

W00445

NOAA Form 76-35A

U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Ocean Survey

DESCRIPTIVE REPORT

Type of Survey: Navigable Area

Registry Number: W00445

LOCALITY

State: California, Oregon, Washington

General Locality: CA, OR, WA Coastline

Sub-locality: Cape Mendocino to Juan de Fuca Canyon

2017

CHIEF OF PARTY
Jennifer Waddell
E/V Nautilus

LIBRARY & ARCHIVES

Date:

HYDROGRAPHIC TITLE SHEET

W00445

INSTRUCTIONS: The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

State: **California, Oregon, Washington**

General Locality: **CA, OR, WA Coastline**

Sub-Locality: **Cape Mendocino to Juan de Fuca Canyon**

Scale: **1:10,000**

Dates of Survey: **08/14/2017 to 09/04/2017**

Instructions Dated: **N/A**

Project Number: **ESD-PHB-18**

Field Unit: **E/V *Nautilus***

Chief of Party: **Jennifer Waddell**

Soundings by: **Multibeam Echo Sounder**

Imagery by: **N/A**

Verification by: **Pacific Hydrographic Branch**

Soundings Acquired in: **meters at Mean Sea Level**

Remarks:

The purpose of this survey is to provide contemporary surveys to update National Ocean Service (NOS) nautical charts. All separates are filed with the hydrographic data. Any revisions to the Descriptive Report (DR) generated during office processing are shown in bold red italic text. The processing branch maintains the DR as a field unit product, therefore, all information and recommendations within the body of the DR are considered preliminary unless otherwise noted. The final disposition of surveyed features is represented in the OCS nautical chart update products. All pertinent records for this survey, including the DR, are archived at the National Centers for Environmental Information (NCEI) and can be retrieved via <http://www.ncei.noaa.gov/>.

DESCRIPTIVE REPORT MEMO

June 20, 2018

MEMORANDUM FOR: Pacific Hydrographic Branch

FROM: Jennifer Waddell
Lead Scientist, E/V Nautilus

SUBJECT: Submission of Suvey W00445

In partnership with the NOAA Channel Islands National Marine Sanctuaries (CINMS), the Ocean Exploration Trust acquired exploratory mapping data of geological and geophysical aspects of the region, while covering areas not recently acquired with modern day survey techniques, in an effort to fill in gaps identified by the Southern California Seafloor Mapping Initiative. The CINMS and NOAA National Center for Coastal and Ocean Science (NCCOS) started the Southern California Seafloor Mapping Initiative (<http://sanctuaries.noaa.gov/science/conservation/pdfs/seafloor-mapping-initiative.pdf>) to identify areas that need to be mapped with modern hydrographic methods and organize resources to coordinate closing those gaps. Accurate, full coverage data is critical for informing marine management decision-making. The Office of Coast Survey is contributing to this initiative by post processing the Ocean Exploration Trust data for application to the chart and for use by NCCOS and the CINMS.

Single resolution grids were created in CARIS HIPS and SIPS 10.4.

Due to the nature of the survey, soundings were not reduced to MLLW and remain at surveyed datum.

The submitted data was at Survey Time Water Level. New tide uncertainty values were applied to the data to bring it to Mean Sea Level. The data was then gridded and shifted to Mean Lower Low Water using a separation model.

The Joint Hydrographic Center Integrated Ocean and Coastal Mapping Group received raw and processed data from the Ocean Exploration Trust and various reports including: instrument lists and calibration reports, equipment wiring diagrams, vessel survey report, and the most recent Multibeam Advisory Committee (MAC) System Review report from 2015. These reports have been included in the data submission. Qimera version 1.2.5 was used by OET to process the data and exported GSFs were included in the data submission. Some of the raw data were used to process the grids submitted to the Coast Survey's Hydrographic Surveys Division in Caris Hips and Sips 10.4. This survey also contains data sourced directly from the submitted GSFs. Sound speed data was collected and applied during acquisition. Sound speed data are stored in the raw .ALL files. No major sound speed errors were found in the dataset. This data was reconverted from the raw .all files and had sound velocity, tides and uncertainty applied in order to create the CUBE grids that will be used for nautical chart updates. The data that was not converted from raw was converted into CARIS HIPS and SIPS from the processed GSF data at the NOAA's Atlantic Hydrographic Branch. This data did not have tides applied after conversion and only had the Uncertainty applied in order to make the necessary grids. All data has been processed in CARIS HIPS and SIPS and has been scanned for "fliers",

depth anomalies, and where these anomalies exist the data has been examined and spurious soundings have been removed.

New tide uncertainty values were applied to the data to bring it to Mean Sea Level. The data was then gridded and shifted to Mean Lower Low Water using a separation model.

There were no DTONs created for this survey.

Ocean Exploration Trust acquired the data outlined in this report. Data are available at www.oceanexplorationtrust.org

The survey covers an area of predominantly sparse chart soundings. High variability is observed between charted soundings and survey soundings, with some flat areas agreeing well and some areas different by 50 -100m, due to the highly irregular nature of the seabed in the area. Large discrepancies throughout the survey exist between charted and W00444 survey depths.

Concur with clarification. W00442 - W00445 were processed and reviewed concurrently and it was noted that there was generally good agreement amongst the surveys in the areas of overlap. Any disagreements between surveys were likely due to sediment shifting in certain areas. All of the surveys are offshore in nature and extremely deep, therefore, all of the discrepancies noted with the charted data are not navigationally significant regardless of the magnitude.

* No crosslines were collected as part of the data set, however transit lines were recorded and included in the submission and provide some areas for perpendicular line comparison. Transit lines were included to maximize data potential and provide more opportunity for overlap with other surveys for depth validation. * This survey does meet charting specifications and is adequate to supersede prior data. These data are adequate to supersede charted data in their common areas. This survey is complete and no additional work is required. All surfaces, this Survey Summary Report, and all accompanying records and data are approved. All records are forwarded for final review and processing to the Processing Branch.

Concur with clarification. The data has been given CATZOC B and is only adequate to supersede data that has been evaluated to have equal or lesser quality, such as older CATZOC B data or any CATZOC C or D data.

Survey data should be archived at NCEI and the DR memo forwarded to HSD.

Metadata for Survey W00445	
Project	ESD-PHB-18
Survey	W00445
State	CaliforniaOregonWashington
Locality	CA, OR, WA Coastline
Sub-Locality	Cape Mendocino to Juan de Fuca Canyon
Scale of Survey	1:10000
Sonars Used	Kongsberg Maritime EM302 (MBES)
Horizontal Datum	World Geodetic System (WGS) 1984
Vertical Datum	Mean Sea Level
Vertical Datum Correction	VDatum
Projection	Projected UTM 10N
Field Unit	E/V Nautilus
Survey Dates	08/14/2017 - 09/04/2017
Chief of Party	Ocean Exploration Trust
Submission Date	06/20/2018



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF OCEAN AND COASTAL RESOURCE MANAGEMENT
Olympic Coast National Marine Sanctuary
115 East Railroad Avenue, Suite 301
Port Angeles, WA 98362-2925
August 11, 2017

Jenny Waddell, Research Coordinator
Olympic Coast National Marine Sanctuary
115 E Railroad Ave
Port Angeles, WA 98362

Dr. Nicole Raineault, Ocean Exploration Trust
Ocean Exploration Trust
PO Box 42
Old Lyme, CT 06371

Dear Ms. Waddell and Dr. Nicole Raineault:

The National Oceanic and Atmospheric Administration, Office of National Marine Sanctuaries (ONMS) issues you this Letter of Authorization (LOA) to conduct certain activities that are otherwise prohibited during research cruise, "NA086: Olympic Coast Canyon and Ocean Acidification Cruise", within Olympic Coast National Marine Sanctuary (OCNMS) for the purpose of assisting sanctuary management under Superintendent's permit OCNMS-2014-001.

These authorized activities are to be conducted in accordance with the detailed terms and conditions in the attached permit (OCNMS-2014-001), and the additional Special Term and Conditions specified below.

Activities planned for cruise NA086 that are otherwise prohibited are:

§922.152(a)(2)(i) Discharging or depositing, from within or into the Sanctuary, other than from a cruise ship, any material or other matter . . .

§922.152(a)(5) Drilling into, dredging or otherwise altering the submerged lands of the Sanctuary; or constructing, placing or abandoning any structure, material or other matter on the submerged lands of the Sanctuary, except . . .

Authorized Activities Within OCNMS

1. Alteration of the seabed from touchdown and operations of two remotely operated vehicles (ROVs).
2. Alteration of the seabed from recovering lost oceanographic equipment.
3. Removal of benthic biota for detailed analysis.



4. Collection of geological samples to validate bottom type.
5. Discharge of thirty (30) expendable bathythermographs (XBTs) into sanctuary waters.
6. Temporary discharge of an autonomous underwater vehicle (AUV) into sanctuary waters. The authorized operation of the AUV includes permission to release the 8 pound steel ballast in emergency situations.

Permitted Activity Location:

The permitted activities are allowed throughout the sanctuary.

Special Terms and Conditions

1. All equipment and instruments deployed (except the XBTs, as specified above), shall be recovered, brought to the surface and stored or disposed of properly onshore no later than the expiration date of this LOA. At no time may hazardous materials, such as batteries, be exposed to the sea or discarded within the sanctuary.
2. The following sponge collections are authorized. Five to ten samples from individuals of each of the following species or type (these samples should be collected from more than one site).
 - a. *Thenea muricata*
 - b. *Farrea truncata* complex
 - c. *Bathydorus levis pseudospinosus*
 - d. White barrel sponges
 - e. *Mycale* sp.
 - f. Small massive "puffball" type sponge
 - g. *Xestospongia* sp.
 - h. *Spheciospongia/ Latrunculia* - grey moon
 - i. *Haliclona* spp.
 - j. *Heterochone* spp.
 - k. *Aphrocallistes* flat growth form
3. The following coral collections are authorized. Unless otherwise noted, three to five samples of each of the following species, per site (4-6" clip), from five different sites.
 - a. *Antipathes* spp.
 - b. *Bathypathes* spp.
 - c. *Lillipathes wingi*
 - d. *Parantipathes* sp.
 - e. *Alcyonium* sp.
 - f. *Neospongodes* sp.



- g. *Iridogorgia* sp.
 - h. *Radicipes* sp.
 - i. *Acanella* sp.
 - j. *Keratoisis* spp.
 - k. *Lepidisis* spp.
 - l. *Eugorgia* sp.
 - m. *Sibogagorgia* sp.
 - n. *Clavularia* spp.:
 - o. *Protoptilum* sp.
 - p. *Thesea* spp.
 - q. *Corallium* sp.
 - r. *Scleroptilum* sp.
 - s. *Leptogorgia* sp.
 - t. *Swiftia* spp.
 - u. *Funiculina* spp.
 - v. *Paragorgia* spp.
 - w. *Anthoptilum* spp.
 - x. *Gersemia* spp.
 - y. *Primnoa* spp. - 10-15 samples (4-6" branch clip) of *Primnoa* at 3 - 5 different sites
 - z. *Lophelia* spp. - 6 samples (4-6" branch clips) spread among multiple sites.
 - aa. *Desmophyllum dianthus* - 1-2 samples per dive site.
4. As little as possible of the coral colony shall be collected in order to preserve the colony while allowing for species identification. Samples should not be collected from the only or the largest colony in an area. Instead, a sample from a colony of average size should be targeted. Damaged corals shall be collected before intact corals are considered. Samples should come from dense/abundant groups rather than isolated specimens. Collections should be done following the protocols of NOAA Technical Memorandum NMFS-OPR-28, Deep-Sea Coral Collection Protocols (Etnoyer, et al, 2006).
5. On a limited basis, solitary or uncommon individual animals may be collected whole if necessary for taxonomic identification. This authorization should only be exercised after a discussion with one of the lead scientists (Jenny Waddell or Dr. Elizabeth Clarke) and consideration of the importance of the collection to sanctuary management.
6. Holothurians – The collection of six samples of Holothurians (sea cucumbers), from up to 15 different sites, is authorized.
7. The LOA holders will provide information on the sponge, coral and holothurians collections, including location each sample was collected, in-situ documentation, the intended use of the collected samples, how the sample will be preserved and the location the sample will be shipped and ultimately stored.



8. Collection of geological samples is authorized, in the following numbers:
 - a. ROV collected rock/sediment samples - 3-5 each from 15 sites (collected by ROV manipulator).
 - b. Push cores - up to 4 samples each from 15 sites
9. No activity conducted under this LOA shall disturb or impact historical or marine archaeological resources of the sanctuaries. If historical or marine archaeological resources other than the USS Bugara are encountered, immediately contact George Galasso, 360-460-8230 or george.galasso@noaa.gov.
10. The LOA holders shall submit a short summary of all activities in the sanctuary to the attention of the George Galasso, 360-460-8230 or george.galasso@noaa.gov by October 31, 2017. This summary shall include information about the research cruise objectives, deployment and retrieval of scientific equipment, any environmental observations that may be relevant to the activities, and whether the operations were successful.
11. If equipment or instruments are lost, George Galasso, 360-460-8230 or george.galasso@noaa.gov shall be contacted within 24 hours indicating when and where the material was lost. Any plan of recovery that includes seafloor contact would require approval from the sanctuary superintendent before implementation.
12. This activity may also require permission from other agencies. This LOA is not valid until all other necessary permits and/or authorizations are obtained.

This LOA is valid through September 30, 2017. Both this LOA and the enclosed permit must accompany you while conducting any survey work in OCNMS.

If you have any questions, please contact George Galasso at 360-406-2076 or george.galasso@noaa.gov. Thank you for your continued cooperation with the ONMS.

Respectfully,



Carol Bernthal, Superintendent
Olympic Coast National Marine
Sanctuary

Enclosure





UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

Office of National Marine Sanctuaries
1305 East-West Highway
Silver Spring, Maryland 20910

Ms. Carol Bernthal
Superintendent
NOAA Olympic Coast National Marine Sanctuary
115 East Railroad Avenue
Suite 301
Port Angeles, WA 98362

Dear Ms. Bernthal:

The National Oceanic and Atmospheric Administration, Office of National Marine Sanctuaries (ONMS) has approved the issuance of permit number OCNMS-2014-001 to conduct activities within Olympic Coast National Marine Sanctuary (sanctuary). Activities are to be conducted in accordance with the terms and conditions of permit number OCNMS-2014-001 (enclosed).


This permit is not valid until signed and returned to the ONMS. Retain one signed copy and carry it with you while conducting the permitted activities. An additional copy must be signed and returned, by either mail or email, to the following individual within 30 days of issuance and before commencing any activity authorized by this permit:

National Permit Coordinator
NOAA Office of National Marine Sanctuaries
1305 East-West Highway (N/NMS-2)
SSMC4, 11th Floor
Silver Spring, MD 20910
Vicki.Wedell@noaa.gov

Your permit contains specific terms, conditions and reporting requirements. Review them closely and fully comply with them while undertaking permitted activities.

If you have any questions, please contact Vicki Wedell at 301-713-7237.

Sincerely,


Daniel J. Basta
Director

Enclosure





UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

Office of National Marine Sanctuaries
1305 East-West Highway
Silver Spring, Maryland 20910

OLYMPIC COAST NATIONAL MARINE SANCTUARY
SUPERINTENDENT'S PERMIT

Permittee:

Ms. Carol Bernthal
Superintendent
NOAA Olympic Coast National Marine Sanctuary
115 East Railroad Avenue
Suite 301
Port Angeles, WA 98362

Permit Number: OCNMS-2014-001

Effective Date: January 1, 2014

Expiration Date: December 31, 2018

Project Title: Superintendent's Permit

This permit is issued for activities in accordance with the National Marine Sanctuaries Act (NMSA), 16 USC §1431 *et seq.*, and regulations thereunder (15 CFR Part 922). All activities must be conducted in accordance with those regulations and law. No activity prohibited in 15 CFR Part 922 is allowed except as specified in the activity description below.

Subject to the terms and conditions of this permit, the National Oceanic and Atmospheric Administration (NOAA), Office of National Marine Sanctuaries (ONMS) hereby authorizes the permittee, along with specific individuals who may be authorized by the permittee, to conduct activities within Olympic Coast National Marine Sanctuary (OCNMS or sanctuary). These activities must be those reasonable and necessary to fulfill management responsibilities consistent with the purposes of the sanctuary management plan, the NMSA, and the regulations cited above.

Permitted Activity Description:

The following activities are authorized by this permit:

1. Alteration of the seabed for the following purposes:
 - a. Placement of temporary mooring and buoy anchors and permanent marking devices;
 - b. Placement of scientific sampling equipment, measuring devices and related equipment;
 - c. Removal of biological and geological samples from the seabed; and
 - d. Investigation of benthic habitats for sea floor mapping verification, debris removal and identification and monitoring of sanctuary resources using camera sleds, remotely operated vehicles, submersibles, autonomous underwater vehicles, and a variety of bottom sampling tools and other similar equipment.

2. Overflights of the sanctuary at altitudes less than 2,000 feet (within overflight restriction zones) to conduct resource protection, education and research activities



such as surveys, removal of matter or debris, emergency response, law enforcement and search/rescue training, maintenance of navigation aids, and aerial photography and videography.

3. Marine mammal, sea turtle, and sea bird disturbance during activities (e.g., overflights, approach in boats) that directly support resource protection and research activities, such as population monitoring and data collection. See Special Condition #5.
4. Emergency response, injury assessment, mitigation, restoration, monitoring, and planning as approved by ONMS headquarters, consistent with (where appropriate) NOAA Damage Assessment and Restoration policies and procedures.
5. The returning of confiscated sanctuary resources to their natural environment in coordination with appropriate federal, tribal or state resource agencies.
6. Small scale manipulation or removal of sanctuary resources for educational, conservation or sanctuary research purposes, consistent with and benefiting sanctuary goals and purposes.
7. Sampling and removal of exotic species in coordination with other federal, tribal and state resources agencies, as appropriate.
8. Participation in permitted activities of other sanctuary users.
9. Discharge of materials or other matter necessary and incidental to the training of persons or entities for valid search and rescue, emergency response and law enforcement responsibilities in the sanctuary.
10. Discharge and/or abandonment of materials incidental to the conduct of research activities in the sanctuary, such as expendable bathythermographs (XBTs) used in oceanographic studies or discrete, permanent markers.
11. Movement or recovery of historical or cultural resources or archaeological site disturbance under time-sensitive emergency situations to protect cultural, historical, or archeological resources from loss, destruction or injury. See Special Condition #7.

No further violation of sanctuary regulations is allowed.

Permitted Activity Location:

The permitted activity is allowed only in the following location(s):

Throughout the Olympic Coast National Marine Sanctuary.

Special Terms and Conditions:

1. The permittee is responsible for all management activities within the sanctuary that are authorized by this permit and must approve any such activities prior to their execution.
2. Any ONMS staff member (including contract employees) may conduct activities under this permit if authorized to do so by the permittee. Authorized staff must carry a copy of this permit while conducting any such activities.
3. Any non-ONMS staff member may conduct work under this permit if they have a letter from the permittee stating that their activities are being carried out under permit number OCNMS-2014-001 and stipulating the scope and duration of the authorization. These individuals must carry a copy of this permit and the authorizing letter while conducting any such activities. Copies of any letters authorizing others to act under this permit shall be uploaded to the OSPREY database under permit record OCNMS-2014-001.
4. Any activities taken under the authority of this permit (including both staff and non-staff activities) shall be recorded and uploaded to the OSPREY database under permit record OCNMS-2014-001.
5. Any activities that may result in marine mammal, sea turtle, or seabird disturbance are to be conducted only in coordination with NOAA Fisheries, the U.S. Fish and Wildlife Service, and other resource trustees, as may be required by law.
6. The activities allowed under this permit were contemplated in and covered by NEPA analyses prepared for the sanctuary when designated and/or during subsequent management plan reviews, or are otherwise categorically excluded from further analysis under NEPA. However, for any actions proposed to occur under this permit for which this may not be the case, the permittee is required to complete any required further assessment under NEPA that may be necessary prior to taking that action. The permittee can contact the ONMS National Permit Coordinator for assistance in making this determination, if needed.
7. In the event that site disturbance or artifact movement or recovery is required for time-sensitive emergency purposes to protect historical or cultural resources, the permittee or designated staff member must first consult with the appropriate tribal historic preservation officer(s), a representative from the State Historic Preservation Office and a NOAA/ONMS archeologist to determine the level of threat and the appropriate response. Even when time is of the essence, all activities must be carried out in compliance with the laws, regulations and guidelines of the Federal Archeological Program and under the supervision of a professional archeologist, as designated by a NOAA/ONMS archeologist. Any non-time-sensitive site disturbance or historical or cultural resource movement or recovery must be conducted under a separate permit consistent with the requirements of Section 106 of the National Historic Preservation Act.
8. No activity may result in substantial injury to sanctuary resources and qualities.



UNITED STATES DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

NATIONAL OCEAN SERVICE- Office of Coast Survey

Hydrographic Surveys Division: Pacific Hydrographic Branch
Seattle, Washington 98115

April 25th 2019

External Source Data Use Permissions Form

Data provider name and title:

Lindsay J. Gee
Mapping and Science Coordinator
Ocean Exploration Trust
215 South Ferry Road
Narragansett RI 02882
603-957-1461

NOAA's Office of Coast Survey greatly appreciates your voluntary contribution of data. These data will be used to update NOAA's nautical charts and ancillary products. Once processed, these data will be archived at the National Center for Environmental Information (NCEI) and made publicly available. Before the Office of Coast Survey applies your data to nautical charts, please acknowledge that you understand and accept that these data will be considered in the public domain once it is archived at NCEI. We require your acknowledgement to apply your data to nautical charts and archive it at NCEI. Thank you for your continued support.

Hydrographic survey/dataset name and description:

E/V Nautilus Exploratory Mapping Data in the vicinity of Olympic Coast National Marine Sanctuary, Channel Islands National Marine Sanctuary and in areas identified by the Southern California Seafloor Mapping Initiative.

Data provider signature:

Thank you,

Kurt Mueller
Physical Scientist
National Oceanic and Atmospheric Administration
Pacific Hydrographic Branch
7600 Sand Point Way NE
Seattle, WA 98115
206-526-6853



APPROVAL PAGE

W00445

Data meet or exceed current specifications as certified by the OCS survey acceptance review process. Descriptive Report and survey data except where noted are adequate to supersede prior surveys and nautical charts in the common area.

The following products will be sent to NCEI for archive

- Descriptive Report
- Collection of Bathymetric Attributed Grids (BAGs)
- Processed survey data and records
- GeoPDF of survey products

The survey evaluation and verification has been conducted according current OCS Specifications, and the survey has been approved for dissemination and usage of updating NOAA's suite of nautical charts.

Approved: _____

Commander Olivia Hauser, NOAA
Chief, Pacific Hydrographic Branch