



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**

Office of Coast Survey  
1315 East West Highway, SSMC3, Silver Spring, MD 20910

December 30, 2019

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**TO:** Janice E. Castro  
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**REFERENCE:** Federal Consistency Determination for the proposed hydrographic survey, drone operation, and coral reef ecosystem survey of Mariana Islands, April – September 2020

Dear Ms. Castro:

This notice serves as the federal consistency determination for the referenced action, as required by Section 307 of the Coastal Zone Management Act of 1972, as amended (16 U.S.C. 1451 et seq.).

This notice pertains to three separate projects proposed by NOAA for 2020. Two of these projects (the hydrographic survey and the drone operation) are proposed by the NOAA Office of Coast Survey (point of contact: Jay Nunenkamp, 240-533-0118, [jay.nunenkamp@noaa.gov](mailto:jay.nunenkamp@noaa.gov)). The third project (the coral reef ecosystem survey) is proposed by the NOAA Office of National Marine Fisheries, Pacific Islands Fishery Science Center (PIFSC) (point of contact: Hoku Johnson, [hoku.johnson@noaa.gov](mailto:hoku.johnson@noaa.gov) or by telephone at 808-725-5323). We have sent our determinations regarding these three projects under one cover to reduce your administrative burden.

## ***1.0 Description of the Proposed Actions***

### **1.1 Hydrographic Survey**

The National Oceanic and Atmospheric Administration's Office of Coast Survey plans to conduct a hydrographic survey of a 3,600 square nautical mile area off the coast of the Commonwealth of the Northern Mariana Islands (CNMI) near the islands of Guam, Rota, Saipan, Aguijan, Tinian, Pagan, Maug, Asuncion, and Agrihan. The project will begin on or about April 11, 2020, ending around September 30, 2020. Note that, as with all activities at sea, the precise dates of the project could be affected by weather, equipment difficulties, or other unforeseen circumstances. The NOAA Ship *Rainier* will leave port from Pearl Harbor, Hawai'i and proceed to the survey location shown in Appendix A. In the course of the project, the *Rainier* will survey the area shown in Appendix A with multibeam echo sounders at a frequency of 40 kHz or higher, and would collect bottom samples in order to verify sediment type. *Rainier* may also anchor, as necessary.

This notice serves as the federal consistency determination for the referenced action, as required by Section 307 of the Coastal Zone Management Act of 1972, as amended (16 U.S.C. 1451 et seq.).

Note that it is possible that the actual limits of the survey area could change slightly from those shown in Appendix A, but such changes would be minor and would not affect the nature of the work or the findings of this federal consistency determination.

In the course of the project, Coast Survey will follow a series of Best Management Practices (BMPs) to reduce or eliminate potential impacts to the environment. These BMPs are listed in Appendix B.

### **1.2 Unmanned Aircraft System Use for Shoreline Photography**

Parallel to the hydrographic survey work outlined above, Coast Survey will also operate a UAS (i.e., drone) to photograph shorelines. This work could take place over any shorelines in Guam or CNMI, although it is likely that no more than 200 nautical miles of shorelines will be photographed due to time limitations. Coast Survey will operate a DJI Phantom 4 Pro V2 at altitudes of up to 400 ft for an estimated flight time of 15 minutes per flight. This UAS is powered by Lithium Ion batteries. Except for the camera, no instruments would be used from the UAS. Staff would include one Mission Commander and one Pilot-in-Command (these can be the same person), plus at least one observer(s)/processor(s). The UAS would be launched and recovered either from a vessel or land. Coast Survey would not operate the UAS in adverse weather conditions or at night.

### **1.3 Reef Assessment and Monitoring**

In addition to hydrographic survey conducted by Coast Survey, PIFSC will survey coral reefs in nearshore areas throughout the region. Small boats will be deployed from NOAA Ship *Rainier* to reach dive survey areas around Guam, Rota, Saipan, Aguijan, Tinian, Pagan, Maug, Asuncion, and Agrihan.

Teams of SCUBA divers will conduct fine-scale, rapid ecological assessment surveys of reef fishes and corals. Scientists will collect data to monitor nearshore physical and ecological factors associated with ocean acidification and general water quality, including data on water temperature, salinity, and other physical and biological characteristics of the coral reef environment using an assortment of oceanographic sampling and monitoring instruments, including systems deployed from the ship, and underwater moored instruments. The PIFSC Reef Assessment and Monitoring Program activities have taken place every three years in the Marianas starting in 2005.

## ***2.0 Potential Effects to the CNMI Coastal Zone***

Coast Survey does not believe that its proposed projects (the hydrographic survey and the UAS photography) would have any measurable effect on the CNMI coastal zone. Similarly, PIFSC does not believe that the proposed coral surveys would have any measurable effect on the CNMI coastal zone.

None of the projects include the construction or other development of any part of the coastal zone. The Hydrographic survey may cause slightly increased vessel traffic caused by operating a small number of vessels, anchoring, and the collection of sea floor sediment samples, but these effects would be negligible and temporary. The coral surveys may also cause slightly increased vessel traffic caused by operation of small boats for diving and the installation and maintenance of scientific monitoring equipment, but these effects would be negligible and temporary.

## ***3.0 Consistency Determination for the Enforceable Policies of the CNMI Coastal Program***

In preparing this consistency determination, Coast Survey and PIFSC reviewed the CNMI coastal policies as presented in the CNMI Procedures Guide for Achieving Federal Consistency with the CNMI Coastal Management Program.<sup>1</sup>

### **3.1 Enforceable CNMI Policies that are not Applicable to the Proposed Survey**

Due to the scope and nature of our proposed project, Coast Survey and PIFSC have determined that the following CNMI coastal policies are not applicable to the proposed activities, and will therefore not be further considered here:

#### **Northern Mariana Islands Administrative Code (NMIAC) Chapter 15-10:**

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<sup>1</sup> <https://dcrm.gov.mp/wp-content/uploads/crm/PROCEDURES-GUIDE-federal-consistency-Sept-2018.pdf>  
[accessed July 17, 2019]

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340: Specific Criteria; Areas of Particular Concern; Ports and Industrial Areas

345: Specific Criteria; Areas of Particular Concern; Coastal Hazards

350: Height Density, Setback, Coverage, and Parking Guidelines

501: Determination of Major Siting

505: Specific Criteria for Major Sitings

**Policies Expressed in Public Law (PL) No. 3-47**

- (1) Encourage and use master planning, floodplain management, and the development of zoning and building code legislation;
- (2) Promote, through a program of public education and public participation, concepts of resource management, conservation and wise development of coastal resources;
- (3) Promote more efficient resources management through:
  - (A) Coordination and development of resources management laws and regulations into a readily identifiable program,
  - (B) Revision of existing unclear laws and regulations,
  - (C) Improvement of Coordination among Commonwealth of the Northern Mariana Islands ' agencies,
  - (D) Improvement of coordination between Commonwealth and federal agencies,
  - (E) Establishment of educational and training programs for Commonwealth government personnel and refinement of supporting technical data;
- (5) Give priority for water-dependent development and consider the need for water-related and water-oriented locations in its siting decisions;
- (6) Provide for adequate consideration of the national interest, including that involved in planning for, and in the siting of, facilities (including energy facilities in, or which significantly affect, the Commonwealth's coastal zone) which are necessary to meet requirements which are other than local in nature;
- (7) Not permit to the extent practicable, development of identified hazardous lands including floodplains, erosion-prone areas, storm wave inundation areas, air installation crash and sound zones and major fault lines, unless it can be demonstrated that such development does not pose unreasonable risks to the health, safety or welfare of the people of the Commonwealth, and complies with applicable laws;
- (8) Mitigate to the extent practicable adverse environmental impacts, including those on aquifers, beaches, estuaries and other coastal resources while developing and efficient and safe transportation system;
- (9) Require any development to strictly comply with erosion, sedimentation, and related land and water use districting guidelines, as well as other related land and water use policies for such areas;
  - (14) Not permit, to the extent practicable, development with the potential for causing significant adverse impact in fragile areas such as designated and potential historic and archaeological sites, critical wildlife habitats, beaches, designated and potential pristine marine and terrestrial communities, limestone and volcanic forests, designated and potential mangrove stands and other wetlands;
- (18) Encourage preservation and enhancement of and respect for, the Commonwealth's scenic resources through the development of, increased enforcement of, and compliance with, sign, litter, zoning, building codes, and related land-use laws;

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- (19) Discourage, to the maximum extent practicable, visually objectionable uses so as not to significantly degrade scenic views;
- (20) Encourage the development of recreation facilities which are compatible with the surrounding environment and land-uses;
- (21) Encourage the preservation of traditional rights of public access to and along the shorelines consistent with the rights of private property owners;
- (22) Pursue agreements for the acquisition and/or of any lands necessary to guarantee traditional public to and along the shorelines; and
- (23) Encourage agricultural development and the preservation and maintenance of critical agricultural lands for agricultural uses.

**Air and water quality standards and regulations of the CNMI:**

DEQ Underground Injection Control Regulations (NMIAC, title 65, chapter 90)

DEQ Drinking Water Regulations (NMIAC, title 65, chapter 20)

DEQ Well Drilling and Well Operations Regulations (NMIAC, §65-140-005, §65140-010)

The policies listed above are not relevant because the proposed hydrographic survey and coral reef ecosystem surveys will not involve the construction, demolition, expansion, renovation, or other modification to any structure, improvement, or means of transportation. The survey will be temporary and will not affect the visual quality of the coastal zone. No effects to agriculture, recreation areas, public access, or public utilities such as drinking water are expected.

### **3.2 Review of Relevant CNMI Enforceable Policies**

Our determinations of consistency for the remaining CNMI coastal policies are presented below.

#### **3.2.1 NMIAC 15-10-315: Specific Criteria; Areas of Particular Concern; Lagoon and Reefs**

**Determination:** Consistent. The proposed activities would take place in waters of at least six feet in depth, which may include lagoons. However, the operation of one or more vessels, the use of echo sounders, the use of CTDs, anchoring, the collection of bottom samples, SCUBA diving, and installation and maintenance of already existing scientific monitoring equipment would have no measurable impacts on lagoons or reefs.

#### **3.2.2 NMIAC 15-10-320: Specific Criteria; Areas of Particular Concern; Managaha and Anjota Islands**

**Determination:** Consistent. The proposed activities would take place in the vicinity of Managaha and Anjota Islands, however no adverse impacts to historical, archeological, or architectural sites are anticipated. Coast Survey and PIFSC is consulting with the CNMI State Historic Preservation Officer on the nature of our work and on our determination regarding impacts to these resources. If any additional

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mitigation measures are required to ensure that historic and cultural resources are not damaged in the course of our project, Coast Survey and PIFSC would adopt these measures.

### **3.2.3 NMIAC 15-10-325: Specific Criteria; Areas of Particular Concern; Coral Reefs**

**Determination:** Consistent. The proposed survey would take place in waters of at least six feet in depth, which may include areas with corals. However, the operation of one or more vessels, the use of echo sounders, the use of CTDs, and diving activities would have no measurable impacts on corals. Coast Survey would not anchor, collect bottom samples, or otherwise affect the sea floor in areas with coral. Additionally, the coral reef surveys planned by PIFSC are intended to provide managers with updated scientific information on coral reef ecosystems in their jurisdiction. PIFSC uses trained SCUBA divers that abide by a number of best management practices (attached) to minimize benthic disturbance and damage to coral reefs.

### **3.2.4 NMIAC 15-10-330: Specific Criteria; Areas of Particular Concern; Wetlands and Mangroves**

**Determination:** Consistent. The proposed survey would take place in waters of at least six feet in depth, which may include lagoons. However, the operation of one or more vessels, the use of echo sounders, the use of CTDs, and diving activities would have no measurable impacts on lagoons or reefs. Any impact caused by the collection of bottom samples or the anchoring would be negligible and temporary.

### **3.2.5 NMIAC 15-10-335: Specific Criteria; Areas of Particular Concern; Shorelines**

**Determination:** Consistent. The proposed survey would not take place on shorelines or any other terrestrial areas. No impacts to shorelines would be expected from the project activities.

### **3.2.6 PL 3-47 (4) Plan for and manage any use or activity with the potential for causing a direct and significant impact on coastal resources. Significant adverse impacts shall be mitigated to the extent practicable**

**Determination:** Consistent. No significant impacts to the environment are expected from the proposed survey. The operations of the Office of Coast Survey were analyzed in a Programmatic Environmental Assessment dated May 2013 and [available here](#).<sup>2</sup> The National Ocean Service subsequently prepared a [Finding of No Significant Impact](#)<sup>3</sup> for these operations. In addition, PIFSC's dive survey activities were analyzed in a Programmatic Environmental Assessment dated May 2010, PIFSC subsequently prepared a Finding of No Significant Impact for these operations.

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<sup>2</sup> <https://nauticalcharts.noaa.gov/about/docs/regulations-and-policies/2013-18-nepa-ocs-final-pea.pdf> [July 17, 2019]

<sup>3</sup> <https://nauticalcharts.noaa.gov/about/docs/regulations-and-policies/2013-18-nepa-ocs-signed-fonsi.pdf> [July 17, 2019]

**3.2.7 PL 3-47 (10) Maintain or improve coastal water quality through control of erosion, sedimentation, runoff, siltation, sewage and other discharges**

**Determination:** Consistent. The proposed survey would not be a source of erosion, sedimentation, runoff, or siltation. The referenced vessels would be operated in accordance with the provisions of the Clean Water Act. The proposed action would involve the operation of the vessels operating echo sounders to map the sea floor. The proposed action would not include the disposal of any hazardous substances or thermal discharges into the water or other media.

**3.2.8 PL 3-47 (11) Recognize and respect locations and properties of historical significance throughout the Commonwealth, and ensure that development which would disrupt, alter, or destroy these, is subject to Commonwealth and any applicable federal laws and regulations**

**Determination:** Consistent. No adverse impacts to historical, archeological, or architectural sites are anticipated from the project activities. Coast Survey and PIFSC are consulting with the CNMI State Historic Preservation Officer for their concurrence on this determination, based on the nature of our work.

**3.2.9 PL 3-47 (12) Recognize areas of cultural significance, the development of which would disrupt the cultural practices associated with such areas, which shall be subject to a consultation process with concerned ethnic groups and any applicable laws and regulations**

**Determination:** Consistent. No adverse impacts to historical, archeological, or architectural sites are anticipated from the project activities. Coast Survey and PIFSC are consulting with the CNMI State Historic Preservation Officer for their concurrence on this determination, based on the nature of our work.

**3.2.10 PL 3-47 (13) Require compliance with all local air and water quality laws and regulations and any applicable federal air and water quality standards;**

**Determination:** Consistent. Coast Survey and PIFSC vessels would be operated in accordance with the provisions of the Clean Air Act. The proposed action would involve the operation of the vessels operating echo sounders to map the sea floor. The proposed action would not include the disposal of any hazardous substances into the air or other media.

**3.2.11 PL 3-47 (15) Manage ecologically significant resource areas for their contribution to marine productivity and value as wildlife habitats, and preserve the functions and integrity of reefs, marine meadows, salt ponds, mangroves and other significant natural areas;**

**Determination:** Consistent. The proposed survey would take place in accordance with the requirements of the Endangered Species Act and the Essential Fish Habitat Provisions of the Magnuson Stevens

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Fishery Conservation and Management Act. Coast Survey and PIFSC would implement any required mitigation measures that are developed in the course of complying with these laws.

**3.2.12 PL 3-47 (16) Manage the development of the local subsistence, sport and commercial fisheries, consistent with other policies;**

**Determination:** Consistent. The proposed survey would have no impact on fisheries. No part of the project would involve the collection of fish for any purpose. No part of the proposed survey would be perceptible to fish or otherwise affect their behavior or the quality of their habitat. All aspects of the proposed project would be undertaken in accordance with the requirements of the Essential Fish Habitat Provisions of the Magnuson Stevens Fishery Conservation and Management Act.

**3.2.13 PL 3-47 (17) Protect all coastal resources, particularly sand, corals and fish from taking beyond sustainable levels and in the case of marine mammals and any species on the Commonwealth and Federal Endangered Species List, from any taking whatsoever;**

**Determination:** Consistent. The proposed project would not take sand or any other minerals. No impacts to corals are anticipated, Coast Survey would not interact with the sea floor in the vicinity of corals, and PIFSC would abide by a set of best management practices to minimize benthic disturbance, including avoiding touching corals while conducting surveys, installing scientific monitoring equipment away from coral reefs, anchoring small boats on sandy substrate away from corals and lowering anchors to the seafloor rather than throwing them. The proposed survey would have no impact on fisheries. No part of the project would involve the collection of fish for any purpose. No part of the proposed survey would be perceptible to fish or otherwise affect their behavior or the quality of their habitat. All aspects of the proposed project would be undertaken in accordance with the requirements of the Essential Fish Habitat Provisions of the Magnuson Stevens Fishery Conservation and Management Act. Coast Survey and PIFSC would undertake the project in accordance with the Endangered Species Act. Standard Best Management Practices would minimize impacts to threatened and endangered species and to marine mammals. Sediment collecting as bottom samples would be returned to the sea floor as soon as the samples are characterized and photographed.

**3.2.14 DEQ Wastewater Treatment and Disposal Rules and Regulations (NMIAC, §65-120010, and §65-120 Part 1700)**

**Determination:** Consistent. Coast Survey and PIFSC vessels would be operated in accordance with the provisions of the Clean Water Act. The proposed action would involve the operation of the vessels operating echo sounders to map the sea floor. The proposed action would not include the disposal of any hazardous substances into the water or other media.



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### **3.2.15 DEQ Water Quality Standards (NMIAC, §65-130, Part 200, Part 400, Part 500)**

**Determination:** Consistent. Coast Survey and PIFSC vessels would be operated in accordance with the provisions of the Clean Water Act. The proposed action would involve the operation of the vessels operating echo sounders to map the sea floor. The proposed action would not include the disposal of any hazardous substances into the water or other media.

## ***4.0 Conclusion***

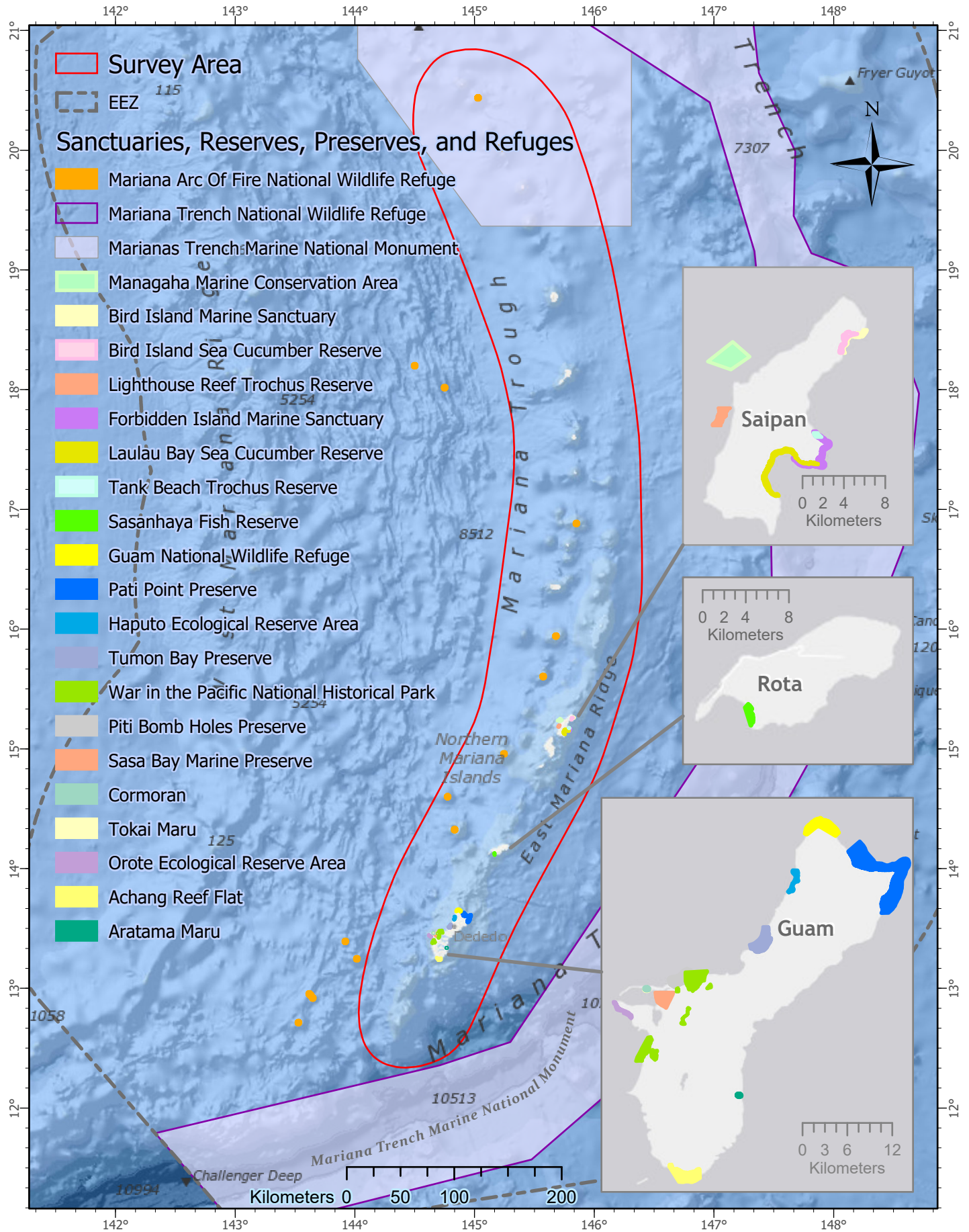
Based upon the information provided above, the NOAA Office of Coast Survey and PIFSC have determined that their respective projects are consistent to the maximum extent practicable with the enforceable policies of the CNMI Coastal Management Program. Pursuant to 15 CFR § 930.41, the CNMI Coastal Management Program has 60 days from the receipt of this letter in which to concur with or object to this Consistency Determination, or to request an extension under 15 CFR §930.41(b). Your office's concurrence will be presumed if a response is not received by NOAA on the 60th day from receipt of this determination. We request that the CNMI Coastal Management Program response be sent to both [jay.nunenkamp@noaa.gov](mailto:jay.nunenkamp@noaa.gov) and [hoku.johnson@noaa.gov](mailto:hoku.johnson@noaa.gov).

For questions or concerns regarding Coast Survey activities (hydrographic survey and UAS), please contact Jay Nunenkamp at [jay.nunenkamp@noaa.gov](mailto:jay.nunenkamp@noaa.gov) or by telephone at 240-533-0118.

For questions or concerns regarding PIFSC survey activities (coral reef ecosystem surveys, diving, installation and maintenance of scientific monitoring equipment), please contact Hoku Johnson at [hoku.johnson@noaa.gov](mailto:hoku.johnson@noaa.gov) or by telephone at 808-725-5323.

***Appendix A:***  
***Map of the Project Area***

# Mariana Islands Environmental Compliance



***Appendix B:***  
***Best Management Practices for the Coast Survey Hydrographic***  
***Survey***

## INTERIM BEST MANAGEMENT PRACTICES (BMPs) FOR HYDROGRAPHIC SURVEYS

The following BMPs are based on the Endangered Species Act (ESA) mitigation and monitoring measures agreed to between the OCS Hydrographic Surveys Division (HSD) and the NMFS Office of Protected Resources (OPR-ESA) and documented in the April 30, 2013 Biological Opinion<sup>1</sup> and in a May 12, 2017 Letter of Concurrence for revised speed limits.<sup>2</sup> They were adopted in the context of the ESA, but include BMPs for marine mammals listed in the ESA (“depleted” under MMPA). OCS follows these BMPs during all OCS hydro work while MMPA compliance is underway. In all cases BMPs will be communicated to ship and boat crews via project instructions. Contractors will additionally be made aware of BMPs via contract RFPs.

### **Universal BMPs (those to be included in all OCS project instructions):**

#### **Vessel Speed Limits**

- Vessels over 65 feet in overall length are limited to a speed of 13 knots or less at all times, unless a slower speed limit applies to the area (e.g., posted speed limits for the protection of manatees).
- Vessels of 65 feet in overall length or less are limited to a speed of 13 knots or less while mapping, unless a slower speed limit applies to the area.

#### **Echo sounder Restrictions**

- Avoid using sonar frequencies < 180 kHz when possible
  - Suspend **multibeam** sonar transmissions of < 125 kHz, when Southern Resident killer whales or Cook Inlet beluga whale are observed within hearing range (750 yards)
  - If **multibeam** sonar frequencies < 180 kHz must be employed, use echosounders at ≥ 50 kHz frequencies, with the lowest possible power and ping-rate
  - If **single beam** sonar frequencies < 180 kHz must be employed, use echo sounders at ≥ 30 kHz frequencies, with the lowest possible power and ping-rate and a 12° beam angle.
    - If **single beam** sonar frequencies < 30 kHz must be employed, suspend transmissions of 30 kHz or lower when ESA-listed cetacean species (whales, dolphins, and porpoises) are within hearing range (i.e., the 4.2 meter beam width).

#### **Vessel Maintenance Requirements**

- Meet all EPA Vessel General Permits and Coast Guard requirements
- Use anti-fouling coatings
- Clean hull regularly to remove aquatic nuisance species

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<sup>1</sup> [http://www.nmfs.noaa.gov/pr/consultation/opinions/biop\\_ocs\\_04302013.pdf](http://www.nmfs.noaa.gov/pr/consultation/opinions/biop_ocs_04302013.pdf)

<sup>2</sup> *Concurrence Letter on Revised Protective Measures to be Followed during Coast Survey Operations*, NMFS Office of Protected Resources, May 12, 2017

- Avoid cleaners with nonylphenols
- Rinse anchor with high-powered hose after retrieval

### **Anchoring Restrictions**

- Use designated anchorage area when available
- Use mapping data to anchor in mud or sand, to avoid anchoring on corals
- Minimize anchor drag

### **Visual Monitoring Requirements**

- Maintain trained observers aboard all vessels; 100% observer coverage
- Make species identification keys (for marine mammals, sea turtles, corals, abalone, and seagrasses) available on all vessels

### **Animal Approach Restrictions**

- Avoid nearshore surveys when Steller sea lions are observed onshore
- Avoid approaching within 100 yards of in-water pinnipeds (seals, sea lions, and walruses)
- When possible, suspend single beam sonar transmissions when ESA-listed pinnipeds (seals, sea lions, and walruses) are within hearing range (i.e., within the 4.2 meter beam width).
- Avoid approaching within 200 yards of cetaceans (whales, dolphins, and porpoises), 500 yards for right whales
- Suspend single beam sonar transmissions of 30 kHz or lower when ESA-listed cetaceans (whales, dolphins, and porpoises) are within hearing range (i.e., within the 4.2 meter beam width).
- Avoid approaching within 50 yards of sea turtles
- Avoid cetacean (whales, dolphins, and porpoises) ESA critical habitat, when possible.

*1. Minimize transit distance through the identified ESA critical habitat.*

*2. When mapping in ESA critical habitat is required, use the highest echo sounder frequencies appropriate for the area conditions.*

### **Discharge Restrictions**

- Avoid discharge of ballast water and hull cleaning in designated ESA critical habitat for NMFS species

***Appendix C:***  
***Best Management Practices for the PIFSC Project***

### **Reef Assessment and Monitoring Program Activities**

The following measures are carried out when working in and around shallow water coral reef habitats. These measures are intended to avoid and minimize impacts to protected species and benthic habitats, as well as avoid introducing non-native invasive species. These activities generally include small boat operations and divers in the water.

#### **Small Boat and Diver Operations**

- Transit from the open ocean to shallow-reef survey regions (depths of < 35 meters) of atolls and islands should be no more than 3 nautical miles, dependent upon prevailing weather conditions and regulations. Each team conducts surveys and in-water operations with at least 2 divers observing for the proximity of protected species sightings, a coxswain driving the small boat, and a topside spotter working in tandem. Topside spotters may also work as coxswains, depending on team assignment and boat layout. Spotters and coxswains will be tasked with specifically looking out for divers, protected species, and environmental hazards.
- Divers, spotters, and coxswains undertake consistent due diligence and take every precaution during operations to avoid interactions with any listed species. Scientists, divers, and coxswains follow the Best Management Practices (BMPs) for boat operations and diving activities. These practices include but are not limited to the following precepts:
  - Constant vigilance shall be kept for the presence of protected species
  - When piloting vessels, vessel operators shall alter course to remain at least 100 m from marine mammals and at least 50 m from sea turtles
  - Reduce vessel speed to 10 km or less when piloting vessels in the proximity of marine mammals
  - Reduce vessel speed to 5 km or less when piloting vessels in areas of known or suspected turtle activity
  - Marine mammals and sea turtles should not be encircled or trapped between multiple vessels or between vessels and the shore
  - If approached by a marine mammal or turtle, put the engine in neutral and allow the animal to pass
  - Unless specifically covered under a separate permit that allows activity in proximity to protected species, all in-water work will be postponed until whales are within 100 yards or other protected species are within 50 yards. Activity will commence only after the animal(s) depart the area



## PIFSC Best Management Practices

### Diving and Small Boats

- Should protected species enter the area while in-water work is already in progress, the activity may continue only when that activity has no reasonable expectation to adversely affect the animal(s)
- Do not attempt to feed, touch, ride, or otherwise intentionally interact with any protected species

### **Protocol for Minimizing Benthic Disturbance (including coral reefs)**

Research dives, using scuba, will focus on the goal of data collection for research and monitoring purposes. All care will be taken during anchoring small boats, with sand or rubble substrate targeted for anchorage to minimize benthic disturbance or coral damage. The operational area will be continuously monitored for protected species, with dive surveys being altered, postponed, or canceled and small-boats on standby, neutral, or relocating to minimize disturbances or interactions. The anchor will be lowered rather than thrown, and a diver will check the anchor to make sure it does not drag or entangle any benthos or listed species.

### **Protocol for Minimizing the Spread of Disease and Invasive Species**

The following actions are routinely required to minimize the spread of diseases to coral reef organisms and spreading invasive species on equipment and vessels.

#### *Equipment and Gear*

- Equipment (e.g., gloves, forceps, shears, transect lines, photographic spacer poles, surface marker buoys) in direct contact with potential invasive species, diseased coral tissues, or diseased organisms are soaked in a freshwater 1:32 dilution with commercial bleach for at least 10 min and only a disinfected set of equipment is used at each dive site.
- All samples of potentially invasive species, diseased coral tissues, or diseased organisms are collected and sealed in at least 2 of a combination of bags or jars underwater on-site and secured into a holding container until processing.
- Dive gear (e.g., wetsuit, mask, fins, snorkel, BC, regulator, weight belt, booties) is disinfected by one of the following ways: a 1:52 dilution of commercial bleach in freshwater, a 3 percent free chlorine solution, or a manufacturer's recommended disinfectant-strength dilution of a quaternary ammonium compound in "soft" (low concentration of calcium or magnesium ions) freshwater. Used dive gear is disinfected daily by performing the following steps: (1) physical removal of any organic matter and (2) submersion for a minimum of 10 min in an acceptable disinfection solution, followed by a thorough freshwater rinse and hanging to air dry. All gear in close proximity to the face or skin, such as masks, regulators, and gloves, are additionally rinsed thoroughly with potable water following disinfection.

### *Small Boats*

- Small boats that have been deployed in the field are cleaned and inspected daily for organic material, including any algal fragments or other organisms. Organic material, if found, is physically removed and disposed of according to the ship's solid-waste disposal protocol or in approved secure holding systems. The internal and external surfaces of vessels are rinsed daily with freshwater and always rinsed between islands before transits. Vessels are allowed to dry before redeployment the following day.

### **Sea Turtles and Hawaiian Monk Seals**

- To avoid interactions with listed species during surveys and operations, team members and small boat coxswains will monitor areas while in transit to and from work sites. If a listed species is sighted the vessel will alter course in the opposite direction. If unable to change course, the vessel will slow or come to a stop awaiting the animal to be clear of the boat as long as passenger safety is not compromised. Currently, there are no known strikes or incidental takes of a listed protected species from a vessel or propeller of a Pacific RAMP vessel in the NWHI, or other surveyed areas around the Pacific.
- As part of due diligence, protected species monitoring will continue throughout all dive operations by at least one team member aboard each boat and two divers working underwater. Operations will be altered and modified as previously listed.
- Mechanical equipment will also be monitored to ensure no accidental entanglements occur with protected species (e.g., with PAM float lines, transect lines, and oceanographic equipment stabilization lines). Team members will immediately respond to an entangled animal, halting operations and providing an onsite response assessment (allowing the animal to disentangle itself, assisting with disentanglement, etc.), unless doing so would put divers, coxswains, or other staff at risk of injury or death.
- Before approaching any shoreline or exposed reef, all observers will examine the beach, shoreline, reef areas, and any other visible land areas within the line of sight for marine mammals and sea turtles. The Pacific RAMP teams typically do not participate during terrestrial surveys and operations as part of their mandate, and, therefore, minimize the potential for disturbances of resting animals along shorelines.

### **Mitigation Measures for Essential Fish Habitat**

Some of the mitigation measures described for marine mammals and protected species under the Status Quo Alternative are also designed to protect EFH, including the following:

- Speed limits and course alterations - slower vessel speeds reduce the risk of vessel groundings and damage to EFH habitat such as coral reefs. Transit from the open ocean to shallow-reef

## PIFSC Best Management Practices

### Diving and Small Boats

survey regions (depths of < 35 m) of atolls and islands should be no more than 3 nm, dependent upon prevailing weather conditions and regulations.

- Small boat and diver operations – Care is taken during anchoring small boats, with sand or rubble substrate targeted for anchorage, to minimize benthic disturbance or coral damage. The anchor is lowered rather than thrown, and a diver checks the anchor to ensure it does not drag or entangle any benthos.
- Minimizing the spread of disease and invasive species – Equipment in direct contact with potential invasive species, diseased coral tissues, or diseased organisms are soaked in freshwater 1:32 dilution with commercial bleach for at least 10 minutes and only a disinfected set of equipment is used at each dive site. Small boats that have been deployed in the field are cleaned and inspected daily for organic material, including any algal fragments or other organisms. Organic material, if found, is physically removed and disposed of according to the ship's solid-waste disposal protocol or in approved secure holding systems. The internal and external surfaces of vessels are rinsed daily with freshwater and always rinsed between islands before transits. Vessels are allowed to dry before redeployment the following day.