rescue boat
- 1 functioning and seaworthy work boat to support ROV operations and personnel transfers

B. Equipment and capabilities provided by the scientists

- Microtops II Ozone Monitor Sun photometer and handheld GPS required for NASA Marine Aerosols Network supplementary project.

- NOAA OER 6000 m *Deep Discoverer* ROV (***currently capable of 4,500 m with shortened 0.68 wire**)
- NOAA *Seirios* Camera Platform

IV. Hazardous Materials

A. Policy and Compliance

The Expedition Coordinator is responsible for complying with FEC 07 Hazardous Materials and Hazardous Waste Management Requirements for Visiting Scientific Parties (or the OMAO procedure that supersedes it). The Expedition Coordinator and Science Team Lead will be responsible for transporting all samples and HAZMAT on and off the ship. 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, MSDS, appropriate spill cleanup materials (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.

Per OMAO procedure, the scientific party will include with their project instructions and provide to the CO of the respective ship 30 days before departure:

- List of chemicals by name with anticipated quantity
- List of spill response materials, including neutralizing agents, buffers, and absorbents
- Chemical safety and spill response procedures, such as excerpts of the program's Chemical Hygiene Plan or SOPs relevant for shipboard laboratories
- For bulk quantities of chemicals in excess of 50 gallons total or in containers larger than 10 gallons each, notify ship's Operations Officer regarding quantity, packaging and chemical to verify safe stowage is available as soon as chemical quantities are known.

Upon embarkation and prior to loading hazardous materials aboard the vessel, the scientific party will provide to the CO or their designee:

- An inventory list showing actual amount of hazardous material brought aboard
- An MSDS for each material
- 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

- Confirmation that chemical safety and spill response procedures were brought aboard

Upon departure from the ship, scientific parties will provide the CO or their designee an inventory showing that all chemicals were removed from the vessel. The CO's designee will maintain a log to track scientific party hazardous materials. MSDS will be made available to the ship's complement, in compliance with Hazard Communication Laws.

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.

B. Inventory

Item	Use	Approx. locations
95% Denatured Ethanol (20 gallons)	Sample preservation	Wetlab, under the chemical hood
10% Buffered Formalin (2 gallons)	Sample preservation	Wetlab, under the chemical hood
Chaos Buffer (0.5 gallons) (4 M guanidine thiocyanate, 0.5% N-laurosylsarcosine, 25 mMTris pH 8.0, 0.1 M beta-mercaptoethanol)	Sample preservation (genetics)	Wetlab, under the chemical hood
Aqua Shield	Underwater Lubricant	ROV Workshop Fire Cabinet, Pit
Dow Corning 4	Electrical insulating compound	ROV Workshop Fire Cabinet, Pit
Fluid Film Spray	Silicone Lubricant	ROV Workshop Fire Cabinet
Isopropanol Alcohol (35 gallons)	Solvent	ROV Workshop Fire cabinet
Scotchkote	Electrical insulating compound	ROV Workshop Fire cabinet
3M Silicone Spray	Silicone Lubricant	ROV Workshop Fire cabinet
Synthetic AW Hydraulic Oil, ISO-22	Amsoil (AWG-05)	Hanger, Pit, Vehicles
Tap Magic Cutting Fluid	Cutting/Machining Lubricant	ROV Workshop Fire cabinet
Tap Magic Heavyweight Cutting Fluid	Cutting/Machining Lubricant	ROV Workshop Fire cabinet
Tuff Coat M	Marine Lubricant	Winch room
Dow Corning Molykote 111	Valve Lubricant and Sealant	ROV Workshop Fire cabinet, Pit
WD40	Lubricant	ROV Workshop Fire cabinet
Loktite	Bolt adhesive	ROV Workshop Fire cabinet
Mineral Oil	Vitrea	Hanger, Vehicles
Por-15	Paint Kit	ROV Workshop Fire cabinet
Univis HVI 13	Hydraulic Fluid	Hanger, ROV D2

Ultratane	Butane fuel	ROV Workshop fire cabinet
Rust-oleum	Protective Enamel	ROV Workshop fire cabinet
Flux-Off	Soldering Flux remover	ROV Workshop fire cabinet
Propane	Torch Fuel	ROV Workshop fire cabinet
Adhesive Pliobond 25	General adhesive	Tool room
AP 120 Metal Prep	Degreaser/cleaner for metal surfaces	Pit
Butane Fuel	Torch refill	Tool Room
PVC cement	Adhesive for PFV plastic piping	Tool Room
Phosphoric Acid	Ferrous metal rust removal	Tool room
Pipetite Paste	Plumbing sealant	Tool room/pit
Spindle Oil 10, ROS PT	Lubricant/compensation oil	Tool room
DC557	Silicon grease	Tool room/pit
Tether Potting Catalyst	Two part epoxy catalyst	Pit
Tether Potting Compound	Two part epoxy ingredient	Pit
ThermaPlex Bearing Grease	Lubricant	Pit
Tritech Seaking	Compensator oil for sonar head	Pit

C. Chemical safety and spill response procedures

All safety and spill response procedures will be handled according to OMAO guidelines and following the manufacturers' MSDS which has been provided to the ship's ECO.

D. Radioactive Materials

NOT APPLICABLE TO THIS CRUISE

V. Additional Projects

A. Supplementary Projects

NASA Maritime Aerosol Network

During the cruise the marine aerosol layer observations will be collected for the NASA Maritime Aerosol Network (MAN). Observations will be made by mission personnel (as time allows) with

a sun photometer instrument provided by the NASA MAN program. Resulting data will be delivered to the NASA MAN primary investigator Alexander Smirnov by the expedition coordinator. All collected data will be archived and publically available at: http://aeronet.gsfc.nasa.gov/new_web/maritime_aerosol_network.html

Equipment resides on the ship and is stewarded by the Expedition Coordinator.

See Appendix F for full Survey of Opportunity Form.

B. NOAA Fleet Ancillary Projects

No NOAA Fleet Ancillary Projects are planned.

VI. Disposition of Data and Reports

A. Data Responsibilities

All data acquired on *Okeanos Explorer* will be provided to the public archives without proprietary rights. All data management activities shall be executed in accordance with [NAO 212-15, Management of Environmental and Geospatial Data and Information](#)

Ship Responsibilities

The Commanding Officer is responsible for all data collected for missions until those data have been transferred to mission party designees. Data transfers will be documented on NOAA Form 61-29. Reporting and sending copies of project data to NESDIS (ROSCOP form) is the responsibility of OER.

NOAA OER Responsibilities

The Expedition Coordinator will work with the *Okeanos Explorer* Operations Officer to ensure data pipeline protocols are followed for final archive of all data acquired on *Okeanos Explorer* without proprietary rights. See Appendix B for detailed data management plans.

Deliverables

1. At sea
 - a. Daily plans of the Day (POD)
 - b. Daily situation reports (SITREPS)
 - c. Summary forms for each ROV dive

- d. Database containing records for each sample collection
- e. Summary forms for each CTD rosette cast
- f. Daily summary bathymetry data files
- g. Raw sonar files (EM 302, EK 60, Subbottom, ADCP)
- 2. Post cruise
 - a. Refined SOPs for all pertinent operational activities
 - b. Assessments of all activities
- 3. Science
 - a. Multibeam raw and processed data (see appendix B for the formal cruise data management plan)
 - b. XBT raw and processed data
 - c. EK 60 raw data
 - d. Knudsen 3260 sub-bottom profiler raw data
 - e. ADCP raw data
 - f. Mapping data report
 - g. Cruise report

Archive

OER and ship will work together to ensure documentation and stewardship of acquired data sets in accordance with NAO 212-15. The Cruise Information Management System is the primary tool used to accomplish this activity.



VII. Meetings, Vessel Familiarization, and Project Evaluations

A. Shipboard Meetings

A safety brief and overview of POD will occur on the Bridge each morning at 0800. Daily Operations Briefing meetings will be held at a time and location determined by Operations Officer based on watch schedule, to review the current day, and define operations, associated requirements, and staffing needs for the following day. A Plan of the Day (POD) will be posted each evening for the next day in specified locations throughout the ship. Daily Situation Reports (SITREPS) will be posted as well and shared daily through e-mail.

1. Pre-Project Meeting:

The Expedition Coordinator and Commanding Officer will conduct a meeting of 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 shall 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 Expedition Coordinator in arranging this meeting.

2. Vessel Familiarization Meeting:

The Commanding Officer is responsible for ensuring scientific personnel are familiarized with applicable sections of the standing orders and vessel protocols, e.g., meals, watches, etiquette, drills, etc. A vessel familiarization meeting shall be conducted in the first 24 hours of the project's start and is normally presented by the ship's Operations Officer.

3. Post-Project Meeting:

The Commanding Officer is responsible for conducting a meeting no earlier than 24 hours before or seven days after the completion of a project to discuss the overall success, challenges, and shortcomings of the project. Concerns regarding safety, efficiency, and suggestions for future improvements shall be discussed and mitigations for future projects will be documented for future use. This meeting shall be attended by the applicable ship's officers, applicable crew, the Expedition Coordinator, and members of the scientific party and is normally arranged by the Operations Officer and Expedition Coordinator.

4. Project Evaluation Report:



Within seven days of the completion of the project, a Customer Satisfaction Survey is to be completed by the Expedition Coordinator. The form is available at https://docs.google.com/a/noaa.gov/forms/d/1a5hCCkglwaSII4DmrHPudAehQ9HqhRqY3J_FXqbJp9g/viewform and provides a “Submit” button at the end of the form. 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 ship, specific concerns and praises are followed up on while not divulging the identity of the evaluator.

VIII. Miscellaneous

A. Meals and Berthing

The ship will provide meals for the scientists listed above. Meals will be served 3 times daily beginning one hour before scheduled departure, extending throughout the project, and ending two 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. Special dietary requirements for scientific participants will be made available to the ship’s command at least twenty-one days prior to the survey (e.g., Expedition Coordinator is allergic to fin fish).

Berthing requirements, including number and gender of the scientific party, will be provided to the ship by the Expedition Coordinator. The Expedition Coordinator and Operations Officer 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. The Expedition Coordinator 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 which were issued. The Expedition Coordinator is also responsible for the cleanliness of the laboratory spaces and the storage areas utilized by the scientific party, both during the cruise and at its conclusion prior to departing the ship.

All NOAA scientists will have proper travel orders when assigned to any NOAA ship. The Expedition Coordinator will ensure that all non-NOAA or non-Federal scientists aboard also have proper orders. It is the responsibility of the Expedition Coordinator 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.

All persons boarding NOAA vessels give implied consent to comply with all safety and security policies and regulations which are administered by the Commanding Officer. All spaces and equipment on the vessel are subject to inspection or search at any time. All personnel must comply with OMAO's Drug and Alcohol Policy dated May 7, 1999 which forbids the possession and/or use of illegal drugs and alcohol aboard NOAA Vessels.

B. Medical Forms and Emergency Contacts

The NOAA Health Services Questionnaire (NHSQ, NF 57-10-01 (3-14)) must be completed 30 days in advance by each participating scientist. The NHSQ can be obtained from the Expedition Coordinator or the NOAA website

<http://www.corporateservices.noaa.gov/noaaforms/eforms/nf57-10-01.pdf>.

All NHSQs submitted 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 the Regional Director of Health Services at the applicable Marine Operations Center. The NHSQ and Tuberculosis Screening Document should reach the Health Services Office no later than four weeks prior to the start of the project to allow time for the participant to obtain and submit additional information should health services require it, before clearance to sail can be granted. Please contact MOC Health Services with any questions regarding eligibility or completion of either form. Ensure to fully complete each form and indicate the ship or ships the participant will be sailing on. 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 (http://ocio.os.doc.gov/ITPolicyandPrograms/IT_Privacy/PROD01_008240).

The only secure email process approved by NOAA is Accellion Secure File Transfer which requires the sender to setup an account. Accellion's Web Users Guide is a valuable aid in using this service, however to reduce cost the DOC contract doesn't provide for automatically issuing full functioning accounts. To receive access to a "Send Tab," after your Accellion account has been established send an email from the associated email account to accellionAlerts@doc.gov requesting access to the "Send Tab" function. They will notify you via email, usually within one business day of your approval. The "Send Tab" function will be accessible for 30 days.

Contact Information:

Regional Director of Health Services
Marine Operations Center – Atlantic
439 W. York Street
Norfolk, VA 23510
Telephone: (757) 441.6320
Fax: (757) 441.3760
E-mail: MOA.Health.Services@noaa.gov

Please make sure the medical.explorer@noaa.gov email address is cc'd on all medical correspondence.

Prior to departure, the Expedition Coordinator must provide a listing of emergency contacts to the Operations Officer for all members of the scientific party, with the following information: name, address, relationship to member, and telephone number.

Emergency contact form is included as Appendix A.

C. Shipboard Safety

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.

Wearing open-toed footwear or shoes that do not completely enclose the foot (such as sandals or clogs) outside of private berthing areas is not permitted. Steel-toed shoes are required to participate in any work dealing with suspended loads, including CTD deployments and recovery. The ship does not provide steel-toed boots. Hard hats are also 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.

Operational Risk Management: For every operation to be conducted aboard the ship (NOAA-wide initiative), risk management procedures will be followed. For each operation, risks will be identified and assessed for probability and severity. Risk mitigation strategies/measures will be investigated and implemented where possible. After mitigation, the residual risk will have to be assessed to make Go-No Go decisions for the operations. Particularly with new operations, risk assessment will be ongoing and updated as necessary. This does not only apply to over-the-side operations, but to everyday tasks aboard the vessel that pose risk to personnel and property.

- CTD, ROV (and other pertinent) ORM documents will be followed by all personnel working onboard *Okeanos Explorer*.

- All personnel onboard are in the position of calling a halt to operations/activities in the event of a safety concern.

D. Communications

A daily situation report (SITREP) on operations prepared by the Expedition Coordinator will be relayed to the program office. Sometimes it is necessary for the Expedition Coordinator to communicate with another vessel, aircraft, or shore facility. Through various modes of communication, the ship is able to maintain contact with the Marine Operations Center on an as needed basis. These methods will be made available to the Expedition Coordinator upon request, in order to conduct official business. The ship's primary means of communication with the Marine Operations Center is via e-mail and the Very Small Aperture Terminal (VSAT) link. VSAT bandwidth at 15Mbps will be paid by OER and provided by OMAO.

Specific information on how to contact NOAA Ship *Okeanos Explorer* and all other fleet vessels can be found at <http://www.moc.noaa.gov/MOC/phone.html#EX>

Important Telephone and Facsimile Numbers and E-mail Addresses

Ocean Exploration and Research (OER):

OER Program Administration

Phone: (301) 734-1010

Fax: (301) 713-4252

E-mail: Firstname.Lastname@noaa.gov

University of New Hampshire, Center for Coastal and Ocean Mapping

Phone: (603) 862-3438

Fax: (603) 862-0839

NOAA Ship *Okeanos Explorer* - Telephone methods listed in order of increasing expense:

Okeanos Explorer Cellular: (401) 713-4114

Okeanos Explorer Iridium:(808) 659-9179

OER Mission Iridium (dry lab): (808) 851-3827

EX INMARSAT B

Line 1: 011-870-764-852-328

Line 2: 011-870-764-852-329

Voice Over IP (VoIP) Phone:

(541) 867-8932



(541) 867-8933

(541) 867-8934

E-mail: Ops.Explorer@noaa.gov- (mention the person's name in SUBJECT field)

E-mail: expeditioncoordinator.explorer@noaa.gov for dissemination of all hands emails by Expedition Coordinator while onboard. See ET for password.

E. IT Security

1. Any computer that will be hooked into the ship's network must comply with the OMAO Fleet IT Security Policy 1.1 (November 4, 2005) prior to establishing a direct connection to the NOAA WAN. Requirements include, but are not limited to: 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.

Completion of these requirements prior to boarding the ship is required.

Non-NOAA personnel using the ship's computers or connecting their own computers to the ship's network must complete NOAA's IT Security Awareness Course within three days of embarking.

F. Foreign National Guests Access to OMAO Facilities and Platforms

There are no foreign national guests sailing on EX1708.

Appendix A

EMERGENCY CONTACT DATA SHEET—NOAA SHIP *OKEANOS EXPLORER*

Scientists sailing aboard *Okeanos Explorer* shall fill out the form found at the following link location:

https://docs.google.com/a/noaa.gov/forms/d/1pcoSgPluUVxaY64CM1hJ75I1iiYirTk48G-lv37Am_k/viewform with their emergency contact information



Appendix B: Data Management Plan

Data Management Plan

Okeanos Explorer (EX1708): Musicians Seamounts (ROV & Mapping)



Ocean Exploration and Research

OER Data Management Objectives

Normal data pipelines are expected from this mission. A new sample data manager will be trained.

17-Aug-17

Page 1

1. General Description of Data to be Managed

17.1 Name and Purpose of the Data Collection Project

Okeanos Explorer (EX1708): Musicians Seamounts (ROV & Mapping)

17.2 Summary description of the data to be collected.

Operations for this cruise will be conducted 24 hours/day and consist of daily remotely operated vehicle (ROV), overnight mapping, and full shore-based participation via telepresence. Operations will include the use of the ship's deep water mapping systems (Kongsberg EM302 multibeam sonar, EK60 split-beam fisheries sonars, Knudsen 3260 chirp sub-bottom profiler sonar, and Teledyne Acoustic Doppler Current Profilers), XBT and CTD casts in support of multibeam sonar mapping operations, OER's two-body ROV Deep Discoverer and Seirios, and the ship's high-bandwidth satellite connection for continuous real-time ship-to-shore communications. Operations are planned in and around Hawaii, the US EEZ, and in the High Seas around the Musicians Seamounts.

17.3 Keywords or phrases that could be used to enable users to find the data.

expedition, exploration, explorer, marine education, noaa, ocean, ocean discovery, ocean education, ocean exploration, ocean exploration and research, ocean literacy, ocean research, OER, science, scientific mission, scientific research, sea, stewardship, systematic exploration, technology, transformational research, undersea, underwater, Davisville, mapping survey, multibeam, multibeam backscatter, multibeam sonar, multi-beam sonar, noaa fleet, okeanos, okeanos explorer, R337, Rhode Island, scientific computing system, SCS, single beam sonar, singlebeam sonar, single-beam sonar, sub-bottom profile, water column backscatter, oceans, Musician Seamounts, Hawaii, CAPSTONE, telepresence-based exploration, Prime Crust Zone, deep-sea minerals, plate tectonics, subduction zone, deep sea corals, sponge communities, Central Pacific Seamounts

17.4 If this mission is part of a series of missions, what is the series name?

CAPSTONE, Okeanos ROV Cruises

17.5 Planned or actual temporal coverage of the data.

Dates: 9/6/2017 to 9/30/2017

17.6 Planned or actual geographic coverage of the data.

Latitude Boundaries: 20.62 to 33.03

Longitude Boundaries: -166.46 to -158.09

17.7 What data types will you be creating or capturing and submitting for archive?

Cruise Plan, Cruise Summary, Data Management Plan, Highlight Images, Quick Look Report, CTD (processed), CTD (product), CTD (raw), Dive Summaries, EK60 Singlebeam Data, Expedition Cruise Report, HDCS, Highlight Video,

Okeanos Explorer (EX1708): Musicians Seamounts (ROV & Mapping)



Ocean Exploration and Research

Images, Mapping Summary, Multibeam (image), Multibeam (processed), Multibeam (product), Multibeam (raw), NetCDF, Raw Video (digital), Raw video inventory logs, Sample Analysis Reports, Sample Logs, SCS Output (compressed), SCS Output (native), Sub-Bottom Profile data, Temperature data, Water Column Backscatter, XBT (raw), Bottom Backscatter, ADCP

17.8 What platforms will be employed during this mission?

NOAA Ship Okeanos Explorer, Deep Discoverer ROV, SEIRIOS Camera Sled

2. Point of Contact for this Data Producing Project

Overall POC: Kasey Cantwell
 Title: Expedition Coordinator
 Affiliation/Dept: NOAA Office of Ocean Exploration and Research
 E-Mail: kasey.cantwell@noaa.gov
 Phone: 301-734-1050

3. Point of Contact for Managing the Data

Data POC Name: Andrew O'Brien, Nolan Barrett, Susan Gottfried
 Title: Onboard/Shoreside Data Manager, Sampling Operations Data Manager, Data Stewardship Team Lead
 E-Mail: andrew.obrien@tgfoe.org, barrettnh@g.cofc.edu, susan.gottfried@noaa.gov

4. Resources

- 4.1 Have resources for management of these data been identified? True
- 4.2 Approximate percentage of the budget devoted to data management. (specify % or "unknown")
 unknown

5. Data Lineage and Quality

5.1 What is the processing workflow from collection to public release?

SCS data shall be delivered in its native format as well as an archive-ready, documented, and compressed NetCDF3 format to NCEI-MD; multibeam data and metadata will be compressed and delivered in a bagit format to NCEI-CO

5.2 What quality control procedures will be employed?

Quality control procedures for the data from the Kongsberg EM302 is handled at UNH CCOM/JHC. Raw (level-0) bathymetry files are cleaned/edited into new data files (level-1) and converted to a variety of products (level-2). Data from sensors monitored through the SCS are archived in their native format and are not quality controlled. Data from CTD casts and XBT firings are archived in their native format. CTDs are post-processed by the data management team as a quality control measure and customized CTD profiles are generated for display on the Okeanos Atlas (explore.noaa.gov/okeanosatlas).

6. Data Documentation

- 6.1 Does the metadata comply with the Data Documentation Directive? True

Okeanos Explorer (EX1708): Musicians Seamounts (ROV & Mapping)



6.1.1 If metadata are non-existent or non-compliant, please explain:

not applicable

6.2 Where will the metadata be hosted?

Organization: An ISO format collection-level metadata record will be generated during pre-cruise planning and published in an OER catalog and Web Accessible Folder (WAF) hosted at NCEI-MS for public discovery and access. The record will be harvested by data.gov.

URL: <https://www.ncddc.noaa.gov/oer-waf/ISO/Resolved/2017/>

Meta Std: ISO 19115-2 Geographic Information with Extensions for Imagery and Gridded Data will be the metadata standard employed; a NetCDF3 standard for oceanographic data will be employed for the SCS data; the Library of Congress standard, MACHINE READABLE CATALOG (MARC), will be employed for NOAA Central Library records.

6.3 Process for producing and maintaining metadata:

Metadata will be generated via xml editors or metadata generation tools.

7. Data Access**7.1 Do the data comply with the Data Access Directive?**

True

7.1.1 If the data will not be available to the public, or with limitations, provide a valid reason.

Not Applicable

7.1.2 If there are limitations, describe how data are protected from unauthorized access.

Account access to mission systems are maintained and controlled by the Program. Data access prior to public accessibility is documented through the use of Data Request forms and standard operating procedures.

7.2 Name and URL of organization or facility providing data access.

Org: National Centers Environmental Information

URL: <https://www.ncei.noaa.gov/access>

7.3 Approximate delay between data collection and dissemination. By what authority?

Hold Time: no

Authority: not applicable

7.4 Prepare a Data Access Statement

No data access constraints, unless data are protected under the National Historic Preservation Act of 1966.

8. Data Preservation and Protection**8.1 Actual or planned long-term data archive location:**

Data from this mission will be preserved and stewarded through the NOAA National Centers for Environmental Information. Refer to the Okeanos Explorer FY17 Data Management Plan at NOAA's EDMC DMP Repository (EX_FY16_DMP_Final.pdf) for detailed descriptions of the processes, procedures, and partners involved in this collaborative effort.

8.2 If no archive planned, why?

not applicable

Okeanos Explorer (EX1708): Musicians Seamounts (ROV & Mapping)



8.3 If any delay between data collection and submission to an archive facility, please explain.

60-90 days

8.4 How will data be protected from accidental or malicious modification or deletion?

Data management standard operating procedures minimizing accidental or malicious modification or deletion are in place aboard the Okeanos Explorer and will be enforced.

8.5 Prepare a Data Use Statement

Data use shall be credited to NOAA Office of Ocean Exploration and Research.

Okeanos Explorer (EX1708): Musicians Seamounts (ROV & Mapping)



Appendix C: Categorical Exclusion

Form Version: June 2017

Categorical Exclusion (CE) Evaluation Worksheet

Project Title: EX-17-08, Musicians Seamounts (ROV & Mapping)

Date Review Completed: 8/31/2017

Completed by: Craig Russell, NOAA Office of Ocean Exploration and Research

Worksheet File Name: 2017-09-OER-CE-EX1708

Step 1. CE applicability

1. What is the proposed federal action?

The proposed action is to collect baseline mapping data using the NOAA Ship *Okeanos Explorer's* sonar systems and to conduct baseline characterizations of unexplored areas using NOAA's two-body remotely operated vehicle (ROV) and CTD rosette system on the NOAA Ship *Okeanos Explorer*. ROV operations will include collection of detailed high resolution imagery, collection of limited biological and geological samples, digital sensor data collection.

The expedition will conduct operations in the US Exclusive Economic Zone (EEZ) around Hawaii and in international waters around the Musicians Seamounts, commencing on September 6, 2017 in Honolulu, HI (14° 16.3' S, 170° 41.22'W) and concluding on September 30, 2017 in Honolulu, Hawaii (21°18'57.80"N, 157°52'36.73"W) to. See Project Instructions EX-17-08 for more details.

2. Which class of CE in Appendix E of the NAO 216-6A Companion Manual is applicable to this action and why?

- a. The topical scope of this action is consistent with CE number E3 in Appendix E of the Companion Manual to NOAA Administrative Order (NAO) 216-6A:
- b. Activities to collect aquatic, terrestrial and atmospheric data in a non-destructive manner.

Step 2. Extraordinary Circumstances Consideration

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

No. The NOAA Ship *Okeanos Explorer* will be operating in remote deep sea areas of the Pacific Ocean. EX-17-08, an expedition of the NOAA CAPSTONE campaign, will focus operations in international waters around the Musicians Seamounts, with some operations in the US EEZ around Hawaii (see Table 1 of EX-17-08 Project Instructions: Bounding coordinates of the EX-17-08 operating area) This action does not involve any procedures



or outcomes known to result in impacts on human health and safety more than would be negligible.

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

This survey/expedition will conduct operations near Papahānaumokuākea Marine National Monument, but not within the Monument. OER made requests and received approvals to conduct operations in proximity to the Monument.

The Musicians Seamounts have never before been surveyed with a deep submergence vehicle, so it is difficult to say if the expedition will encounter unique communities. It is possible that the expedition will conduct operations in areas with the unique environmental characteristics, such as deep sea coral and sponge communities. However, the expedition is being planned and conducted in partnership with NOAA National Marine Fisheries Service (NMFS) Pacific Islands Regional Office (PIRO) Marine National Monument Program and the NMFS Pacific Islands Fisheries Science Center, management authorities affiliated and familiar with these areas, to ensure no more than negligible effects on these areas with potentially unique environmental characteristics.

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

OER has taken measures to ensure that any effects on species or habitats protected by the ESA, MMPA, MSA or NMSA meet the definition of “negligible”. In January 2016, a request from OER was submitted to the NMFS PIRO Protected Resources Division to initiate consultation under Section 7 of the ESA. Accompanying this request was a biological assessment that described the planned operations proposed for 2016-2017 expeditions in the Pacific and identified all ESA-listed species, including corals, in the vicinity of the operations. On February 7, 2016, OER received a letter that concurred with its determination that these 2016-2017 operations are not likely to adversely affect ESA-listed species. The ESA Section 7 concurrence letter is provided as Appendix D in the Project Instructions document for EX-17-08.

Given the offshore focus area of our work, it is highly improbable that we will encounter marine mammals protected under the MMPA or sea birds protected under the MBTA. If we did encounter any marine mammals or seabirds, our effect would be negligible because of the best management practices to which we adhere to avoid or minimize environmental effects.

OER also initiated a request for a Magnuson-Stevens Essential Fish Habitat (EFH) consultation for this same series of cruises and subsequently received a determination that the proposed cruises will not reduce the quality and/or quantity of EFH, provided adherence to the OER proposed procedures and the NMFS guidance were both conveyed via email from NMFS PIRO’s Richard Hall, dated November 30, 2016.



For operations beyond the US EEZ, OER obtained a permit from US Fish and Wildlife Service under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). OER's CITES permit (#17US36207C/9) covers the collection and importation of some listed organisms (*Antipatharia*, *Scleractinia*, and *Nautilidae*) for research purposes.

6. 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?

No. The cruise operations will be in compliance with FEC 07 Hazardous Materials and Hazardous Waste Management Requirements for Visiting Scientific Parties (or superseding OMAO procedures) to ensure generation, use, storage, transport, and disposal of such substances will not result in significant impacts.

7. 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?

During EX-17-08, we will be conducting ROV dives on sonar anomaly targets believed to be World War II era shipwrecks. If these anomalies are confirmed to be significant shipwrecks, they can potentially be eligible for listing on the National Register of Historic Places. OER takes care to conduct non-invasive surveys of archaeology targets and to protect the location of sensitive cultural heritage sites (UCH). Appendix H of the EX-17-08 project instructions includes OER's standard operating procedures for UCH sites. This expedition is being planned in conjunction with the NOAA Office of National Marine Sanctuaries' Maritime Heritage Program, and staff from the Maritime Heritage Program will participate in UCH operations to ensure that operations are non-invasive and compliant to all applicable regulations.

8. Would the action result in a disproportionately high and adverse effect on the health or the environment of minority or low-income communities, compared to the impacts on other communities (EO 12898)?

No, the NOAA Ship *Okeanos Explorer* will be operating in remote deep sea areas of the Pacific Ocean (see Table 1, EX 17-08 Project Instructions). There are no communities within the geographic scope of the cruise, and when nearshore, operations will be conducted several miles offshore. The cruise does not involve actions known or likely to result in adverse impacts on human health.



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?

No. During EX-17-08 the ship will not make landfall in areas other than commercial ports. The ship and OER mission team will comply with all applicable local and federal regulations regarding the prevention or spread of invasive species. At the completion of every ROV dive or CTD cast, the ROVs will be thoroughly rinsed with fresh water and completely dried to prevent spreading organisms from one site to another. Also the Engineering Department aboard the 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.

Additionally, per OER's CITES permit, if any CITES listed species are collected, US Fish and Wildlife will conduct an inspection upon return to port.

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

The proposed action **will not** result in any violations of Federal, State, or local law or requirements imposed for protection of the environment. The survey coordinator obtained (or are in the process of obtaining) authorizations and/or consultations pursuant to applicable laws. See responses to questions #4, 5, 6, and 7 for details.

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

No. The exploration activities will be localized and of short duration in any particular area at any given time. Given this project's scope and breadth, no notable or lasting changes or highly controversial effects to the environment will result.

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. While each cruise contributes to the overarching goal of exploring, mapping, and sampling the ocean, every cruise is independently useful and not connected to subsequent cruises.

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

No. The techniques and equipment used are standard for this type of field activity.



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?

By definition, actions that a federal agency classifies as a categorical exclusion have no potential, individually or cumulatively, to significantly affect the environment. This cruise is consistent with a class of CE established by NOAA, and there are no extraordinary circumstances for this action that may otherwise result in potentially significant impacts.

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.

Signature: 

Signed by: Craig Russell, Program Manager

Date Signed: 9/1/2017



Appendix D: ESA Section Letter of Concurrence



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Pacific Islands Regional Office
1845 Wasp Blvd., Bldg 176
Honolulu, Hawaii 96818
(808) 725-5000 • Fax: (808) 725-5215

Mr. John McDonough
Deputy Director
NOAA Office of Ocean Exploration and Research

Dear Mr. McDonough:

This letter responds to your January 14, 2016 Request for Consultation by the Office of Exploration and Research (OER) regarding efforts aboard the NOAA vessel *Okeanos Explorer* with the proposed action consisting of activities to explore and improve understanding of the distribution and diversity of deep water habitats in the Pacific, and in particular in the Marine National Monuments. You have requested our concurrence under Section 7 of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. §1531 et seq.), with your determination that the proposed action may affect but is not likely to adversely affect green, hawksbill, leatherback, olive ridley, and north Pacific loggerhead sea turtles; Main Hawaiian Islands false killer whale distinct population segment, humpback whales, blue whales, fin whales, sei whales, sperm whales, north Pacific right whales, the Indo-West Pacific and Central Pacific distinct population segment of the scalloped hammerhead shark, Hawaiian monk seals; and the coral species *Acropora globiceps*, *A. jacquelineae*, *A. retusa*, *A. speciosa*, *Euphyllia paradivisa*, *Isopora crateriformis*, and *Seriatopora aculeata*.

Proposed Action/Action Area: The proposed activity is more fully described in your request for consultation and the associated biological evaluation (CAPSTONE 2016). The proposed action (*Okeanos Explorer* cruises) includes the use of various ship and submersible-deployed electronic systems to collect data on the distribution and diversity of deep water habitats in the Marine National Monuments. The activity would occur during two years with up to 20 research cruises scheduled between February 2016 and December 2017. The expedition teams (26 crew and up to 20 rotating scientists and/or technicians on each cruise leg) would be authorized to conduct mapping and Remotely Operated Vehicle (ROV) surveys using the *Okeanos Explorer*'s multibeam, split beam, subbottom profiler and acoustic Doppler current profiler (ADCP) sonar systems, utilizing the ship's conductivity-temperature-depth (CTD) sampling rosette for various water measurements and deploying an ROV. No activities are scheduled to occur on land.

The suite of sonars aboard the vessel includes a Kongsberg EM302 30 kHz multibeam system, which collect bathymetry and backscatter data; several Simrad EK 60 split-beam sonars that



range from 18 to 333 kHz which are designed to gather measurements of biological and gaseous targets in the water column; and a Knudsen 3.5 kHz chirp sub-bottom profiler. The 300 kHz and 38 kHz ADCPs provide information about current velocity and direction at various depths. Sonar mapping activities will be conducted throughout the proposed action area and during transits to and from sites where operations will be conducted in an effort to fill in gaps in data knowledge and to build on data already collected. The maps generated from these activities will improve understanding of the geology and important biological habitats in the project area.

Conductivity, temperature and depth data will be collected by both an Underway CTD and a CTD rosette instrument. The CTD rosette, which is deployed while the ship is stopped and holding dynamic position, is lowered by a winch and wire to a maximum depth of 6800 m to collect water samples through 24 2.5 L niskin bottles. The CTD rosette will be deployed at select sites where ROV operations are conducted to allow for an improved understanding of the environmental conditions at that particular site. The deployment and retrieval of the CTD rosette takes up to several hours (depending on depth), while the Underway CTD can be deployed while the ship is moving, saving hours of time and fuel. The instrument is mounted on the stern railing and outfitted with a re-useable probe that is deployed and retrieved through the use of motorized spool. The Underway CTD will be used to collect water column profiles to a maximum depth of 700 m.

ROV operations will be designed to provide interdisciplinary site characterization at priority targets in and around monuments, sanctuaries and protected areas, through visual observation of priority targets while acquiring environmental data with onboard sensors. Sampling will be focused on corals and sponges, but will target specimens believed to be new species or new records for an area. No ESA-listed corals would be sampled. As many as 200 deployments of the ROV may occur during the 2016 – 17 field season resulting in 1600 hours of total dive time. The dives will better enable scientists and managers to understand the diversity and distribution of deep water habitats.

The action area covered by the accompanying biological evaluation encompasses the marine environments of Papahānaumokuākea Marine National Monument (PMNM); Oahu and the big island of Hawai'i; the area south and west of Molokai, Lana'i, and Kaho'olawe, the Geologists Seamounts located about 100 nm south of Honolulu; the Musicians Seamounts located about 150 nm NNE of Nihoa Island; all of the Pacific Remote Island Areas composing the Pacific Remote Islands Marine National Monument (PRIMNM); the Commonwealth of the Northern Marianas Islands (CNMI) and the Marianas Trench Marine National Monument (MTMNM); the vicinity of American Samoa and the National Marine Sanctuary of American Samoa (NMSAS); the Rose Atoll Marine National Monument (RAMNM); and the vessel transit areas between Honolulu, Hawai'i, Guam, Saipan, Kwajalein, Pago Pago where ESA-listed marine species or their habitats may be impacted by the proposed activities.

Species That May Be Affected: OER determined that the proposed action may affect but is not likely to adversely affect green sea turtles (*Chelonia mydas*), hawksbill sea turtles (*Eretmochelys imbricata*), North Pacific distinct population segment of loggerhead sea turtles (*Caretta caretta*),



olive ridley sea turtles (*Lepidochelys olivacea*), leatherback sea turtles (*Dermochelys coriacea*), Main Hawaiian Islands false killer whale distinct population segment (*Pseudorca crassidens*), humpback whales (*Megaptera novaeangliae*), sperm whales (*Physeter macrocephalus*), fin whales (*Balaenoptera physalus*), blue whales (*Balaenoptera musculus*), sei whales (*Balaenoptera borealis*), north pacific right whales (*Eubalaena japonica*), the Indo-West Pacific and Central Pacific distinct population segments of the scalloped hammerhead shark (*Sphyrna lewini*), Hawaiian monk seals (*Neomonachus schauinslandi*), Hawaiian monk seal critical habitat and the coral species *Acropora globiceps*, *A. jacquelineae*, *A. retusa*, *A. speciosa*, *Euphyllia paradivisa*, *Isopora crateriformis*, and *Seriatopora aculeata*. Detailed information about the biology, habitat, and conservation status of sea turtles can be found in their recovery plans and other sources at <http://www.nmfs.noaa.gov/pr/species/turtles/>. The same can be found for Hawaiian monk seals and cetaceans at <http://www.nmfs.noaa.gov/pr/species/mammals/>; and more information on listed corals can be found at http://www.fpir.noaa.gov/PRD/prd_coral.html.

Critical Habitat: The proposed action would take place within designated monk seal critical habitat. Critical habitat was designated under the ESA for the Hawaiian monk seal on April 30, 1986 and revised on May 26, 1988 (53 FR 18988) and again on August 21, 2015 (80 FR 50926). Designated critical habitat includes all beach areas, lagoon waters, and ocean waters out to a depth of 200 m around Kure Atoll; Midway Islands (except Sand Island), Pearl and Hermes Reef, Lisianski Island, Laysan Island, Gardner Pinnacles, French Frigate Shoals, Necker Island, Maro Reef, and Nihoa Island, and includes the seafloor and all subsurface waters and habitat within 10 meters of the seafloor. Around the Main Hawaiian Islands, critical habitat extends in designated areas from the beach out to the 200 meter depth contour, and includes the seafloor and subsurface waters within 10 meters of the seafloor.

Analysis of Effects: In order to determine that a proposed action is not likely to adversely affect listed species, NMFS must find that the effects of the proposed action are expected to be insignificant, discountable, or beneficial as defined in the joint USFWS-NMFS Endangered Species Consultation Handbook: (1) insignificant effects relate to the size of the impact and should never reach the scale where take occurs; (2) discountable effects are those that are extremely unlikely to occur; and (3) beneficial effects are positive effects without any adverse effects (USFWS & NMFS 1998). This standard, as well as consideration of the probable duration, frequency, and severity of potential interactions, was applied during the analysis of effects of the proposed action on ESA-listed marine species, as is described in detail in the OER consultation request. The OER determined that the risk of collisions with vessels and the risk of entanglement would be discountable; and that the risk from exposure to elevated noise level, disturbance from human activity, as well as exposure to wastes and discharges would result in insignificant effects on ESA-listed sea turtles, marine mammals, sharks and corals; and that the potential effects of the proposed action to designated or proposed critical habitat would also be insignificant.

Considering the information and assessments presented in the OER consultation request, and in the best scientific information available about the biology and expected behaviors of the ESA-listed marine species considered in this consultation; NMFS agrees that: 1) the list of ESA-listed species and critical habitats potentially exposed to the effects of the action is correct, 2) the suite



of identified stressors is comprehensive, and 3) the assessment of exposure risk and significance of exposure to those stressors is accurate. Therefore, NMFS agrees that:

- the risk of collisions with vessels for marine mammals, turtles, sharks and the listed coral species in the action area is discountable;
- the risk of entanglement with marine mammals, sea turtles and sharks is discountable; and,
- ESA-listed species in the action area are unlikely to respond to anticipated elevated noise levels, disturbance from human activity, and exposure to wastes and discharges. Further, if any response were to occur, it would be temporary in nature and never reach the scale where it would affect the individual's health, and as such, have insignificant effects.

Conclusion: NMFS concurs with your determination that conducting the proposed Okeanos Explorer cruises are not likely to adversely affect ESA-listed marine species. This concludes your consultation responsibilities under the ESA for species under NMFS's jurisdiction. However, this consultation focused solely on compliance with the ESA. Additional compliance review that may be required of NMFS for this action (such as assessing impacts on Essential Fish Habitat) would be completed by NMFS Habitat Conservation Division in separate communication, if applicable.

ESA Consultation must be reinitiated if: 1) a take occurs; 2) new information reveals effects of the action that may affect listed species or designated critical habitat in a manner or to an extent not previously considered; 3) the identified action is subsequently modified in a manner causing effects to listed species or designated critical habitat not previously considered; or 4) a new species is listed or critical habitat designated that may be affected by the identified action.

If you have further questions please contact Richard Hall on my staff at (808) 725-5018. Thank you for working with NMFS to protect our nation's living marine resources.

Sincerely,



Michael D. Tosatto
Regional Administrator



cc: Justin Rivera, Papahānaumokuākea Marine National Monument
Aaron Nadig, ESA Section 7 Program, USFWS, Honolulu

NMFS File No.: PIR-2016-9774
PIRO Reference No.: I-PI-16-1347-AG

Literature Cited

Campaign to Address Pacific Monument Science, Technology and ocean Needs (CAPSTONE) 2016. Request for Informal Consultation. Letter from John McDonough to Ann Garrett dated January 14, 2016 and attachments.

U.S. Fish and Wildlife Service and National Marine Fisheries Service. 1998. Endangered Species Consultation Handbook. Procedures for Conducting Consultation and Conference Activities Under Section 7 of the Endangered Species Act.

http://www.nmfs.noaa.gov/pr/pdfs/laws/esa_section7_handbook.pdf



Appendix E: EFH Consultation Letter



Kelley Elliott - NOAA Federal <kelley.elliott@noaa.gov>

EFH Consultation Response for CAPSTONE cruises

Richard Hall - NOAA Federal <richard.hall@noaa.gov>

Wed, Nov 30, 2016 at 4:21 PM

To: Kelley Elliott - NOAA Affiliate <kelley.elliott@noaa.gov>

Cc: Ian Lundgren - NOAA Affiliate <ian.lundgren@noaa.gov>, Samantha Brooke <samantha.brooke@noaa.gov>, Kasey Cantwell - NOAA Affiliate <kasey.cantwell@noaa.gov>

Kelley,

On November 14, 2016, the Office of Exploration and Research (OER), through personal communication, initiated a request for an Essential Fish Habitat consultation for a series of cruises by the NOAA Ship *Okeanos Explorer*. The cruises would run from early-December 2016 through late-September 2017, and include the waters around the Main Hawaiian Islands, the Musician Seamounts (north of Hawaii), the American Samoa Archipelago; Johnston, Howland, Baker, Jarvis, Kingman and Palmyra Atolls of the Pacific Remote Islands, and portions of the Cook Islands. The operational minimum depth during the cruises would be 250 m, with the majority of the cruise activities would be in water depths over 500 m.

The Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1855 et seq.) requires review of federally permitted projects for potential impacts to EFH (§305(b)). Pursuant to this authority, I have reviewed and provided comments as necessary for the Habitat Conservation Division of NOAA's Pacific Islands Regional Office.

The proposed cruises are the final legs of the larger 2-year Campaign to Address Pacific Monuments Science, Technology and Ocean Needs (CAPSTONE Project), which is designed to improve the understanding of the distribution and diversity of deepwater habitats within the Pacific monuments and protected areas.

The primary activities to be conducted during this series of cruises would be: remotely operated vehicle (ROV) dives to conduct engineering trials and sonar calibration and testing during two shakedown cruises scheduled for the waters of the Main Hawaiian Islands (no biological or geological samples would be collected); and mapping and ROV dives in the waters of American Samoa, West Samoa, the Pacific Remote Islands, the Musician Seamounts, and portions of the Cook Islands. Five cruises would be dedicated mapping cruise, resulting in 92 days of constant mapping, while six cruises would be combined ROV and mapping cruises which would result in approximately 96 ROV dives and 110 days of overnight mapping. Other activities to be performed during the cruises would include: deployment and recovery of a conductivity-temperature-depth (CTD) sampling rosette and underway CTDs, and possible deployment of Argo floats to acquire ocean chemistry data. During ROV dives various biological and geological samples would be collected.

In order to avoid/minimize impacts to EFH, the OER and the *Okeanos Explorer* have proposed to institute the following procedures:

- The vessel would employ the use of dynamic positioning during ROV dives (no anchoring);
- ROVs would be operated in a manner to avoid seafloor disturbance, and setting the ROV on the seafloor will be held to a minimum. For those situations when the ROV does make contact with the seafloor, visual observations will confirm that the area is sand, mud, or hard-bottom;
- Sample collections would be limited (typically 4 - 6 total rocks and primary biological specimens per dive) that represent new species, new records, or the dominant morphotype animal in a community. Clonal biological specimens (corals, sponges) would be subsampled; and
- Instruments deployed to collect water samples and current data (except for expendable instruments) would not be allowed to contact the seafloor;

In addition to the management practices proposed by OER and the *Okeanos Explorer*, NMFS provides the following guidance to further avoid/minimize impacts to EFH from the proposed cruise activities and vessel operations:

1. Except in an emergency, the vessel should not anchor while at sea;
2. The vessel should adhere to MARPOL discharge regulations at all times during the proposed cruises;
3. The ROV should be thoroughly rinsed between dives, allowed to dry, and checked for the presence of biological



organisms to prevent the spread of invasive or non-endemic species from one location to another.

4. The use detergents and other pollutants which may be washed into the marine environment should be avoided or held to a minimum;

Based on my review of the documents provided, and through our personal communications, NOAA Fisheries has determined that the proposed cruises of the NOAA Ship *Okeanos Explorer* would not adversely affect EFH provided adherence to OER proposed procedures and the NMFS guidance made above. Thank you for the opportunity to review the plans for the upcoming field season of the *Okeanos Explorer*, and to provide our comments. This completes your obligation to consult with our office with regards to EFH for this series of actions. If you have any questions or comments feel free to contact me at your convenience.

--

Richard Hall
Fishery Policy Analyst
Pacific Islands Regional Office
NOAA Inouye Regional Center
1845 Wasp Blvd., Building 176
Honolulu, HI 96818
[808-725-5018](tel:808-725-5018)



Appendix F: NASA Maritime Aerosols Network Survey of Opportunity

Survey or Project Name

Maritime Aerosol Network

Lead POC or Principle Investigator (PI & Affiliation)

POC: Dr. Alexander Smirnov

Supporting Team Members Ashore


Supporting Team Members Aboard (if required)

Activities Description(s)(Include goals, objectives and tasks)

The Maritime Aerosol Network (MAN) component of AERONET provides ship-borne aerosol optical depth measurements from the Microtops II sun photometers. These data provide an alternative to observations from islands as well as establish validation points for satellite and aerosol transport models. Since 2004, these instruments have been deployed periodically on ships of opportunity and research vessels to monitor aerosol properties over the World Oceans.



Appendix G: CITES Permit

FORM 3-201A (1/97) CITES CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA		IMPORT PERMIT		Page 1 of 1 1. Original Permit/Certificate No. 17US36207C/9 2. Valid 08/02/2018
3. Permittee (name and address, country) NOAA OFFICE OF OCEAN EXPLORATION & RESEARCH 1315 EAST-WEST HWY, SSMC3 ROOM 10262 SILVER SPRING, MD 20910 U.S.A.		4. Consignor (name and address, country) INTRODUCTION FROM THE SEA		
5. Special Conditions MUST COMPLY WITH ENCLOSED GENERAL PERMIT CONDITIONS. PERMIT MAY BE COPIED FOR MULTIPLE SHIPMENTS. PERMITTEE TO RETAIN ORIGINAL. PERMITTEE MUST COMPLETE BLOCKS 11 (QUANTITY) AND SUBMIT TO USFWS INSP. UPON IMPORT.		5a. Purpose of Transaction S 6. U.S. Management Authority Department of the Interior U.S. FISH AND WILDLIFE SERVICE DIVISION OF MANAGEMENT AUTHORITY BRANCH OF PERMITS, MS: IA 5275 LEESBURG PIKE FALLS CHURCH VA 22041-3803  08/03/2017 Issuing Date United States Management Authority AUTHORITY: Endangered Species Act of 1973 (16 USC 1531 et. seq.)		
<i>-May not be used for commercial purposes. For live animals, only valid if the transport conditions comply with the CITES Guidelines for Transport of Live Animals or, in the case of air transport, with IATA Live Animals Regulations.</i>				
7/8. Common Name and Scientific name (genus and species) of Animal or Plant		9. Description of Part or Derivative, including identifying marks or numbers (age/sex if live)		10. Appendix No. and Source
A. Common Name BLACK CORAL Scientific Name ANTIPATHARIA		9. INTRODUCTION FROM THE SEA: BLACK CORAL SPECIMENS.		10. 2 X 11. Quantity (including units) NO 12. Country of Origin
B. Common Name STONY CORAL Scientific Name SCLERACTINIA		9. INTRODUCTION FROM THE SEA: STONY CORAL SPECIMENS.		10. 2 X 11. Quantity (including units) NO 12. Country of Origin
C. Common Name CHAMBERED NAUTILUS Scientific Name NAUTILIDAE		9. INTRODUCTION FROM THE SEA: CHAMBERED NAUTILUS SPECIMENS.		10. 2 X 11. Quantity (including units) NO 12. Country of Origin
D. Common Name [REDACTED] Scientific Name [REDACTED]		9. [REDACTED]		10. [REDACTED] 11. Quantity (including units) [REDACTED] 12. Country of Origin [REDACTED]
E. Common Name [REDACTED] Scientific Name [REDACTED]		9. [REDACTED]		10. [REDACTED] 11. Quantity (including units) [REDACTED] 12. Country of Origin [REDACTED]

CONDITIONS - EXCERPTS FROM 50 CFR 13*

the notice of proposal, must state the reasons why the permittee objects to the proposed revocation, and may include supporting documentation.

(3) A decision on the revocation shall be made within 45 days after the end of the objection period. The issuing officer shall notify the permittee in writing of the Service's decision and the reasons therefore, together with the information concerning the right to request and the procedures for requesting reconsideration.

(4) Unless a permittee files a timely request for reconsideration, any wildlife held under authority of a permit that is revoked must be disposed of in accordance with instructions of the issuing officer. If a permittee files a timely request for reconsideration of a proposed revocation, such permittee may retain possession of any wildlife held under authority of the permit until final disposition of the appeal process.

§ 13.41 Humane conditions.

Any live wildlife possessed under a permit must be maintained under humane and healthful conditions.

§ 13.42 Permits are specific.

The authorizations on the face of a permit that set forth specific times, dates, places, methods of taking or carrying out the permitted activities, numbers and kinds of wildlife or plants, location of activity, and associated activities that must be carried out; describe certain circumscribed transactions; or otherwise allow a specifically limited matter, are to be strictly interpreted and will not be interpreted to permit similar or related matters outside the scope of strict construction.

§ 13.43 Alteration of permits.

Permits shall not be altered, erased, or mutilated, and any permit which has been altered, erased, or mutilated shall immediately become invalid. Unless specifically permitted on the face thereof, no permit shall be copied, nor shall any copy of a permit issued pursuant to this subchapter B be displayed, offered for inspection, or otherwise used for any official purpose for which the permit was issued.

§ 13.44 Display of permit.

Any permit issued under this part shall be displayed for inspection upon request to the Director or his agent, or to any other person relying upon its existence.

§ 13.45 Filing of reports.

Permittees may be required to file reports of the activities conducted under the permit. Any such reports shall be filed not later than March 31 for the

preceding calendar year ending December 31, or any portion thereof, during which a permit was in force, unless the regulations of this subchapter B or the provisions of the permit set forth other reporting requirements.

§ 13.46 Maintenance of records.

From the date of issuance of the permit, the permittee shall maintain complete and accurate records of any taking, possession, transportation, sale, purchase, barter, exportation, or importation of plants obtained from the wild (excluding seeds) or wildlife pursuant to such permit. Such records shall be kept current and shall include names and addresses of persons with whom any plant obtained from the wild (excluding seeds) or wildlife has been purchased, sold, bartered, or otherwise transferred, and the date of such transaction, and such other information as may be required or appropriate. Such records shall be legibly written or reproducible in English and shall be maintained for five years from the date of expiration of the permit.

§ 13.47 Inspection requirement.

Any person holding a permit under this subchapter B shall allow the Director's agent to enter his premises at any reasonable hour to inspect any wildlife or plant held or to inspect, audit, or copy any permits, books, or records required to be kept by regulations of this subchapter B.

§ 13.48 Compliance with conditions of permit.

Any person holding a permit under subchapter B and any person acting under authority of such permit must comply with all conditions of the permit and with all applicable laws and regulations governing the permitted activity.

§ 13.49 Surrender of permit.

Any person holding a permit under subchapter B shall surrender such permit to the issuing officer upon notification that the permit has been suspended or revoked by the Service, and all appeal procedures have been exhausted.

§ 13.50 Acceptance of liability.

Except as otherwise limited in the case of permits described in Sec. 13.25(d), any person holding a permit under this subchapter B assumes all liability and responsibility for the conduct of any activity conducted under the authority of such permit.

*A copy of the complete regulation is available upon request from the Division of Management Authority.



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the permittee, or who is employed by or under contract to the permittee for purposes authorized by the permit, may carry out the activity authorized by the permit.

(e) In the case of permits issued under Sec. 17.22(b)-(d) or Sec. 17.32(b)-(d) of this subchapter to a State or local governmental entity, a person is under the direct control of the permittee where:

(1) The person is under the jurisdiction of the permittee and the permit provides that such person(s) may carry out the authorized activity; or

(2) The person has been issued a permit by the governmental entity or has executed a written instrument with the governmental entity, pursuant to the terms of the implementing agreement.

§ 13.26 Discontinuance of permit activity.

When a permittee, or any successor to a permittee as provided for by Sec. 13.24, discontinues activities authorized by a permit, the permittee shall within 30 calendar days of the discontinuance return the permit to the issuing office together with a written statement surrendering the permit for cancellation. The permit shall be deemed void and cancelled upon its receipt by the issuing office. No refund of any fees paid for issuance of the permit or for any other fees or costs associated with a permitted activity shall be made when a permit is surrendered for cancellation for any reason prior to the expiration date stated on the face of the permit.

§ 13.27 Permit suspension.

(a) Criteria for suspension. The privileges of exercising some or all of the permit authority may be suspended at any time if the permittee is not in compliance with the conditions of the permit, or with any applicable laws or regulations governing the conduct of the permitted activity. The issuing officer may also suspend all or part of the privileges authorized by a permit if the permittee fails to pay any fees, penalties or costs owed to the Government. Such suspension shall remain in effect until the issuing officer determines that the permittee has corrected the deficiencies.

(b) Procedure for suspension. (1) When the issuing officer believes there are valid grounds for suspending a permit the permittee shall be notified in writing of the proposed suspension by certified or registered mail. This notice shall identify the permit to be suspended, the reason(s) for such suspension, the actions necessary to correct the deficiencies, and inform the permittee of the right to object to the proposed suspension. The issuing officer may amend any notice of suspension at any time.

(2) Upon receipt of a notice of proposed suspension the permittee may file a written objection to the proposed action. Such objection must be in writing, must be filed within 45 calendar days of the date of the notice of proposal, must state the reasons why the permittee objects to the proposed suspension, and may include supporting documentation.

(3) A decision on the suspension shall be made within 45 days after the end of the objection period. The issuing officer shall notify the permittee in writing of the Service's decision and the reasons therefore. The issuing officer shall also provide the applicant with the information concerning the right to request reconsideration of the decision under Sec. 13.29 of this part and the procedures for requesting reconsideration.

§ 13.28 Permit revocation.

(a) Criteria for revocation. A permit may be revoked for any of the following reasons:

(1) The permittee willfully violates any Federal or State statute or regulation, or any Indian tribal law or regulation, or any law or regulation of any foreign country, which involves a violation of the conditions of the permit or of the laws or regulations governing the permitted activity; or

(2) The permittee fails within 60 days to correct deficiencies that were the cause of a permit suspension; or

(3) The permittee becomes disqualified under Sec. 13.21(c) of this part; or

(4) A change occurs in the statute or regulation authorizing the permit that prohibits the continuation of a permit issued by the Service; or

(5) Except for permits issued under Sec. 17.22(b) through (d) or Sec. 17.32(b) through (d) of this subchapter, the population(s) of the wildlife or plant that is the subject of the permit declines to the extent that continuation of the permitted activity would be detrimental to maintenance or recovery of the affected population.

(b) Procedure for revocation. (1) When the issuing officer believes there are valid grounds for revoking a permit, the permittee shall be notified in writing of the proposed revocation by certified or registered mail. This notice shall identify the permit to be revoked, the reason(s) for such revocation, the proposed disposition of the wildlife, if any, and inform the permittee of the right to object to the proposed revocation. The issuing officer may amend any notice of revocation at any time.

(2) Upon receipt of a notice of proposed revocation the permittee may file a written objection to the proposed action. Such objection must be in writing, must be filed within 45 calendar days of the date of

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original application remain current and correct, unless previously changed or corrected. If such information is no longer current or correct, the applicant must provide corrected information.

(b) Renewal criteria. The Service shall issue a renewal of a permit if the applicant meets the criteria for issuance in Sec. 13.21(b) and is not disqualified under Sec. 13.21(c).

(c) Continuation of permitted activity. Any person holding a valid, renewable permit, who has complied with this section, may continue the activities authorized by the expired permit until the Service has acted on such person's application for renewal.

(d) Denial. The issuing officer may deny renewal of a permit to any applicant who fails to meet the issuance criteria set forth in Sec. 13.21 of this part, or in the part(s) or section(s) specifically governing the activity for which the renewal is requested.

§ 13.23 Amendment of permits.

(a) Permittee's request. Where circumstances have changed so that a permittee desires to have any condition of his permit modified, such permittee must submit a full written justification and supporting information in conformity with this part and the part under which the permit was issued.

(b) The Service reserves the right to amend any permit for just cause at any time during its term, upon written finding of necessity, provided that any such amendment of a permit issued under Sec. 17.22(b) through (d) or Sec. 17.32(b) through (d) of this subchapter shall be consistent with the requirements of Sec. 17.22(b)(5), (c)(5) and (d)(5) or Sec. 17.32(b)(5), (c)(5) and (d)(5) of this subchapter, respectively.

(c) Change of name or address. A permittee is not required to obtain a new permit if there is a change in the legal individual or business name, or in the mailing address of the permittee. A permittee is required to notify the issuing office within 10 calendar days of such change. This provision does not authorize any change in location of the conduct of the permitted activity when approval of the location is a qualifying condition of the permit.

§ 13.24 Right of succession by certain persons.

(a) Certain persons other than the permittee are authorized to carry on a permitted activity for the remainder of the term of a current permit, provided they comply with the provisions of paragraph (b) of this section. Such persons are the following:

(1) The surviving spouse, child, executor, administrator, or other legal representative of a deceased permittee; or

(2) A receiver or trustee in bankruptcy or a court designated assignee for the benefit of creditors.

(b) In order to qualify for the authorization provided in this section, the person or persons desiring to continue the activity shall furnish the permit to the issuing officer for endorsement within 90 days from the date the successor begins to carry on the activity.

(c) In the case of permits issued under Sec. 17.22(b) through (d) or Sec. 17.32(b) through (d) of this subchapter B, the successor's authorization under the permit is also subject to a determination by the Service that:

(1) The successor meets all of the qualifications under this part for holding a permit;

(2) The successor has provided adequate written assurances that it will provide sufficient funding for the conservation plan or Agreement and will implement the relevant terms and conditions of the permit, including any outstanding minimization and mitigation requirements; and

(3) The successor has provided such other information as the Service determines is relevant to the processing of the request.

§ 13.25 Transfer of permits and scope of permit authorization.

(a) Except as otherwise provided for in this section, permits issued under this part are not transferable or assignable.

(b) Permits issued under Sec. 17.22(b) or Sec. 17.32(b) of this subchapter B may be transferred in whole or in part through a joint submission by the permittee and the proposed transferee or in the case of a deceased permittee, the deceased permittee's legal representative and the proposed transferee, provided the Service determines that:

(1) The proposed transferee meets all of the qualifications under this part for holding a permit;

(2) The proposed transferee has provided adequate written assurances that it will provide sufficient funding for the conservation plan or Agreement and will implement the relevant terms and conditions of the permit, including any outstanding minimization and mitigation requirements; and

(3) The proposed transferee has provided such other information as the Service determines is relevant to the processing of the submission.

(c) In the case of the transfer of lands subject to an agreement and permit issued under Sec. 17.22(c) or (d) or Sec. 17.32 (c) or (d) of this subchapter B, the Service will transfer the permit to the new owner if the new owner agrees in writing to become a party to the original agreement and permit.

(d) Except as otherwise stated on the face of the permit, any person who is under the direct control of



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§ 13.21 Issuance of permits.

(a) No permit may be issued prior to the receipt of a written application therefore, unless a written variation from the requirements, as authorized by Sec. 13.4, is inserted into the official file of the Bureau. An oral or written representation of an employee or agent of the United States Government, or an action of such employee or agent, shall not be construed as a permit unless it meets the requirements of a permit as defined in 50 CFR 10.12.

(b) Upon receipt of a properly executed application for a permit, the Director shall issue the appropriate permit unless:

(1) The applicant has been assessed a civil penalty or convicted of any criminal provision of any statute or regulation relating to the activity for which the application is filed, if such assessment or conviction evidences a lack of responsibility.

(2) The applicant has failed to disclose material information required, or has made false statements as to any material fact, in connection with his application;

(3) The applicant has failed to demonstrate a valid justification for the permit and a showing of responsibility;

(4) The authorization requested potentially threatens a wildlife or plant population, or

(5) The Director finds through further inquiry or investigation, or otherwise, that the applicant is not qualified.

(c) Disqualifying factors. Any one of the following will disqualify a person from receiving permits issued under this part.

(1) A conviction, or entry of a plea of guilty or nolo contendere, for a felony violation of the Lacey Act, the Migratory Bird Treaty Act, or the Bald and Golden Eagle Protection Act disqualifies any such person from receiving or exercising the privileges of a permit, unless such disqualification has been expressly waived by the Director in response to a written petition.

(2) The revocation of a permit for reasons found in Sec. 13.28 (a)(1) or (a)(2) disqualifies any such person from receiving or exercising the privileges of a similar permit for a period of five years from the date of the final agency decision on such revocation.

(3) The failure to pay any required fees or assessed costs and penalties, whether or not reduced to judgement disqualifies such person from receiving or exercising the privileges of a permit as long as such moneys are owed to the United States. This requirement shall not apply to any civil penalty presently subject to administrative or judicial appeal; provided that the pendency of a collection action brought by the United States or its assignees shall not

constitute an appeal within the meaning of this subsection.

(4) The failure to submit timely, accurate, or valid reports as required may disqualify such person from receiving or exercising the privileges of a permit as long as the deficiency exists.

(d) Use of supplemental information. The issuing officer, in making a determination under this subsection, may use any information available that is relevant to the issue. This may include any prior conviction, or entry of a plea of guilty or nolo contendere, or assessment of civil or criminal penalty for a violation of any Federal or State law or regulation governing the permitted activity. It may also include any prior permit revocations or suspensions, or any reports of State or local officials. The issuing officer shall consider all relevant facts or information available, and may make independent inquiry or investigation to verify information or substantiate qualifications asserted by the applicant.

(e) Conditions of issuance and acceptance. (1) Any permit automatically incorporates within its terms the conditions and requirements of subpart D of this part and of any part(s) or section(s) specifically authorizing or governing the activity for which the permit is issued, as well as any other conditions deemed appropriate and included on the face of the permit at the discretion of the Director.

(2) Any person accepting and holding a permit under this subchapter B acknowledges the necessity for close regulation and monitoring of the permitted activity by the Government. By accepting such permit, the permittee consents to and shall allow entry by agents or employees of the Service upon premises where the permitted activity is conducted at any reasonable hour. Service agents or employees may enter such premises to inspect the location; any books, records, or permits required to be kept by this subchapter B; and any wildlife or plants kept under authority of the permit.

(f) Term of permit. Unless otherwise modified, a permit is valid during the period specified on the face of the permit. Such period shall include the effective date and the date of expiration.

(g) Denial. The issuing officer may deny a permit to any applicant who fails to meet the issuance criteria set forth in this section or in the part(s) or section(s) specifically governing the activity for which the permit is requested.

§ 13.22 Renewal of permits.

(a) Application for renewal. Applicants for renewal of a permit must submit a written application at least 30 days prior to the expiration date of the permit. Applicants must certify in the form required by Sec. 13.12(a)(5) that all statements and information in the



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington, D.C. 20240

GENERAL WILDLIFE PERMIT CONDITIONS

In addition to any special conditions identified on the face of the permit, the following conditions must be met:

1. Sections 13.21 through 13.28 and sections 13.41 through 13.50 of Title 50 Code of Federal Regulations (see attached) are additional conditions of this permit.
2. All applicable foreign, local, State, tribal or Federal laws, including those requiring permits, must be observed.
3. Living specimens must be handled and shipped so as to minimize risk of injury, damage to health or cruel treatment (for mammals and birds, see 50 CFR 14.101-14.172 for additional information on specific regulatory requirements). The permittee must ensure that living specimens to be shipped or transferred are healthy.
4. Container or package containing authorized wildlife must be plainly marked on the outside with both the name and address of shipper and consignee and an accurate description of the contents including common and scientific name and number of specimens within (alternative marking requirements are identified in 50 CFR 14.82).
5. For activities other than import or export, permittee must carry a copy of permit while conducting authorized activities. The original permit must be returned to the Division of Management Authority if the permittee has not used it or if permittee is requesting renewal or amendment.
6. Permit number must be printed on all documents and advertisements involving activities conducted under this permit.

For permits authorizing import, export or re-export:

7. Import, export or re-export of pre-Act wildlife under the U.S. Endangered Species Act must be accompanied by documentation required under 50 CFR 17.4 (contact Division of Management Authority for copy).
8. Import of species listed in Appendix I, II or III of CITES must be accompanied by proper foreign documentation from the country of export or re-export.
9. The original permit and a completed copy of the Wildlife Declaration (Form 3-177) must be presented to a USFWS officer at the port upon import, export or re-export of wildlife shipments.
10. Import, export or re-export of wildlife must be done through a designated port (see attachment) or as authorized by an Exception to Designated Port permit (see below).

The appropriate port must be contacted at least 48 hours prior to use to schedule an inspection of your shipment.

Exception to Designated Port Permittee:

Authorization to import, export, or re-export wildlife through a non-designated port must be obtained prior to any import or export activity (see 50 CFR 14.31 – 14.33 for further information).

The USFWS law enforcement office identified on the permit must be notified at least 72 hours prior to import, export, or re-export, or within the timeframe designated on the face of the permit.

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Designated Ports for Wildlife (50 CFR 14.12)

Wildlife, including parts and products, must be imported/exported through one of the designated ports listed below. **Please call the Designated Port to determine port availability, possible clearance and inspection costs, and other requirements. You must contact the appropriate port and schedule an inspection at least 48 hours prior to use.** Under special circumstances, other ports referred to as non-designated ports may be used if authorized by Law Enforcement under a valid Designated Port Exception permit. For more information contact a designated port or see the information at http://www.fws.gov/le/ImpExp/Info_Importers_Exporters.htm. A Wildlife Declaration Form (eDec) (<https://edecs.fws.gov/>) must be filed with the FWS inspector at the port you will to use at the time of importation/exportation.

Anchorage

P.O. Box 190045
Anchorage, AK 99519
(907) 271-6198
Fax: (907) 271-6199

Atlanta

4341 Int'l Parkway, Suite 104
Atlanta, GA 30354
(404) 763-7959
Fax: (404) 366-7031

Baltimore

BWI Air Cargo Complex
Building F, Suite 1500
Baltimore, MD 21240
(410) 694-9590
Fax: (410) 694-9594

Boston

70 Everett Avenue, Suite 315
Chelsea, MA 02150
(617) 889-6616
Fax: (617) 889-1980

Chicago

Wildlife Inspection Program
10600 Higgins Rd., Suite 200
Rosemont, IL 60018
(847) 298-3250 ext.110
Fax: (847) 298-7669

Dallas/Ft. Worth

P.O. Box 610069
DFW Airport, TX 75261
(972) 574-3254
Fax: (972) 574-4669

Honolulu

3375 Koapaka St., #B296
Honolulu, HI 96819
(808) 861-8525
Fax: (808) 861-8515

Houston

16639 W. Hardy Road
Houston, TX 77060
(281) 230-7225
Fax: (281) 230-7227

Los Angeles

370 Amapola Ave., #114
Torrance, CA 90501
(310) 328-6307
Fax: (310) 328-6399

Louisville

600 Martin Luther King Jr. Place
Suite 322
Louisville, KY 40202
(502) 582-5989
Fax: (502) 582-5981

Memphis

3150 Tchulahoma Road
Suite 6
Memphis, TN 38118
(901) 544-3694
Fax: (901) 544-3696

Miami

3701 N. W. 82nd Avenue
Doral, FL 33166
(305) 526-2994 or 2620
Fax: (305) 526-7480

New Orleans

2424 Edenborn, Suite 100
Metairie, LA 70001
(504) 219-8870
Fax: (504) 219-8868

New York

70 E. Sunrise Hwy., #419
Valley Stream, NY 11580
(516) 825-3950
Fax: (516) 825-3597

Newark

1210 Corbin St., 1st Floor
Elizabeth, NJ 07201
(908) 787-1321
Fax: (908) 787-1334

Portland

P.O. Box 55206
Portland, OR 97238
(503) 231-6135
Fax: (503) 231-6133

San Francisco

1633 Old Bayshore Hwy.
Suite 248
Burlingame, CA 94010
(650) 876-9078
Fax: (650) 876-9701

Seattle

19639 28th Avenue South,
Bldg A
Seattle, WA 98188
(206) 429-2198
Fax: (206) 429-2673

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Appendix H: UCH Standard Operating Procedures

NOAA Office of Ocean Exploration and Research Operational Policy and Procedures for Underwater Cultural Heritage Missions Conducted onboard the NOAA Ship *Okeanos Explorer*

IV. Purpose

The purpose of this document is to provide guidance for OER mission activities conducted aboard the NOAA Ship Okeanos Explorer, when such mission activities involve either unexpected discovery or targeted exploration of potential Underwater Cultural Heritage sites.

II. Background

Since the inception of NOAA's ocean exploration program in 2000, OER data management practices have been guided by the 2000 President's Panel Report recommendations, which prioritized rapid and unrestricted data sharing as one of five critical exploration program components. More recently Public law 111-11 [Section XII Subtitle A Part 1 Exploration] reinforced and expanded OER data management objectives, continuing to stress the importance of sharing unique exploration data and information to improve public understanding of the oceans, and for research and management purposes.

OER missions conducted aboard the NOAA Ship Okeanos Explorer offer a 'best-case' scenario for meeting Program mission objectives related to data sharing:

- Dedicated shipboard and shore-side teams work in tandem to ensure near-real time data product generation from shipboard and ROV sensors;
- Telepresence is used to share data products and information in real-time with shore-side participants and the public;
- Mission information is publically communicated in real time via Internet access to streamed video and related resources; and
- Data are managed throughout the lifecycle in accordance with all applicable policy directives and community best practices.

The nature of exploration defines the possibility of discovery, including unexpectedly exposing the location of underwater cultural resources; on some occasions, exploration targets are specifically focused on the exploration of suspected underwater cultural heritage (UCH) sites.

The need to protect the location of suspected UCH sites until they are fully understood, whether purposefully explored or fortuitously discovered, is an important statutory responsibility. In the case of OER expeditions aboard the Okeanos Explorer, a range of operational procedures must be modified to ensure this protection occurs to the fullest extent possible. The following sections of this document define the methods for ensuring protection of these sensitive data throughout the data lifecycle.

III. Authority

- a. **Marine Archaeology:** This document is informed by: the Federal archaeology program; U.S. legislation on the treatment of cultural remains; and the UNESCO Convention for the Protection of the Underwater Cultural Heritage.

The NOAA Office of Ocean Exploration and Research (OER) supports the standards for conducting marine archaeological activities enumerated in the Annex Rules of the UNESCO Convention on the Protection of the Underwater Cultural Heritage. Preservation and protection of prehistoric and historic cultural resources is the policy of the Federal government and OER has a responsibility to consider the effects of its activities on these resources. If data is found to be sensitive because it reveals the location of a historically significant cultural resource, Section 304 of the National Historic Preservation Act provides that the head of a Federal agency or other public official shall withhold from public disclosure information about the location, character, or ownership of a historic property when disclosure may: cause a significant invasion of privacy; risk harm to the historic property; or impede the use of a traditional religious site by practitioners. This document will use the term Underwater Cultural Heritage, or UCH, to refer to historic and prehistoric traces of human existence that are totally or partially underwater.

- b. **Data Management:** Geospatial data are considered a national capital asset. National policy and international standards guide data management best practices to ensure timely and broad public accessibility to these data. Within NOAA, data management practices are informed by NOAA Administrative Order (NAO) 212-15 Management of Environmental Data and Information, which states in part:

Environmental data will be visible, accessible and independently understandable to users, except where limited by law, regulation, policy (such as those applicable to personally identifiable information or protected critical infrastructure information or proprietary trade information) or by security requirements.

Sensitive UCH data collections require special handling while determinations are made as to whether each location will be nominated and will qualify for protection under the NHPA Section 304. OER considers these data to fall within the scope of the NAO 212-15 exceptions during this period.

IV. Roles and Responsibilities

Particular to the NOAA Ship *Okeanos Explorer*, there are many methods employed to ensure rapid and broad data access. When the goal is to restrict access to precise positional information, several operational scenarios must be considered. Alternate operating procedures are then developed for:

- Real time operations:
 - Routine data transmissions and events that broadcast the ship position
 - Seafloor mapping operations and data production
 - Telepresence-enabled ROV operations
 - Video annotations and production
 - Pubic broadcast operations via website and maps
- Post-cruise data management

This table summarizes the roles and responsibilities of each Team Lead in implementing the policy through the management approaches described herein and the SOPs as defined in the Appendices.

MISSION PERSONNEL (Coordinated by: Expedition Coordinator)	
Responsible Team	Accountable for these (primary) actions
Expedition Coordinator	Notification of NDA to Mission Personnel ID , communicate and enforce UCH buffer zone Coordinate with Team leads and key personnel / ensure SOP compliance
Seafloor Mapping Team	Segregate raw and processed data into marked files so that restricted data are held separately and are clearly marked
Telepresence Team	Ensure broadcast data is free of any positional information

Video Team	Ensure UCH Dives and dive products are annotated as such; ensure all raw data and products are not geo-referenced
Data Management Team	Ensure all UCH data are appropriately segregated and documented. Follow post cruise and archive procedures as specified.
Communications Team	Ensure all communications are controlled through one primary POC; ensure communications are not geo-referenced.
<i>Okeanos Explorer Operations</i> (Coordinated by: CO or Designee)	
OMAO Operations	Notification to crew of NDA responsibilities Stop SCS events (email notifications) upon entering buffer zone; Start SCS events (email notifications) upon exiting buffer zone

V. Appendices: Standard Operating Procedures

Appendix A: MAPPING OPERATIONS

The following outlines the process for pre-cruise planning, mapping field operations, post-cruise follow up, and data archival procedures for the following scenarios:

- When UCH is unexpectedly discovered on a standard, non-UCH targeted mapping cruise
- When a cruise is specifically targeted at UCH.
- When an Isolated UCH survey is conducted as part of a broader cruise
- Large survey over UCH area with potential to contain multiple instances of UCH

A. Pre-Cruise Planning

1. Standard Mapping Pre-Cruise Planning

- a. This section does not affect normal pre-cruise or data management processes for standard mapping cruises that are not conducting targeted UCH mapping. During pre-cruise planning the EX Cruise Coordinator is advised to consult with the OER Marine Archaeologist to discuss possible UCH targets in the mission area. The mapping team may be requested to optimize line planning as necessary to detect UCH and to process data, when possible, to a smaller non-standard grid size to create higher resolution mapping products to provide better images of potential UCH. If so, follow guidance in the UCH Mapping Pre-Cruise Planning section below.

2. UCH Mapping Pre-Cruise Planning



- a.** Background information - The EX mapping team should be supplied with information about targets in the survey area that will help in their detection and identification. This information will be supplied by OER's marine archaeologist and collaborating archaeologists.
- b.** Data processing and data products - Archaeologists involved with the survey will consult with the mapping team to discuss data processing and data products that will increase the potential to discover UCH. The cruise coordinator and mapping team lead will work with OER's marine archaeologist to coordinate this activity.
- c.** Consultation and data sensitivities - Cruise planning must also include a discussion on data sensitivity and data management/archiving. It is the appropriate time to collaborate with other Federal and state agencies that may have a legal or management interest in potential UCH in the survey area. The risks to the resources should be weighed to inform a post-cruise decision on whether or not UCH with potential historical or cultural significance should have information about their location restricted from public release. This should be a collaborative discussion that includes OER's marine archaeologist, cruise coordinator and cruise data manager along with cultural resource managers and archaeologists from other agencies with an interest in the UCH. Agencies that may have an interest include the Office of National Marine Sanctuaries (ONMS) Maritime Heritage Program, Bureau of Ocean Energy Management, Bureau of Safety and Environmental Enforcement, U.S. Navy History and Heritage Command, National Park Service, State Historic Preservation Officers, and others. While planning expeditions in any foreign country the host government should be made aware of the potential to discover UCH.
- d.** In survey areas where an agency has responsibility for UCH, the data management team should carry out a consultation process with the agency to identify any special protocols that should be put in place to conform with the policies of the agency and these should be incorporated into the data management plan. The expedition coordinator is responsible for the overall execution of the data management plan.
- e.** On mapping missions within the National Marine Sanctuary System, pre-cruise discussions between the EX Cruise Coordinator and ONMS should include the ONMS Director of the Maritime Heritage Program (MHP) and the maritime heritage coordinator at the sanctuary site. They will help determine the sensitivity of data and data products.

B. Mapping Field Operations

1. Standard Mapping Field Operations

- a.** While standard mapping field operations are not affected by the marine archaeology SOP, any features which appear to be of cultural or historical significance, and appear anthropogenic in origin, do require special consideration. Cultural features include wrecks of ships or aircraft, the recognizable debris from wrecks, evidence of previous human settlements, or other items which may appear anthropogenic in origin and have some associated cultural or historical significance.
- b.** The EX Cruise Coordinator will consult with OER's marine archaeologist immediately on the discovery of UCH in the field. The Cruise Coordinator should provide an image and location information by email. The OER marine archaeologist may request special data products that have higher resolutions than standard data products to aid in characterizing UCH.



- c.** If UCH is determined not to be historically or culturally significant or it is determined that no harm will result by disclosing position information, no change to standard mapping field procedures is required.
- d.** If UCH is historically significant or potential to be historically significant, data and data products should be held from public release until reviewed for sensitivity as applicable under the National Historic Preservation Act and other pertinent legislation and regulations, prior to releasing data to a public archive.
- e.** The expedition coordinator is responsible for the overall execution of the data management plan.
- f.** When appropriate, OER's marine archaeologist will contact relevant entities to notify them of the discovery and consult with them regarding the significance of the UCH.

2. UCH Targeted Mapping Field Operations

- a.** No informal information about UCH should be released to the general public by the ship or personnel. This includes posting information and images on social networking sites like Facebook, Twitter or personal blogs. Mapping data will be released to the public following the normal process and announcement of discoveries will be made through the appropriate offices and public affairs officials.
- b.** A five-mile buffer zone shall be created around the UCH isolated survey box. The following steps will be taken just prior to entering the buffer zone in order to stop broadcasting the ship's location while the survey is conducted:
 - i. NOAA Shiptracker: Disable the SCS feed from the ship going to Shiptracker
 - ii. Automated Information System (AIS): NOAA requires that the AIS feed which broadcasts information about the ship, including position, course and speed, must remain on at all times for collision avoidance and other safety reasons. Although the [International Maritime Organization's](#) (IMO) Maritime Safety Committee condemns the Internet publication of AIS data, it is easily available for viewing. During the cruise planning phase the Expedition Coordinator will provide the AIS broadcast range on the EX to the chief scientist and science team. The Chief scientist, the science team, or other parties involved in a UCH mapping cruise should be made aware of this and decide whether the value of the operation merits acceptance of the potential issues/outcomes imposed.
 - iii. Telepresence Video Feeds: Do not stream any feeds that include a visible ship location, for example the multi-beam acquisition screen does not high enough resolution over the video feed to see ship position. Streams include but not limited to the SCS data screen, or any active mapping data acquisition screens, or video feeds. It is acceptable to stream video feeds that do not include the ship's location.
 - iv. The Cruise Coordinator will ensure the survey department takes steps to distinguish and separate UCH mapping data from non-UCH mapping data as appropriate.
 - v. Raw Multibeam Data Acquisition: Raw data will be logged in the standard folder structure on the multibeam acquisition computer. Raw data will be

copied into a “Restricted” folder in the RAW data network folder structure. Data acquisition and processing logs will clearly state which files are restricted.

- vi. **Multibeam Data Field Processing:** Restricted files will be processed and gridded separately from other non-restricted data and will be clearly labeled as such in projects and filenames. The products will be created according to normal field quality-control procedures, but will not be sent to shore with the daily products, in order to not become publicly available via normal channels (FTP / Digital Atlas).
 - vii. **Raw EK 60 and Subbottom Data Acquisition:** Raw data will be logged in the standard folder structure on the acquisition computers. Raw data will be copied into a 'Restricted' folder on the RAW and CRUISE DATA data network folder structure. Data acquisition and processing logs will clearly state which files are restricted.
 - viii. **Cruise Data Transfer (EX to UNH) Package:** In the Cruise Data Package carried from the ship by the Mapping Team Lead, a "Restricted" top-level directory will be added in the cruise data folder. Within the "Restricted" folder the same directory structure as the unrestricted folder will be repeated (i.e. SCS, CTD, Multibeam, Imagery, etc).
 - ix. **CTD and XBT operations** conducted within the buffer zone do not need to be isolated from non-UCH data, or repressed from the *Okeanos* Atlas. CTD and XBT files should follow the normal unrestricted processing procedures and archiving.
 - x. **Daily updates** are normally linked to the location of the ship at the time the update is posted. If daily updates are made during UCH surveys, no position shall be provided. If a position is required, the position should be posted as it makes sense, 5 miles outside of the extent of the survey area.
- c.** Normal transmissions from the ship shall resume after the EX finishes UCH survey operations and exits the 5-mile buffer zone. Exiting the buffer zone should occur at approximately the same location as entry to prevent obvious data location gaps pointing to UCH location.

C. Post-Cruise Follow Up

1. Information Release

- a.** No informal information about UCH should be released to the general public by the ship or personnel. This includes posting information and images on social networking sites like Facebook or personal blogs. Mapping data will be released to the public following the normal process and announcement of discoveries will be made through the appropriate offices and public affairs officials.

2. Standard Mapping Cruise follow-up where UCH is discovered

- a.** The mapping team will provide a brief summary of the survey and target that includes a description of the survey, water depth, site location, site dimensions, bottom type, and images of the target at the best available resolution.
- b.** The EX Cruise Coordinator and the OER Marine Archaeologist have an initial



consultation to discuss the nature of the UCH and its potential significance. This consultation may include other agencies or entities.

- c.** If UCH is determined not to be historically significant no change to standard data management procedures is required.
- d.** If UCH has the potential for historical significance but it is determined that no harm will result by disclosing position information, such as UCH in deep water, no change to standard data management procedures is required.
- e.** If UCH has potential historical significance and disclosing information about the site poses a threat, further discussions will be held on how to minimize potential harmful impacts, including data management decisions outlined in Data Archiving section of this document. The EX cruise Coordinator, a representative from the data management team, OER's marine archaeologist, a representative from the ONMS Maritime Heritage Program, and any parties with jurisdiction, management or other legal ties to the resource shall meet to determine what measures are needed to protect the UCH while minimizing impacts on the distribution of data and data products.

3. UCH Targeted Mapping Cruise Follow-Up

- a.** The mapping team will create a survey report that provides technical details on the survey, data processing and data products. It should contain a list of targets that includes site location, water depth, site dimensions, bottom type/topography, and images of the target at the best available resolution. Other helpful products include SD and kmz files.
- b.** The EX cruise coordinator, OER's marine archaeologist, a representative from the ONMS Maritime Heritage Program, archaeologists involved in the survey, and any parties with jurisdiction, management or other legal ties to the resource shall meet to discuss the potential historical significance of the UCH and the sensitivities of releasing data to the public that can be protected under Section 304 of the National Historic Preservation Act.
- c.** The outcome of this meeting will determine if it is necessary to protect site location information from public release.
- d.** When data can be released
 - i.** If the findings determine that releasing information and data on UCH is not a threat, development of products and data management should follow the guidelines for a standard mapping cruise.
- e.** When data should be protected
 - i.** If it is determined that a site is or has potential to be historically significant and eligible for nomination to the National Register of Historic Places, the location and data containing the location should not be released to the public.
 - ii.** Data products that contain position information will be forwarded to the EX data management team where data and products will be stored in an archive with restricted access.
 - iii.** Cruise plans, cruise reports, situation reports, mapping summary reports and other documents that are publically available outside NOAA or freely



accessible within NOAA shall not provide location information for UCH or survey areas. In certain circumstances the lead archaeologist for the cruise may request that certain UCH sites are not mentioned in the public reports.

4. *UCH mapping follow-up for National Marine Sanctuaries*

- a.** When the EX conducts UCH work inside a National Marine Sanctuary the EX Cruise Coordinator shall inform the OER Marine Archaeologist, ONMS Maritime Heritage Program Director, Sanctuary Superintendent and Sanctuary Maritime Heritage Coordinator on the availability of data products and initial results of the survey. ONMS shall determine the sensitivity of the data and whether or not it can be disclosed to the public. Published metadata shall indicate the point of contact to access UCH data within the NMS system is the Director of the Office of National Marine Sanctuaries.

D. Data Archiving – See Appendix C



Appendix B: TELEPRESENCE-ENABLED ROV OPERATIONS

The following outlines the process for pre-cruise planning, field operations, post-cruise follow up, and data archival procedures for the following scenarios:

- When a cruise conducts ROV operations specifically targeted at UCH.
- When UCH is unexpectedly discovered on non-archaeological operation

A. *Unexpected UCH Discovery*

- During the Cruise: If UCH is unexpectedly discovered during an ROV dive, the onboard Expedition Coordinator should immediately contact OER's Lead Maritime Archaeologist, and the Archaeology Doctors-on-Call identified for that expedition. Those archaeologists should be engaged in the site investigation as soon as possible to provide information to help assess the site discovered. No changes to the data, video or onboard data acquisition processes should be made. A post-dive and post-cruise discussion will be held with the OER archaeologist to determine whether any datasets should be withheld from archive. (Section 2.D.II).
- **Follow-up when UCH is unexpectedly discovered**
 - a. The EX Cruise Coordinator and the OER Marine Archaeologist will have an initial consultation to discuss the nature of the UCH and its potential significance. This consultation may include other agencies or entities.
 - b. If UCH is determined not to be historically significant no change to standard data management procedures is required.
 - c. If UCH has the potential for historical significance but it is determined that no harm will result by disclosing position information, such as UCH in deep water, no change to standard data management procedures is required.
 - d. If UCH is or has potential historical significance and disclosing location information about the site poses a threat, further discussions will be held on how to minimize potential harmful impacts, including data management decisions outlined in the Data Archiving section of this document. The EX cruise Coordinator, a representative from the data management team, OER's marine archaeologist, a representative from the ONMS Maritime Heritage Program, and any parties with jurisdiction, management or other legal ties to the resource shall meet to determine what measures are needed to protect the UCH while minimizing impacts on the distribution of data and data products.

B. *Cruises conducted with ROV operations specifically targeted at UCH.*

1. **Pre-Cruise Planning: ROV Exploration**

a. **Notifying the Team of their Responsibility to Protect Sensitive UCH Resources**

Expedition members and OER personnel to have a legal responsibility to protect sensitive archaeological information (primarily location information) from untimely release.

For a planned UCH cruise, the EC shall notify the CO and each shall have responsibility for ensuring personnel are aware of this responsibility. The EC shall provide an archaeology background document to familiarize personnel with the particular mission and requirements.



Appendix D details the range of existing accountability mechanisms already in place.

2. Pre-dive planning

- a.** Archaeologists will develop a dive plan based on the best available knowledge of the site that will maximize data recovery and minimize any potential impact to the site. The archaeology team will work closely with the cruise coordinator and deep submergence vehicle manager to develop and implement the plan. The plan should include:
 - I.** Objectives (cultural/interdisciplinary science)
 - II.** The types of sensors needed and data to be generated
- b.** As a rule ROV dives will not disturb or touch the shipwreck or cultural feature. Exceptions to this rule must discuss the rationale behind such a decision and incorporate it into the dive plan (collection of diagnostic artifacts or samples is sometimes conducted if the activity leads to better baseline characterization).
- c.** Prior to the cruise any permitting requirements should be identified and if required, permits must be procured.
- d.** Automated Information System (AIS): NOAA requires that the AIS feed which broadcasts information about the ship, including position, course and speed, must remain on at all times for collision avoidance and other safety reasons. Although the [International Maritime Organization's](#) (IMO) Maritime Safety Committee condemns the Internet publication of AIS data, it is easily available for viewing. During the cruise planning phase the Expedition Coordinator will provide the AIS broadcast range on the EX to the chief scientist and science team. The science team, chief scientist, or other parties involved in a UCH mapping cruise should be made aware of this and decide whether the value of the operation merits acceptance of the potential issues/outcomes imposed. A Go/No-Go decision will be made based on this information.

C. Field Operations

- I.** Exploration dives by ROV should be planned to collect optical and acoustic images without causing physical disturbance to the UCH. Representatives and leads from operational groups including the ROV, data/video, and telepresence teams, and ship operations should meet to discuss ROV operations and data collection.
 - a.** The guidelines for mapping operations should be followed to ensure site locations are not disclosed during field operations. SOPs with full operational details are available on the ship.
 - b.** A three-mile buffer zone shall be created around the UCH target or isolated survey box. The time at which the ship enters, and departs the three-mile buffer zone needs to be recorded and provided to the Data Team Lead for post-processing use. Following work at the site, the ship will return to the site where it first entered the three-mile buffer zone to continue operations.
 - c.** The following steps will be taken just prior to entering the five-mile buffer zone in order to stop broadcasting the ship's location while the survey is conducted:
 - I.** NOAA email events will be stopped (OMAO/ET)
 - NOAA Shiptracker: Disable/stop the e-mail updates from the ship going to



OMAO / Shiptracker

- *Okeanos* Atlas: Disable/stop the e-mail updates to NCDDC
 - SAMOS: Disable/stop the e-mail update to FSU containing METOC and flow-through data, etc.
- II.** Telepresence Video Feeds (OER Telepresence team lead): Do not stream any feeds that include the ship’s location, including but not limited to the SCS data screen, or any active mapping data acquisition screens, or video feeds. It is acceptable to stream video feeds that do not include the ship’s location.
- III.** Redirect Live Feed as needed (OER EC or CO): If highly sensitive features (human remains, evidence of human remain such as shoes or other accoutrements, highly valuable items, etc.) are going to be investigated or are unexpectedly encountered during the course of our seafloor investigation, the lead archaeologist, ROV Team Leader, Expedition Coordinator or Commanding Officer has authority to immediately switch the live feed from the ROV and Seirios camera sled to another camera on the ship.
- d.** Daily updates on the *Okeanos* Atlas are normally linked to the location of the ship at the time the update is posted. If daily updates are made during UCH surveys, no position shall be provided. If a position is required, the position should be posted as it makes sense, 3 miles outside of the extent of the site or survey area.
- e.** Normal transmissions from the ship shall resume after the EX finishes UCH survey operations and exits the 3-mile buffer zone. The point of exit should be as near to the point of entry as is feasible to minimize location data gaps pointing to the location of the UCH.
- f.** No informal information about UCH should be released to the general public by the ship or personnel. This includes posting information and images on social networking sites like Facebook, Twitter or personal blogs. Images, video and information on UCH will be released to the public following the normal process and announcement of discoveries will be made through the appropriate offices and public affairs officials.
- g.** In addition to the items listed, the ship sends out automated weather (autoIMET) observations every hour and manual weather observations every 6 hours with positions as a voluntary ship observer. These observations are pulled onto public sites by several different websites and Google Map apps. One example is sailwx.info. This is only accurate to the nearest decimal degree (6 nm). This level of accuracy is not of concern.

D. Post-Cruise Data Management – Appendix C for detail

Following completion of the expedition, the Expedition Coordinator should have a follow-up call with the Data Management Team & OER lead archaeologist to review the datasets collected, confirm those that need to be withheld from public archive, and provide information to the data management team for associated metadata records.

E. Post-Cruise Follow-Up

1. Information Release

- a.** No informal information about UCH should be released to the general public by the



ship or personnel. This includes posting information and images on social networking sites like Facebook or personal blogs. Images, video, and mapping data will be released to the public following the normal process and announcement of discoveries will be made through the appropriate offices and public affairs officials.

- b.** Determination of whether UCH is potentially eligible for nomination to the National Register of Historic Places, or eligible for protection under other legislation such as the Sunken Military Craft Act or National Marine Sanctuary Act, will take some time following completion of the cruise. Sensitive or potentially sensitive information about the UCH is to remain restricted until determination is complete. Following completion of the cruise, the lead Archaeologist will work with others to analyze the UCH data and conduct historical research to determine whether the UCH is eligible for nomination to the National Register of Historic Places.
 - I.** If the UCH is determined to be eligible, the lead Archaeologist will prepare the nomination for the NRHP process.
 - II.** If the UCH is determined to NOT be eligible, and protection of the site does not fall under other legislation, the Lead archaeologist will notify the data management team that site information can be made publicly available.

2. UCH Targeted Cruise Follow-Up

- a.** The EX cruise coordinator, OER's marine archaeologist, a representative from the ONMS Maritime Heritage Program, archaeologists involved in the survey, and any parties with jurisdiction, management or other legal ties to the resource shall meet to discuss the potential historical significance of the UCH and the sensitivities of releasing data to the public that can be protected under Section 304 of the National Historic Preservation Act. The outcome of this meeting will determine if it is necessary to protect site location information from public release.
 - I.** When location data can be released:
 - a.** If the findings determine that releasing information and data on UCH is not a threat, development of products and data management should follow the guidelines for a standard ROV cruise.
 - II.** When location data should be protected:
 - a.** If it is determined that a site is or has potential to be historically significant and eligible for nomination to the National Register of Historic Places, the location and data containing the location should not be released to the public.
 - III.** Data products that contain position information will be forwarded to the EX data management team where data and products will be stored in an archive with restricted access.
 - IV.** Cruise plans, cruise reports, situation reports, mapping summary reports and other documents that are publically available outside NOAA or freely accessible within NOAA shall not provide location information for UCH or survey areas. In certain circumstances the lead archaeologist for the cruise may request that certain UCH sites are not mentioned in the public reports.



Appendix C: Post-Cruise Data Management

Data collected by OER that is considered sensitive will be protected from direct public release until such time as a final determination can be made as to permanent protection. Data in this state will be:

- Fully documented, so as to be independently understandable to users;
- Visible through publication of metadata records by OER;
- Accessible upon request to OER (controlled access by permission);
- Preserved in NOAA archives as ‘restricted’ (not available for direct public access).

These data will not be available for direct public access unless and until they are eliminated from consideration for nomination to the National Register of Historic Places (NHPA Section 304), or for protection under other legislation such as the Sunken Military Craft Act or National Marine Sanctuary Act.

If data are nominated and accepted for any official protection, then the exceptional status will be made permanent, and all documentation updated and finalized as such.

Data generated by the *Okeanos Explorer* is archived under a data management agreement with NCEI. Only data that has potential to reveal the nature and location of UCH shall be restricted from public access. In accordance with the data management agreement, sensitive data from the EX will have restricted access at NCEI. To assist researchers in discovering sensitive data NGDC will publish a metadata record (but not the data) that identifies a point of contact for access. Requests to access the data will be made to the Director of OER who may delegate to the OER marine archaeologist. In lieu of the OER marine archaeologist, the OER Director may delegate to the Director of the ONMS Maritime Heritage Program.

If data is found to be sensitive because it reveals the location of a historically significant cultural resource, Section 304 of the National Historic Preservation Act provides that the head of a Federal agency or other public official shall withhold from public disclosure information about the location, character, or ownership of a historic property when disclosure may cause a significant invasion of privacy; risk harm to the historic property; or impede the use of a traditional religious site by practitioners. Data collected by the EX that is considered sensitive will be archived in a location where it can be withheld from public disclosure.

Data sets and associated products are housed in the appropriate NOAA archive; National Oceanographic Data Center, National Geophysical Data Center, National Coastal Data Development Center, National Climate Data Center, and the NOAA Central Library.

- Digital Atlas: NCEI will develop appropriate metadata records to post on the digital atlas.
- CTD and XBT data collected during mapping operations conducted within the buffer zone will not be repressed from the *Okeanos Atlas* and will be held in a public archive.
- Cruise reports, cruise plans, mapping summary reports and other documents that are publically available outside NOAA or freely accessible within NOAA should not provide location information for UCH or survey areas.

Start and end times for the 3-mile buffer zone surrounding a UCH site need to be provided to the data management team. Datasets containing sensitive location information will be restricted in their entirety,

unless other parsing arrangements have been made. The following datasets may contain sensitive UCH location information and need to be reviewed, post-processed as appropriate, made restricted and pertinent metadata records created and made available.

- Multibeam, sub-bottom and single beam sonar data
- SCS Data Logs are to be restricted
- All ROV dive products (including associated sensor data) need to be restricted
- CTD rosette and *in situ* sensor datasets collected in relation to the UCH, and within the 3 nm buffer zone, need to be restricted.
- All imagery needs to be reviewed and geospatial imagery removed before being made public. Imagery with geospatial information should be restricted.
- Ship track and other datasets within the buffer zone

Appendix D: NDA References

Expedition members and OER personnel to have a legal responsibility to protect sensitive archaeological information (primarily location information) from untimely release. The following summarizes the types of personnel who might be engaged in an *Okeanos Explorer* Expedition, where their responsibility to protect sensitive location information about UCH lies, and whether this responsibility has already been addressed or signature of a Non-Disclosure Agreement (NDA) is required to allow their participation in an expedition with planned UCH operations.

- If they are federally-employed scientists, they agreed not to disclose sensitive information and to adhere to federal laws as part of the terms of their employment with the federal government.
- The crew onboard the ship are under the CO's purview. On *Okeanos Explorer*, all crew are federal employees, and thus agreed not to disclose sensitive information and to adhere to federal laws as part of the terms of their employment with the federal government.
- All other members of the Mission team who are not federal employees and are engaged at-sea or ashore (including technicians, vehicle operators, students, etc.) are required to sign a non-disclosure agreement to protect sensitive cultural heritage information as part of their contract agreement.
- Other OER personnel who have access to data and information on the FTP site are either federal employees or contractors and need to be similarly reminded of their responsibilities. OER contractors signed an NDA as condition of employment with the federal government (this should be confirmed annually).

At the beginning of the expedition, all personnel need to be notified of their responsibilities:

MISSION PERSONNEL (Notified by: Expedition Coordinator)		
Employee	Accountability Mechanism for With-holding Sensitive Data	Action
NOAA Federal Employees	NOAA and Federal Contract	Reminder of contract, and provide archaeology background document.
Mission Contractors (UCAR, ERT Inc., 2020 Company LLC)	Non-Disclosure Agreement	Confirm all contractors signed NDA. Send reminder of contract and provide archaeology background document.

NOAA/Federal Scientists	NOAA and Federal Contract	Reminder of Contract, and provide Archaeology background document
Other Federal Scientists (BOEM, Navy, NPS, etc.)	Federal Contract	Reminder of Contract, and provide Archaeology background document
Other Mission Personnel and Scientists	Non-Disclosure Agreement	Get NDA Signed
Okeanos Explorer Crew (Notified by: CO or Desingnee)		
NOAA Federal Employees	Subject to NOAA and the ship's communications plans and protocols for sensitive data	CO sends out reminder of contract to ship via All Hands, and provides Archaeology background document
Other Federal Employees (e.g. Public Health Service)	Subject to NOAA and the ship's communications plans and protocols for sensitive data	CO sends out reminder of contract to ship via All Hands, and provides Archaeology background document
Wage Mariners	Subject to NOAA and the ship's communications plans and protocols for sensitive data	CO sends out reminder of contract to ship via All Hands, and provides Archaeology background document

