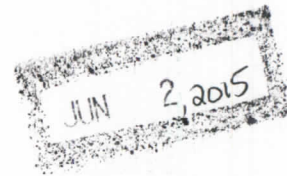





UNITED STATES DEPARTMENT OF COMMERCE

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



MEMORANDUM FOR: Lieutenant Commander Jeffrey Shoup, NOAA
Commanding Officer, NOAA Ship *Nancy Foster*

FROM:  CAPT NOAA
Captain Anne K. Lynch, NOAA
Commanding Officer, NOAA Marine Operations Center-Atlantic

SUBJECT: Project Instruction for NF-15-04
FKNMS Ecological Assessment

Attached is the final Project Instruction for NF-15-04 FKNMS Ecological Assessment Survey, which is scheduled aboard NOAA Ship *Nancy Foster* during the period of 07 June to 12 June, 2015. Of the 6 DAS scheduled for this project, 6 days are funded by Line Office Allocation. This project is estimated to exhibit a Medium Operational Tempo. Acknowledge receipt of these instructions via e-mail to OpsMgr.MOA@noaa.gov at Marine Operations Center-Atlantic.

Attachment

cc:
Cynthia Cooksey
Jeff Hyland
Paul Comar



Final Project Instructions

JUN 2, 2015

Date Submitted: April 8, 2015
Platform: NOAA Ship *Nancy Foster*
Project Number: NF-15-04
Project Title: FKNMS Ecological Assessment
Project Dates: June 7, 2015 to June 12, 2015

Prepared by: COOKSEY.CYNTHIA.LEE.1365837
Digitally signed by COOKSEY.CYNTHIA.LEE.1365837631
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=OTHER,
ou=COOKSEY.CYNTHIA.LEE.1365837631
Date: 2015.05.21 11:05:05 -04'00'
631
Cynthia Cooksey
Chief Scientist
Center for Coastal Environmental Health and Biomolecular Research,
NCCOS, NOS, NOAA

Approved by: HYLAND.JEFFREY.L.DR.13658
Digitally signed by HYLAND.JEFFREY.L.DR.1365846673
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI,
ou=OTHER, cn=HYLAND.JEFFREY.L.DR.1365846673
Date: 2015.05.21 13:51:32 -04'00'
46673
Jeff Hyland
PARB Branch Chief
Center for Coastal Environmental Health and Biomolecular Research,
NCCOS, NOS, NOAA

Approved by: COMAR.PAUL.G.13
Digitally signed by COMAR.PAUL.G.1365867468
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI,
ou=OTHER, cn=COMAR.PAUL.G.1365867468
Date: 2015.06.02 10:20:31 -04'00'
65867468
Paul Comar
Acting Director
Center for Coastal Environmental Health and Biomolecular Research,
NCCOS, NOS, NOAA

Approved by: *Anne K. Lynch* COMAR **Dated:** 6/2/2015
Captain Anne K. Lynch, NOAA
Commanding Officer
Marine Operations Center - Atlantic

I. Overview

A. Brief Summary: This project will provide quantitative data on the status of ecosystem health within Florida Keys National Marine Sanctuary (FKNMS), based on multiple indicators of ecological condition, which in turn will provide direct support to development of Sanctuary Condition Reports and Sanctuary Management Plans. Accordingly, this project links directly to NCCOS's "Coastal & Marine Planning (CMP)" priority, as well as the NOS Road Map's "Place-Based Conservation" priority (Outcome PB1). This project also supports the development of data on patterns of marine biodiversity in support of the Marine Biodiversity Observing Network (MBON), which is focusing on Sanctuaries including FKNMS as one of its initial demonstration sites. The project would provide relevant data for FKNMS, including information to define spatial patterns of diversity in relation to various environmental controlling factors, biodiversity hotspots, and potential problematic areas related to human impacts.

The protocols and design of this study will be similar to those used in previous studies conducted by us in other sanctuaries as well as a series of offshore studies, thereby, providing a basis for comparing conditions within these protected areas to surrounding non-sanctuary waters and will support among-sanctuary to national comparisons. Project deliverables will include a quantitative record, in an environmental report card fashion, of the status of ecosystem health within FKNMS and a baseline for quantifying future change in relation to natural factors (e.g., climate-based) or anthropogenic impacts (e.g., pollution). The resulting GIS-based maps of habitat quality, produced in coordination with Chris Taylor's 'Going deeper to support sanctuary management plans' project, will provide a simple, easy-to-interpret tool for managers to use in documenting status and trends in condition and identifying potential vulnerable areas or areas that need management attention.

Project Period: June 7 – 12, 2015.

B. Days at Sea (DAS)

Of the 6 DAS scheduled for this project, 0 DAS are funded by an OMAO allocation, 6 DAS are funded by a Line Office Allocation, 0 DAS are Program Funded, and 0 DAS are Other Agency funded. This project is estimated to exhibit a Medium Operational Tempo.

C. Operating Area: All sampling activities will occur within the bounds of the Florida Keys National Marine Sanctuary in water depths > 10 m and avoiding all special research areas (as designated by FKNMS), known hard-bottom habitats and dense seagrass meadows (Table 1 and Figure 1).

D. Project Objectives: The primary objective of this study is to assess the status of ecological condition and potential stressor impacts in unconsolidated sediments and overlying waters of the FKNMS, based on a field survey performed in June 2015, using 6 Days-At-Sea on the NOAA R/V *Nancy Foster*. Sampling will be conducted at 30 stations using multiple indicators of general habitat characteristics, potential stressors, biological condition, and human-health risks and aesthetics. Stations were selected using a probabilistic sampling design to allow unbiased statistical estimates of the spatial

extent and magnitude of condition with respect to the various measured indicators and corresponding management thresholds. Results also will serve as a baseline for monitoring and detecting change over time in support of other NCCOS priorities including “Stressor Impacts, Mitigation & Restoration (SIMR)” and “Coastal Climate Vulnerability & Resilience (CCVR).”

The FKNMS 2011 Condition Report acknowledged that a comprehensive assessment of contaminants was not possible in the sanctuary due to lack of information on geographic extent, spatial variation, temporal variability and toxicity. In addition, while unconsolidated sediments (sand and mud) are one of the dominant habitats of the FKNMS, playing vital roles in detrital decomposition, nutrient cycling, and energy flow to higher trophic levels, an overall assessment of environmental condition within this habitat has never been completed. The proposed study will help to fill this gap for future Sanctuary Condition Reports. The resulting GIS-based maps of habitat quality will also provide a simple, easy-to-interpret tool for managers to use in documenting status and trends in condition and identifying potential vulnerable areas or areas that need management attention.

A secondary objective of this project is supporting the development of data on patterns of marine biodiversity in support of the Marine Biodiversity Observing Network (MBON), which is focusing on Sanctuaries including FKNMS as one of its initial demonstration sites. The project would provide relevant data for FKNMS, including information to define spatial patterns of diversity in relation to various environmental controlling factors, biodiversity hotspots, and potential problematic areas related to human impacts.

E. Participating Institutions: NOAA/NOS/NCCOS; NOAA/NCEI; Washington College

F. Personnel/Science Party: name, title, gender, affiliation, and nationality

Name (Last, First)	Title	Date Aboard	Date Disembark	Gender	Affiliation	Nationality
Balthis, Len	Scientist	6/6/2015	6/13/2015	M	NOAA	U.S. Citizen
Cooksey, Cynthia	Chief Scientist/Watch Lead	6/6/2015	6/13/2015	F	NOAA	U.S. Citizen
Cross, Scott	Scientist	6/6/2015	6/13/2015	M	NOAA	U.S. Citizen
Daugomah, James	Scientist	6/6/2015	6/13/2015	M	NOAA	U.S. Citizen
Dubick, JD	Scientist	6/6/2015	6/13/2015	M	NOAA Contractor	U.S. Citizen
Fuquay, Jennifer	Scientist	6/6/2015	6/13/2015	F	NOAA Contractor	U.S. Citizen
Hyland, Jeff	Watch Lead	6/6/2015	6/13/2015	M	NOAA	U.S. Citizen
Koontz, Erika	Scientist	6/6/2015	6/13/2015	F	Washington College	U.S. Citizen
McFee, Wayne	Scientist	6/6/2015	6/13/2015	M	NOAA	U.S. Citizen

Name (Last, First)	Title	Date Aboard	Date Disembark	Gender	Affiliation	Nationality
West, Blaine	Scientist	6/6/2015	6/13/2015	M	NOAA Contractor	U.S. Citizen

G. Administrative

1. Points of Contacts:

Chief Scientist: Cynthia Cooksey; 219 Fort Johnson Road, Charleston, SC 29412; 843-762-8653; Cynthia.cooksey@Noaa.gov

Alternate: Jeff Hyland; 219 Fort Johnson Road, Charleston, SC 29412; 843-762-8652; jeff.hyland@noaa.gov

Ship Operations:

LT Lyndsey Davis
Lyndsey.davis@noaa.gov
301-713-7780 VOIP
843-697-0901 Ship Cell

MOC-A
LCDR Donald Beaucage
Donald.beaucage@noaa.gov
757-441-6842 Office
808-292-3411 Cell

2. Diplomatic Clearances

None Required.

3. Licenses and Permits

This project will be conducted under the Scientific Research Permit (U.S.) National Marine Sanctuary Permit # FKNMS-2015-047 issued on May 19, 2015 to Cynthia Cooksey (Appendix A).

II. Operations

The Chief Scientist is responsible for ensuring the scientific staff are trained in planned operations and are knowledgeable of project objectives and priorities. The Commanding Officer is responsible for ensuring all operations conform to the ship's accepted practices and procedures.

A. Project Itinerary:

Mobilization Date: Sat. June 6, 2015	Location: Key West, FL
Depart: Sunday June 7, 2015	Location: Key West, FL
Operations: June 7 – June 12, 2015	Location: FKNMS
Arrive: Friday June 12, 2015	Location: Key West, FL
DeMob: Sat. June 13, 2015	Location: Key West, FL

B. Staging and Destaging: Scientists arrive and sampling equipment will be loaded on the ship in Key West, FL June 6. Supply loading will require use of ship's crane for < 1 hr in early afternoon (time to be set by ship personnel). All scientific staff will sleep aboard the ship on the evening of June 6. The ship is expected to depart Key West, FL no later than 1000 on June 7 to begin transit to first station. Sampling will continue in the FKNMS through June 12. Sampling will be completed in time to allow transit of the vessel to Key West by approximately 1500 on June 12. Scientists will sleep aboard the ship the evening of June 12. Scientists will remove all samples, equipment, and chemicals from the ship upon completion of the cruise no later than the morning of June 13.

C. Operations to be Conducted:

Thirty randomly selected stations will be sampled throughout the above-mentioned area of operations (Figure 1 and Table 1). At each station, a water-column profile will be completed using the ship's CTD, discrete water samples will be collected at surface depths using the ship's CTD rosette sampler, sediment samples will be collected using a Young-modified Van Veen Grab (0.04m²), and hook-n-line fishing will be conducted to acquire fish for tissue samples. We will be conducting round-the-clock (24-hr) operations. Estimated time on station is 2 hrs.

At each station, samples will be obtained for characterization of the following core indicators: (1) community structure and composition of benthic macroinfauna (> 0.5 mm); (2) concentration of chemical contaminants in sediments (metals, pesticides, PCBs, PAHs, PBDEs); (3) sediment toxicity (Microtox, reporter gene assay, sea urchin assay); (4) general habitat conditions (water depth, dissolved oxygen, conductivity, pH, temperature, chlorophyll a, total suspended solids, water-column nutrients, phytoplankton community, % silt-clay versus sand content of sediment, organic-carbon content of sediment); and (5) condition of selected demersal fish species caught by hook-n-line (contaminant body burdens and visual evidence of pathological disorders). Sampling methods for these various core indicators are discussed below. Samples for water column and sediment microplastics will also be collected.

An overall summary of sampling protocols for the various indicators is given in Table 2. Standard Field Sheets for recording and tracking information at each station will be used and will be provided prior to cruise departure.

Sediment Grab Sampling. Sediment sampling will be conducted using a Young-modified Van Veen grab. The sampling device is 39.5" in height, has a diameter of 34.5", and is composed of one 0.04m² sampler in a frame. Contents of the grabs will be used for analysis of benthic macroinfaunal communities, concentration of sediment contaminants, toxicity, microplastics, %

silt-clay, and organic-carbon content (TOC). An estimated four to six grab samples will be required at each station to acquire adequate sediment for both benthic infaunal analysis (2 separate replicate grabs) and chemistry/granulometric analyses (2 to 4 grabs).

The two replicate benthic macroinfaunal samples will be live-sieved onboard through a 0.5 mm screen and preserved separately in 10% buffered formalin (with Rose Bengal stain added to facilitate subsequent sorting in the laboratory). As part of the QA/QC procedures, samples that have undergone significant slumping or loss of material through the jaws of the grab (e.g., samples with a sediment layer < 5cm) will be rejected. Samples for the analysis of sediment toxicity, sediment contaminants, % silt-clay, % water, and % TOC will be sub-sampled from composited surface sediment (upper 2-3 cm) collected from additional multiple grabs independent of the macroinfaunal grabs. Approximately 3 L of sediment are required for these latter chemistry/granulometric analyses. Though it is estimated that from 2 to 4 grabs will be needed to produce this volume of surficial sediment, additional grabs may be required in coarse-grained seabed where recovery is generally poorer. Sediment samples for contaminant analysis will be collected using basic techniques to avoid accidental contamination (see below on QA/QC procedures).

Scientific personnel will be responsible for the set-up, deployment, and recovery of the Young grab; however, a ship's winch and winch operator will be required in support of this operation. Members of the scientific party also will be responsible for the processing of samples collected from the grab operations. Many of the chemical measurements that will be carried out on the sediment samples are sensitive to contamination from soot, oils, solvents, spray cleaners, lubricants, paints, hydraulic fluid, and other substances. The Chief Scientist must be notified prior to the use of these substances by ship personnel during sampling operations. Care must be taken to avoid contamination of the grab system with these substances. Prior to sampling at a station, all sampling equipment will be cleaned with acetone and rinsed with in situ water to minimize contamination.

CTD Operations. A CTD unit with rosette sampler will be supplied by NOAA ship *Nancy Foster*. This unit will be used to acquire continuous profiles of conductivity, temperature, pH, dissolved oxygen, and depth as it is lowered through the water column. The unit also will be equipped with 12 Niskin bottles to acquire discrete water samples at surface water depths: 0.5m below sea surface.

On approaching the bottom, the CTD should be held as close as possible above the seabed (ideally ~ 5 m) for one minute to allow for equilibration of the DO sensor. Vessel heave may dictate a higher altitude of several meters above seabed, in order to avoid damaging the unit. Multiple Niskin bottles should be fired at 0.5-m depth below sea-surface on the upcast.

If Niskin bottles do not fire or a continuous profile was not acquired, the CTD must then be re-launched and the cast performed again in entirety. Water samples will be processed for nutrients, total suspended solids, chlorophyll, phytoplankton community structure and microplastics.

Fish Collection. At all stations, we will use hook-and-line fishing methods (up to four fishing rods) in an effort to capture bottom fish for onboard inspection of external pathologies and for subsequent analysis of chemical contaminants in tissues of selected species. Any captured fish will be identified and inspected for gross external pathologies. Selected species also will be preserved for subsequent chemical contaminant body-burden analysis. Fish collections will be the responsibility of the science crew, although volunteers from the ship's crew are welcome to assist when available.

Inspection of fish for pathologies. Each fish caught by hook-and-line will be identified and examined for gross external pathologies or abnormalities. Numbers of each species caught will be recorded by station. Any fish observed with a gross external pathological condition (e.g. tumors, ulcers/lesions, fin rot, parasites) will have this condition recorded on the Fish Data form. Diseased fish will be further processed by being individually wrapped in aluminum foil, labeled and frozen. The QC requirements are that the fish be expeditiously processed to ensure sample integrity. Also, it is mandatory to cross-index the samples in a manner that each fish is identifiable to species and station. The Fish Data field sheets have a field to account for this, and there is an additional field notebook in which each histopathology sample should be recorded, including specimen ID #, description of the gross lesion, site number, date, length of fish, and species affected.

Treatment of Fish for Chemical-Contaminant Analysis. The goal will be to obtain one to three representative specimens from target groups of benthic associated fishes at each site. Examples of target species are members of the families Bothidae (flatfish), Serranidae (sea basses and grouper), and Lutjanidae (snappers). If the fish are small and the catch is adequate, more individual fish should be collected to ensure adequate tissue (>200g) for the analyses. Fish to be saved for chemical contaminant analysis will be rinsed with ambient seawater, individually wrapped in heavy aluminum foil, and collectively placed in double plastic Ziploc bags. Inside each bag, there is to be a label with information on date of capture, station or site number, method of capture, fish species, and number of fish in sample. Care must be taken while processing the fish to avoid contamination from outside sources such as fuel, deck grease, etc. Fish samples for chemical analysis should be frozen as soon as the composite samples are formed, and kept frozen until transferred to onshore laboratories for analysis. Once in the laboratory, samples will be prepared for analysis of contaminants in fillets (at a minimum), though other tissues (such as liver) could be saved for analysis as well.

Estimated Sampling Times. The estimated time to complete the above work at each station overall is 2.0 hours.

Upon arriving at a station, we will proceed with the CTD operations first, then the sediment grab operations. Hook-n-line fishing will be conducted concurrently with sediment grab sampling and CTD operations if feasible; otherwise this activity will begin after the last grab sample is taken and continue until sufficient numbers of fish are caught, or until the allotted station time of 2 hours has been reached. Additionally, if during nighttime OPS no fish have been collected after 30 minutes of fishing effort, then sampling operations at that station will be considered complete even if the allotted station time has not been exhausted.

A tentative progress plan defining the among-station sequence of sampling will be developed in conjunction with the ship's personnel. This plan will seek to minimize steam time between stations and to avoid major backtracking (i.e., keeping the ship moving basically from the southernmost stations to northernmost station). Any final adjustments to this plan should be determined in the field by the ship's personnel, with concurrence from the Chief Scientist, and should be based on factors such as safety and allowing flexibility to accommodate potential shifts in plans due to weather or equipment failure.

The Chief Scientist shall be cognizant of the reduced capability of the ship operating crew to support 24-hour mission activities with a high tempo of deck operations at all hours. Wage marine employees are subject to negotiated work rules contained in the applicable collective bargaining agreement. Dayworkers' hours of duty are a continuous eight-hour period, beginning no earlier than 0600 and ending no later than 1800. It is not permissible to separate such an employee's workday into several short work periods with interspersed nonwork periods. Dayworkers called out to work between the hours of 0000 and 0600 are entitled to a rest period of one hour for each such hour worked. Such rest periods begin at 0800 and will result in no dayworkers being available to support science operations until the rest period has been observed. All wage marine employees are supervised and assigned work only by the Commanding Officer or designee. The Chief Scientist and the Commanding Officer shall consult regularly to ensure that the shipboard resources available to support the embarked mission are utilized safely, efficiently and with due economy.

The ship's navigation equipment (differential GPS or GPS) will be used for station positioning. Navigational accuracy at a station should be within 500 meters (0.27 nm) of the target station coordinates. The ship should attempt to stay ideally within this radius as sampling gear is deployed, returning to it as necessary. If sampleable bottom cannot be located within this radius of the sampling site (e.g., due to presence of hard bottom), it is permissible to relocate (along a random bearing) within a 3-km (1.62 nm) radius of the original station coordinates. However, any such relocation that exceeds a 1-km (0.54 nm) radius should be flagged, so that data associated with the site can be scrutinized as part of subsequent evaluations.

D. Dive Plan

All dives are to be conducted in accordance with the requirements and regulations of the NOAA Diving Program (<http://www.ndc.noaa.gov/dr.html>) and require the approval of the ship's Commanding Officer.

Dives are not planned for this project.

E. Applicable Restrictions

Conditions which preclude normal operations: Rough seas may limit ability to deploy gear over-the-side. Cruise track may be altered to sample stations in protected areas if more exposed areas of the sanctuary are experiencing rough seas. A back-up young grab will be supplied by the science crew and as well as a 10% extra quantity of consumable supplies so that sampling may

continue even if some supplies are damaged or used faster than expected. We will also bring an extra CTD and one nisken bottle (for surface sampling) as a backup if the ship's CTD systems fail.

III. Equipment

- A. Equipment and Capabilities provided by the ship (itemized)
 - a. J-Frame – For CTD
 - b. A-Frame – for grab sampler work
 - c. Markey winch – 2 conducting wire; wire-out and rate readouts; remote reading in dry lab or survey tech lab; for use in conjunction with CTD
 - d. CTD – (sensors for depth, temperature, conductivity, DO, and pH) with 12-position rosette frame with a submersible array firing assembly
 - e. Technical support of CTD operations
 - f. DT Winch – for bottom grab ops.
 - g. Scientific Computer System (SCS) – Data-logging capability; centralized location in dry lab for optimal use by scientific party; sensors to include: DGPS, depth, wind speed/direction, vessel speed
 - h. Bottom-Grab Station – Safe access to OTS grabs, well lit for night OPS, saltwater hose
 - i. Infaunal processing area – A protected outside area to conduct sediment sieving, and sample preservation (with formalin), saltwater hose
 - j. Storage Area – Dry storage for the scientific party's supplies
 - k. Icemaker
 - l. 2 Freezers (minimum of $0 \pm 5^{\circ}$ F) – For sample storage
 - m. 1 Refrigerator for sample storage
 - n. Wet Lab and Dry Lab work space
 - o. Small Storage Cabinet for Hazardous Chemicals in wet lab
 - p. Dynamic positioning capability (with offsetting by 10-30 feet after each grab).
 - q. The ship is requested to provide technical expertise and assistance if unexpected problems arise

- B. Equipment and Capabilities provided by the scientists (itemized)
 - a. Two Young-modified Van Veen grabs (0.04 m^2)
 - b. Grab stand
 - c. 0.5mm sieves
 - d. Sediment bottles, jars, bags, labels
 - e. 10% Buffered Formalin
 - f. Goggles, gloves and chemical spill kits
 - g. Water sampling supplies – Bottles, jars, tubes, filter paper, filter rack, pipettes, acetone, labels
 - h. Fishing rods, bait, tackle, bags, and labels
 - i. Coolers for sample storage and transport
 - j. Sample containers and miscellaneous sampling supplies
 - k. Seabird CTD (seacat) as backup

- l. 1 Niskin bottle with messenger as backup
- m. Any small tools and hardware necessary for scientific objectives.

IV. Hazardous Materials

A. Policy and Compliance

The Chief Scientist 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). 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

Common Name of Material	Qty	Notes	Trained Individual	Spill control
Lugol's solution	1 x 100ml	Stored in ship chem. lkr	Jennifer Fuquay	L
Formaldehyde solution (10%)	6 x 20L	Stored in shipping container	Cynthia Cooksey	F
Acetone	4 x 4L	Stored in ship chem. lkr	Cynthia Cooksey	A

C. Chemical safety and spill response procedures

A: Acetone

- Wear appropriate protective equipment and clothing during clean-up.
- Ventilate closed spaces before entering them.
- Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible.
- Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

F: Formalin/Formaldehyde

- Ventilate area of leak or spill. Remove all sources of ignition.
- Wear appropriate personal protective equipment.
- Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible.
- Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container.
- Do not use combustible materials, such as saw dust.

L: Lugol's Solution

- Ventilate area of leak or spill.
- Wear appropriate personal protective equipment.
- Dilute with water and absorb with dry inert material.
- Collect waste in an appropriate container and place in a chemical waste container.

Inventory of Spill Kit supplies

Product Name	Amount	Chemicals it is useful against	Amount it can clean up
DAWG Spill Sack	1	Universal	7 gallons

D. Radioactive Materials

No Radioactive Isotopes are planned for this project.

V. Additional Projects

A. Supplementary (“Piggyback”) Projects

Description: Multibeam and Fishery Echounder Surveys

Ship’s multibeam sonar (Reson 7125 or EM710) will be used to map bathymetry and backscatter and will be operated by the ship's survey department following standard operating procedures. Survey area will be determined based on available time and location to benthic sampling stations. Shapefiles of past multibeam survey coverage will be conveyed to Ship survey to plan surveys for adjacent areas near outer reef bars and adjacent to existing FKNMS boundaries. When possible, multibeam and fishery echosounder will be collected during transit between sampling stations to extend past multibeam coverage. Coverage areas for "Warsaw Hole", south and west of Key West are of particular interest.

Except during transit surveys, line plans will be established to ensure at least 110% bottom coverage by the multibeam swath. Power, pulse length and gain will be set identical to NF-15-01 to provide wide dynamic range for bottom backscatter. Underway CTD will be deployed every 4 hours for sound velocity. Fishery echosounder data will be acquired using the EK60 simultaneous to multibeam sonar surveys. Ship survey department has standard operating procedures to ensure no interference between multibeam and fisher echosounder system. When operating Reson 7125 multibeam, disable 200kHz frequency on EK60, set trigger to High on trigger control in propellor software on TSG computer, and set to Reson7125 on trigger switchbox, enable trigger ingoing to correct serial port on EK60 software Operation-Ping Control. Set EK60 transmit power to 1000W and 256us pulse length for 38kHz and max(250W) and 128us pulse length for 120kHz.

B. NOAA Fleet Ancillary Projects

No NOAA Fleet Ancillary Projects are planned.

VI. Disposition of Data and Reports

Disposition of data gathered aboard NOAA ships will conform to NAO 216-101 *Ocean Data Acquisitions* and NAO 212-15 *Management of Environmental Data and Information*. To guide the implementation of these NAOs, NOAA’s Environmental Data Management Committee (EDMC) provides the *NOAA Data Documentation Procedural Directive* (data documentation) and *NOAA Data Management Planning Procedural Directive* (preparation of Data Management Plans). OMAO is developing procedures and allocating resources to manage OMAO data and Programs are encouraged to do the same for their Project data.

A. Data Classifications: *Under Development*

- a. OMAO Data
- b. Program Data

B. Responsibilities: *Under Development*

VII. Meetings, Vessel Familiarization, and Project Evaluations

- A. Pre-Project Meeting: The Chief Scientist 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 Chief Scientist in arranging this meeting.
- B. 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.
- C. Post-Project Meeting: The Commanding Officer is responsible for conducted a meeting no earlier than 24 hrs before or 7 days after the completion of a project to discuss the overall success and short comings 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 ship's officers, applicable crew, the Chief Scientist, and members of the scientific party and is normally arranged by the Operations Officer and Chief Scientist.
- D. Project Evaluation Report

Within seven days of the completion of the project, a Customer Satisfaction Survey is to be completed by the Chief Scientist. The form is available at <http://www.oma.noaa.gov/fleeteval.html> 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 ships', 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 seven days prior to the project.

Berthing requirements, including number and gender of the scientific party, will be provided to the ship by the Chief Scientist. The Chief Scientist and Commanding Officer will work together

on a detailed berthing plan to accommodate the gender mix of the scientific party taking into consideration the current make-up of the ship's complement. The Chief Scientist is responsible for ensuring the scientific berthing spaces are left in the condition in which they were received; for stripping bedding and linen return; and for the return of any room keys which were issued. The Chief Scientist is also responsible for the cleanliness of the laboratory spaces and the storage areas utilized by the scientific party, both during the project and at its conclusion prior to departing the ship.

All NOAA scientists will have proper travel orders when assigned to any NOAA ship. The Chief Scientist will ensure that all non NOAA or non Federal scientists aboard also have proper orders. It is the responsibility of the Chief Scientist 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 17, 2000 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 in advance by each participating scientist. The NHSQ can be obtained from the Chief Scientist or the NOAA website <http://www.corporateservices.noaa.gov/noaforms/eforms/nf57-10-01.pdf>.

All NHSQs submitted after March 1, 2014 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 4 weeks prior to the start of the project to allow time for the for 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 1 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
Email MOA.Health.Services@noaa.gov

Prior to departure, the Chief Scientist must provide an electronic listing of emergency contacts to the Executive Officer for all members of the scientific party, with the following information: contact name, address, relationship to member, and telephone number.

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. At the discretion of the ship CO, safety shoes (i.e. steel or composite toe protection) may be required to participate in any work dealing with suspended loads, including CTD deployment and recovery. The ship does not provide safety-toed shoes/boots. The ship's Operations Officer should be consulted by the Chief Scientist to ensure members of the scientific party report aboard with the proper attire.

D. Communications

A progress report on operations prepared by the Chief Scientist may be relayed to the program office. Sometimes it is necessary for the Chief Scientist to communicate with another vessel, aircraft, or shore facility. Through various means of communications, the ship can usually accommodate the Chief Scientist. Special radio voice communications requirements should be listed in the project instructions. The ship's primary means of communication with the Marine Operations Center is via email and the Very Small Aperture Terminal (VSAT) link. Standard VSAT bandwidth at 128kbs is shared by all vessels staff and the science team at no charge. Increased bandwidth in 30 day increments is available on the VSAT systems at increased cost to the scientific party. If increased bandwidth is being considered, program accounting is required and it must be arranged through the ship's Commanding Officer at least 30 days in advance.

E. IT Security

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:

- (1) Installation of the latest virus definition (.DAT) file on all systems and performance of a virus scan on each system.
- (2) Installation of the latest critical operating system security patches.
- (3) No external public Internet Service Provider (ISP) connections.

Completion of the above 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 3 days of embarking.

F. Foreign National Guests Access to OMAO Facilities and Platforms

Foreign National access to the NOAA ship or Federal Facilities is not required for this project.

VIII. Appendices

1. Figures, maps, tables, images, etc.

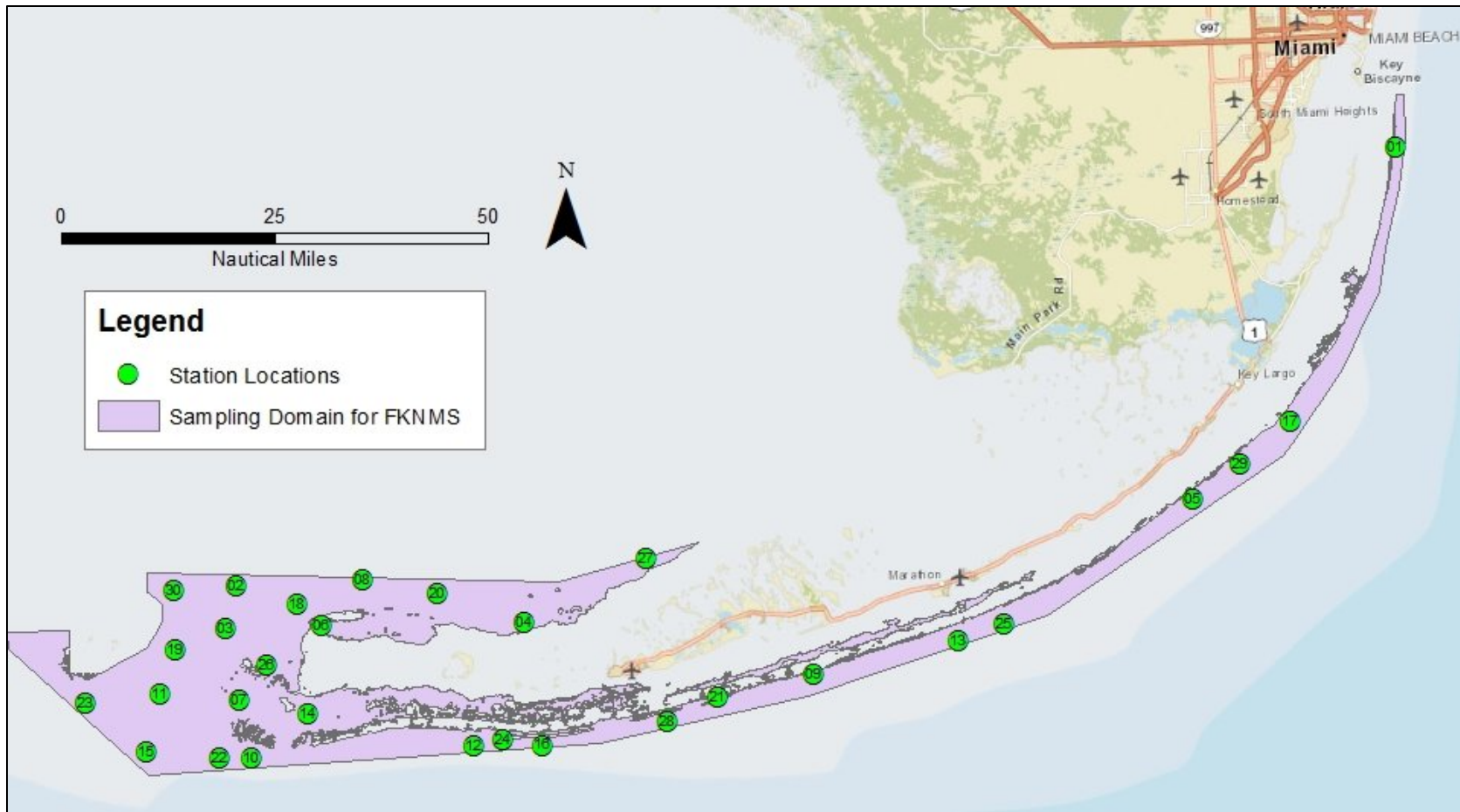


Figure 1. FKNMS station map.

Table 1. Station Coordinates.

Station Code	Longitude (DD)	Latitude (DD)	Longitude (Degree Decimal Minutes)	Latitude (Degree Decimal Minutes)
FK15_001	-80.0871780	25.5440083	-80° 5.2307'	25° 32.6405'
FK15_002	-82.6073380	24.7355484	-82° 36.4403'	24° 44.1329'
FK15_003	-82.6298923	24.6522527	-82° 37.7935'	24° 39.13516'
FK15_004	-81.9894208	24.6557971	-81° 59.3653'	24° 39.34783'
FK15_005	-80.5467036	24.8684879	-80° 32.8022'	24° 52.10927'
FK15_006	-82.4239832	24.6550167	-82° 25.439'	24° 39.301'
FK15_007	-82.6040373	24.5100348	-82° 36.2422'	24° 30.60209'
FK15_008	-82.3340599	24.7430497	-82° 20.0436'	24° 44.58298'
FK15_009	-81.3701474	24.5422334	-81° 22.2088'	24° 32.534'
FK15_010	-82.5767897	24.3970221	-82° 34.6074'	24° 23.82133'
FK15_011	-82.7712555	24.5250547	-82° 46.2753'	24° 31.50328'
FK15_012	-82.1017448	24.4155094	-82° 6.1047'	24° 24.93056'
FK15_013	-81.0585225	24.6023210	-81° 3.5113'	24° 36.13926'
FK15_014	-82.4557196	24.4834079	-82° 27.3432'	24° 29.00448'
FK15_015	-82.8042220	24.4121917	-82° 48.2533'	24° 24.7315'
FK15_016	-81.9555084	24.4142417	-81° 57.3305'	24° 24.8545'
FK15_017	-80.3307689	25.0150473	-80° 19.8461'	25° 0.90284'
FK15_018	-82.4757980	24.6963408	-82° 28.5479'	24° 41.78045'
FK15_019	-82.7378919	24.6091779	-82° 44.2735'	24° 36.55067'
FK15_020	-82.1749254	24.7142550	-82° 10.4955'	24° 42.8553'
FK15_021	-81.5758545	24.5017882	-81° 31.55127'	24° 30.10729'
FK15_022	-82.6467635	24.3964472	-82° 38.8058'	24° 23.78683'
FK15_023	-82.9322665	24.5086908	-82° 55.936'	24° 30.52145'
FK15_024	-82.0372004	24.4272699	-82° 2.232'	24° 25.6362'
FK15_025	-80.9580010	24.6331886	-80° 57.4801'	24° 37.99132'
FK15_026	-82.5434061	24.5791742	-82° 32.6044'	24° 34.75045'
FK15_027	-81.7254628	24.7750154	-81° 43.5278'	24° 46.50092'
FK15_028	-81.6849909	24.4556027	-81° 41.0995'	24° 27.33616'
FK15_029	-80.4406869	24.9324503	-80° 26.4412'	24° 55.94702'
FK15_030	-82.7394327	24.7255004	-82° 44.366'	24° 43.53002'

Table 2. Summary of field samples to be collected at each 2011 Northwestern Gulf of Mexico station.

Parameters	# of Replicates	Container	Sample Size	Preservation
Infauna	2	1000 ml Polypropylene jar	All material retained on 0.5mm sieve	10% Buffered Formalin in the field
Metal Contaminants	1 (composited sediment)	250 ml (8 oz) polypropylene jar	2/3 full	frozen
Organic Contaminants	1 (composited sediment)	125 ml (4 oz) glass jar	2/3 full	frozen
TOC	1 (composited sediment)	125 ml (4 oz) Polypropylene jar	2/3 full	frozen
% Silt/Clay & % Moisture	1 (composited sediment)	500 ml (16 oz) HDPE jar	2/3 full	frozen
Microtox/Reporter Gene Assay	1 (composited sediment)	125 ml (4 oz) Glass jar	2/3 Full	Refrigerate
Microplastics/Sea Urchin Backup	1 (composited sediment)	500 ml (16 oz) glass jar	2/3 Full	frozen
Sea Urchin Porewater Assay	1 (extracted from composited sample)	60 ml vial	2/3 Full	frozen
Water Column (Temp., D.O., pH, Sal.)	1	N/A	Profile	N/A
Total Suspended Solids	1 (water column - surface)	47 mm preweighed filter pads	TSS retained on filter pad	frozen
Nutrients	1 (water column - surface)	60 ml HDPE containers	2/3 full	frozen
Chlorophyll a	1 (water column - surface)	25 mm filter pads	cells retained on pad	frozen
Turbidity	1 (water column - surface)	60 ml vial	Full	N/A
Plankton Community/Microplastics	1 (water column - surface)	125 mL sample bottle	2/3 full	Lugol's solution
Fish Tissue	--	ziplock bag	2-3 specimens from up to 3 species	frozen

Appendix A

Permit



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

Florida Keys National Marine Sanctuary
33 East Quay Road
Key West, FL 33040

May 19, 2015

Ms. Cynthia Cooksey
NOAA National Centers for Coastal Ocean Science
219 Fort Johnson Road
Charleston, SC 29412

Dear Ms. Cooksey:

The National Oceanic and Atmospheric Administration, Office of National Marine Sanctuaries (ONMS) has approved the issuance of permit number FKNMS-2015-047 to conduct activities within Florida Keys National Marine Sanctuary (sanctuary) for research purposes. Activities are to be conducted in accordance with the permit application and all supporting materials submitted to the sanctuary, and the terms and conditions of permit number FKNMS-2015-047 (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. Additional copies must be signed and returned, by either mail or email, to the following individuals within 30 days of issuance and before commencing any activity authorized by this permit:

LTJG Rosemary Abbitt
NOAA Corps Officer
Florida Keys National Marine Sanctuary
33 East Quay Road
Key West, FL 33040
Rosemary.Abbitt@noaa.gov

National Permit Coordinator
NOAA Office of National Marine Sanctuaries
1305 East-West Highway (N/ORM6)
SSMC4, 11th Floor
Silver Spring, MD 20910
nmspermits@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 Joanne Delaney at Joanne.Delaney@noaa.gov. Thank you for your continued cooperation with the ONMS.

Sincerely,

Sean Morton
Superintendent

Enclosure





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

Florida Keys National Marine Sanctuary
33 East Quay Road
Key West, FL 33040

FLORIDA KEYS NATIONAL MARINE SANCTUARY RESEARCH PERMIT

Permittee:

Ms. Cynthia Cooksey
NOAA National Centers for Coastal Ocean Science
219 Fort Johnson Road
Charleston, SC 29412

Permit Number: FKNMS-2015-047

Effective Date: June 1, 2015

Expiration Date: June 30, 2015

Project Title: Place-Based Assessment of Ecological Condition and Potential Stressor Impacts at Florida Keys National Marine Sanctuary

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 listed above to conduct research activities within Florida Keys National Marine Sanctuary (FKNMS or sanctuary). All activities are to be conducted in accordance with this permit and the permit application received March 25, 2015. The permit application is incorporated into this permit and made a part hereof; provided, however, that if there are any conflicts between the permit application and the terms and conditions of this permit, the terms and conditions of this permit shall be controlling.

Permitted Activity Description:

The following activities are authorized by this permit:

1. Collection of sediment samples using Van Veen grabs or similar devices.

No further violation of sanctuary regulations is allowed.

Permitted Activity Location:

The permitted activity is allowed **within** the Key Largo and Looe Key National Marine Sanctuary Existing Management Areas, and other non-zoned sites in the Sanctuary, in the following approximate locations:



Station Code	Latitude	Longitude
FK15_001	25.5440083	-80.0871780
FK15_002	24.7355484	-82.6073380
FK15_003	24.6522527	-82.6298923
FK15_004	24.6557971	-81.9894208
FK15_005	24.8684879	-80.5467036
FK15_006	24.6550167	-82.4239832
FK15_007	24.5100348	-82.6040373
FK15_008	24.7430497	-82.3340599
FK15_009	24.5422334	-81.3701474
FK15_010	24.3970221	-82.5767897
FK15_011	24.5250547	-82.7712555
FK15_012	24.4155094	-82.1017448
FK15_013	24.6023210	-81.0585225
FK15_014	24.4834079	-82.4557196
FK15_015	24.4121917	-82.8042220
FK15_016	24.4142417	-81.9555084
FK15_017	25.0150473	-80.3307689
FK15_018	24.6963408	-82.4757980
FK15_019	24.6091779	-82.7378919
FK15_020	24.7142550	-82.1749254
FK15_021	24.5426017	-81.5242040
FK15_022	24.3964472	-82.6467635
FK15_023	24.5086908	-82.9322665
FK15_024	24.4272699	-82.0372004
FK15_025	24.6331886	-80.9580010
FK15_026	24.5791742	-82.5434061
FK15_027	24.7750154	-81.7254628
FK15_028	24.4556027	-81.6849909
FK15_029	24.9324503	-80.4406869
FK15_030	24.7255004	-82.7394327

Special Terms and Conditions:

1. No activities are allowed in any Sanctuary Preservation Area, Special Use (Research Only) Area, or Ecological Reserve.
2. Sediment samples may not be collected from coral or hardbottom habitats.
3. The permittee must submit a final report of activities thirty (30) days after the permit expires or (30) days prior if a renewal is desired. The report shall consist of a 1-2 page summary of activities conducted under this permit that follows the attached permit report guidelines. The report shall be submitted to Scott Donahue (Scott.Donahue@noaa.gov), FKNMS Science Coordinator, and Joanne Delaney (Joanne.Delaney@noaa.gov), FKNMS Permit Coordinator.
4. Any scientific publications and/or reports resulting from activities conducted under the authority of this permit must include the notation that the activity was conducted under permit number FKNMS-2015-047. Copies of / links to any publications that



result from work conducted under this permit shall be submitted to Scott Donahue (Scott.Donahue@noaa.gov), FKNMS Science Coordinator, and Joanne Delaney (Joanne.Delaney@noaa.gov), FKNMS Permit Coordinator. Additionally, the permittee and her respective institution(s) are required to acknowledge during any media coverage (press releases, video/photo, social media, or other means) that research activities occurred within the FKNMS and under permit. Boilerplate language on the sanctuary is available by request; contact Rachel Pawlitz at Rachel.Pawlitz@noaa.gov.

General Terms and Conditions:

1. Within 30 (thirty) days of the date of issuance, the permittee must sign and date this permit for it to be considered valid. Once signed, the permittee must send copies, via mail or email, to the following individuals:

LTJG Rosemary Abbitt
NOAA Corps Officer
Florida Keys National Marine Sanctuary
33 East Quay Road
Key West, FL 33040
Rosemary.Abbitt@noaa.gov

National Permit Coordinator
NOAA Office of National Marine Sanctuaries
1305 East-West Highway (N/ORM6)
SSMC4, 11th Floor
Silver Spring, MD 20910
nmspermits@noaa.gov

2. It is a violation of this permit to conduct any activity authorized by this permit prior to the ONMS having received a copy signed by the permittee.
3. This permit may only be amended by the ONMS. The permittee may not change or amend any part of this permit at any time. The terms of the permit must be accepted in full, without revision; otherwise, the permittee must return the permit to the sanctuary office unsigned with a written explanation for its rejection. Amendments to this permit must be requested in the same manner the original request was made.
4. All persons participating in the permitted activity must be under the supervision of the permittee, and the permittee is responsible for any violation of this permit, the NMSA, and sanctuary regulations for activities conducted under, or in junction with, this permit. The permittee must assure that all persons performing activities under this permit are fully aware of the conditions herein.
5. This permit is non-transferable and must be carried by the permittee at all times while engaging in any activity authorized by this permit.
6. This permit may be suspended, revoked, or modified for violation of the terms and conditions of this permit, the regulations at 15 CFR Part 922, the NMSA, or for other good cause. Such action will be communicated in writing to the applicant or permittee, and will set forth the reason(s) for the action taken.
7. This permit may be suspended, revoked or modified if requirements from previous ONMS permits or authorizations issued to the permittee are not fulfilled by their due date.
8. Permit applications for any future activities in the sanctuary or any other sanctuary in the system by the permittee might not be considered until all requirements from this permit are fulfilled.



9. This permit does not authorize the conduct of any activity prohibited by 15 CFR § 922, other than those specifically described in the “Permitted Activity Description” section of this permit. If the permittee or any person acting under the permittee’s supervision conducts, or causes to be conducted, any activity in the sanctuary not in accordance with the terms and conditions set forth in this permit, or who otherwise violates such terms and conditions, the permittee may be subject to civil penalties, forfeiture, costs, and all other remedies under the NMSA and its implementing regulations at 15 CFR Part 922.
10. Any publications and/or reports resulting from activities conducted under the authority of this permit must include the notation that the activity was conducted under National Marine Sanctuary Permit FKNMS-2015-047 and be sent to the ONMS officials listed in general condition #1.
11. This permit does not relieve the permittee of responsibility to comply with all other federal, state and local laws and regulations, and this permit is not valid until all other necessary permits, authorizations, and approvals are obtained. Particularly, this permit does not allow disturbance of marine mammals or seabirds protected under provisions of the Endangered Species Act, Marine Mammal Protection Act, or Migratory Bird Treaty Act. Authorization for incidental or direct harassment of species protected by these acts must be secured from the U.S. Fish and Wildlife Service and/or NOAA Fisheries, depending upon the species affected.
12. The permittee shall indemnify and hold harmless the Office of National Marine Sanctuaries, NOAA, the Department of Commerce and the United States for and against any claims arising from the conduct of any permitted activities.
13. Any question of interpretation of any term or condition of this permit will be resolved by NOAA.

Your signature below, as permittee, indicates that you accept and agree to comply with all terms and conditions of this permit. This permit becomes valid when you, the permittee, countersign and date below. Please note that the expiration date on this permit is already set and will not be extended by a delay in your signing.

Ms. Cynthia Cooksey
NOAA National Centers for Coastal Ocean Science

Date



Sean Morton
Superintendent
Florida Keys National Marine Sanctuary

May 19, 2015
Date

1 document attached.



FLORIDA KEYS NATIONAL MARINE SANCTUARY
RESEARCH & EDUCATION PERMIT REPORTS

Permit reports are intended to be brief, but comprehensive, summaries of activities conducted under specific permits, typically in no more than two pages. Please submit the required information electronically (e.g., Word, rich text format, PDF) to Scott Donahue (Scott.Donahue@noaa.gov) and Joanne Delaney (Joanne.Delaney@noaa.gov).

REQUIRED INFORMATION FOR INTERIM AND FINAL REPORTS

- 1) Date:
- 2) Permittee name and contact information (affiliation, address, phone, fax, e-mail):
- 3) Permit number:
- 4) Type of report: **Interim** or **Final**
- 5) Permission: **YES** or **NO** – Please indicate if FKNMS can share the information contained in your project summary with the public, with credit to you and/or your academic institution. Credit will follow information supplied in #2, above, unless otherwise specified.
- 6) Project Summary:
 - a. Goal(s) of project.
 - b. Significance of project.
 - c. Connection to Sanctuary management issues.
 - d. Hypotheses (if applicable).
 - e. Description of all permitted activities conducted, including field or laboratory methods.
 - f. Results/findings to date. If results are not available at the time of this report, indicate when they are expected and in what format/publication.
 - g. Table, graph, photos as appropriate.
 - h. List of / links to publications resulting from permitted activities.
- 7) List of key words.
- 8) Deviations: If applicable, please briefly describe any deviations from permitted activities.
- 9) Collections: If your permitted activities included collection of organisms, please provide the following as an appendix to your report (lists, tables or charts are acceptable):
 - a. Dates of collections.
 - b. Locations of collections (GPS coordinates, WGS84 datum).
 - c. Species collected.
 - d. Quantity collected of each species:
 - (i) Coral and octocoral - if fragmenting, cutting, or otherwise sampling from a “parent” colony, provide total number of individual samples per species collected, and how many samples taken from each parent. A separate parent colony report may also be required.
 - (ii) Non-coral species - if collecting marine life flora (e.g., seagrass or algae) volumetric estimate is acceptable; provide exact numbers for fauna (e.g., fish, non-coral invertebrates).
 - e. Sizes of organisms and/or samples collected (binned by size class is acceptable).
 - f. Fate of all specimens collected.
 - g. Mitigation completed, if any.