*Okeanos Explorer* ROV Dive Planning Form

Last Updated: March 1, 2017

**Expedition: EX-17-05: Cook Islands, Jarvis Island, and Kingman/Palmyra**

Please use this as a template for documenting your recommendations for high-priority dive targets. Be sure to include a rationale for the dive as well as specific protocols (if applicable), and any known previous work or potential hazards at the site. Please include only generalized location information for any marine archaeology sites.

The form also includes fields for mapping targets and CTD cast locations as well.

Please send the completed form to [Kasey.Cantwell@noaa.gov](mailto:Kasey.Cantwell@noaa.gov)

**Site Name:** Palmyra SW- Mello

**Approximate Location (in decimal degrees):** 5°48'34.40"N, 162°12'43.76"W

**Dive Date (local):** YYYY/MM/DD

**Depth Range (starting and ending depth in meters or list of targeted depths for mid-water dives):** ~2400-1500 m

**Insert Image of Dive Site (if available)**

# Exploration Rational

*Please explain the rational for the specific dive track, and how the dive fits in with* [*CAPSTONE*](http://oceanexplorer.noaa.gov/okeanos/explorations/capstone/welcome.html) *priorities or themes.*

**We are interested in investigating the similarities and differences in community composition between different seamounts in different parts of the world at similar depths. We are particularly interested in coral and sponge communities and the possibility for endemism in these areas.**

**The general goal of this dive is to acquire baseline information on deep sea habitats, seafloor geology, and biological communities within the Kingman Reef and Palmyra Atoll Unit of the Pacific Remote Islands Marine National Monument (PRIMNM). Deep-sea environments around the Kingman and Palmyra are virtually unexplored leading to poor knowledge of biological resources protected by these monuments. Understanding deep-sea coral distribution as well as bathyal fish communities is of great importance to inform management in the area.**

**Video transects will be made with the goal of identifying the composition and abundance of benthic invertebrate and fish communities along a bathyal depth gradient. Biological and geological sampling at depth around Palmyra Atoll will also enable comparison with areas within other PRIMNM units and the Tokelau Seamount Chain, Phoenix Islands Protected Area, and other areas of the Pacific sampled as part of NOAA’s CAPSTONE program.**

# **Dive Objectives**

*Please provide a brief explanation of the objectives of the dive, what you can anticipate encountering/what available tools you anticipate using (e.g. high temperature probe at hydrothermal vent), and any other relevant information (e.g. mid-water transects at 800, 1000, 1200 m) that will impact operations.*

**Has previous work been conducted here? Are there potential hazards in the area?**

There is some mapping data but as far as I know, there are no recorded ROV dives. Potential for boat traffic near Palmyra Atoll?

**If you have submitted multiple dive plans, what is the relative priority of this dive?**(Please provide a numeric ranking)

# Sampling Objectives

**Please describe any particular biologic or geological sampling priorities for this site. How will these samples contribute to establishing a baseline characterization of the site or general region? What potential discoveries are there to be made by collecting these samples?**

Biology: Potential new species of deep-sea corals, sponges, and other benthic megafauna. New

records indicating substantial range expansion for known species.

Geology: Angular Fe-Mn coated basalt rocks >20cm in diameter for seamount age dating.

# ROV Track Waypoints Table

*For mid-water work please provide a starting location and depths for transects, and weigh points along the dive (if applicable).*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Desired Waypoints to Explore  (completed by shore-side scientist) | | | | Actual Waypoints to Explore  (completed by shipboard expedition leader) | | | |
| **Waypoint Name or Sequence** | **Latitude** | **Longitude** | **Approx. Depth** | **Waypoint Name or Sequence** | **Latitude** | **Longitude** | **Approx. Depth** |
| Launch |  |  |  | **Launch** |  |  |  |
| WP1 |  |  |  | **WP1** |  |  |  |
| WP2 |  |  |  | **WP2** |  |  |  |
| WP3 |  |  |  | **WP3** |  |  |  |
| WP4 |  |  |  | **WP4** |  |  |  |
| WP5 |  |  |  | **WP5** |  |  |  |
| Recovery |  |  |  | **Recovery** |  |  |  |

**Ancillary Information:**

***This could include specifics about your proposed dive, such as how you would***

# Additional Requested Operations in the Target Area Prior to or After the ROV Dive

Please include requests for in situ sensors (LSS, DO, ORP) to be added to the CTD cast here, and specifics on the type of mapping operation requested (multibeam, subbottom, single beam, ADCP) in the table below.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Latitude | Longitude | Approx. Depth |
| CTD Casts | | | |
| 1 |  |  |  |
| 2 |  |  |  |
| 3 |  |  |  |
| 4 |  |  |  |
| Mapping Area Bounding Coordinates | | | |
| North |  |  |  |
| East |  |  |  |
| South |  |  |  |
| West |  |  |  |