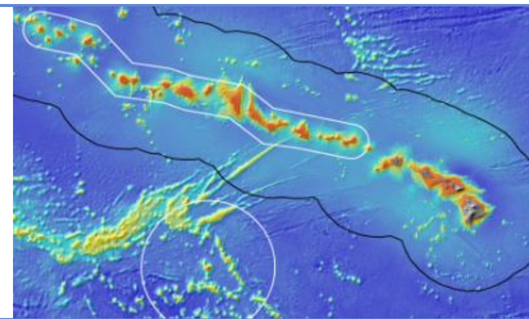


Site Name	North Maro Ridge		
ROV Lead/Expedition Coordinator	Karl McLetchie Kelley Elliott		
Science Team Leads	Chris Kelley (Biology) Daniel Wagner (Biology)		
General Area Descriptor	Northwestern Hawaiian Islands		
ROV Dive Name	Cruise Season	Leg	Dive Number
	EX1504	2	DIVE15
Equipment Deployed	ROV:	Deep Discoverer	
	Camera Platform:	Seirios	
ROV Measurements	☒ CTD	☒ Depth	☒ Altitude
	☒ Scanning Sonar	☒ USBL Position	☒ Heading
	☒ Pitch	☒ Roll	☒ HD Camera 1
	☒ HD Camera 2	☒ Low Res Cam 1	☒ Low Res Cam 2
	☒ Low Res Cam 3	☒ Low Res Cam 4	☒ Low Res Cam 2
Equipment Malfunctions	There were only few communications issues between the shore-based and shipboard science team. The shore-based science team reported that the video froze on a few occasions.		
ROV Dive Summary (From processed ROV data)	Dive Summary: EX1504L2_DIVE15 ^^ In Water at: 2015-08-16T18:13:51.328000 25°, 48.762' N ; 171°, 06.034' W Out Water at: 2015-08-17T02:25:46.390000 25°, 48.823' N ; 171°, 05.069' W Off Bottom at: 2015-08-17T01:37:40.390000 25°, 48.848' N ; 171°, 05.379' W On Bottom at: 2015-08-16T19:18:26.250000 25°, 48.713' N ; 171°, 05.862' W Dive duration: 8:11:55 Bottom Time: 6:19:14 Max. depth: 1752.4 m		
Special Notes			
Scientists Involved *(please provide name / location / affiliation / email)*	Amanda Ziegler, UH, UH, aziegler802@gmail.com Amy Baco-Taylor, HBOI ECC, FSU, abacotaylor@fsu.edu Asako Matsumoto, Tokyo, PERC/CIT, amatsu@gorgonian.jp Chris Kelley, EX, UH, ckelley@hawaii.edu Chris Mah, SI, SI NMNH, mahch@si.edu Daniel Wagner, EX, PMNM, daniel.wagner@noaa.gov Jonathan Tree, UH, UH, jtree@hawaii.edu Les Watling, UH, UH, watling@hawaii.edu Mackenzie Gerringer, UH, UH, mgerring@hawaii.edu Randal Singer, FL, FLMNH, rsinger@flmnh.ufl.edu Santiago Herrera, Toronto, U. Toronto/WHOI, sherrera@alum.mit.edu Scott France, ULL, ULL, france@louisiana.edu Steve Haddock, MBARI, MBARI, haddock@mbari.org Tina Molodtsova, Washington, DC, PPSIO, tina@ocean.ru		

Purpose of the Dive

This dive was on a ridge located north of Maro Reef. The objectives of the dive were to survey a completely unexplored area for corals and sponges, testing the hypothesis that high density communities can be found on ridge topography and that the orientation of the ridge is important. No previous dives have ever been conducted on this site. Discovery of high density communities will provide valuable information to NOAA's Deep Sea Coral and Technology Program (DSCTP). The target start point of the dive was

approximately 100m below the southern break in slope at a depth of 1743m. The plan was to survey up the steep side of the ridge to the ridge crest at 1714m. The ROV would then turn east and follow the ridge crest up to a final depth of 1570m.

Description of the Dive:

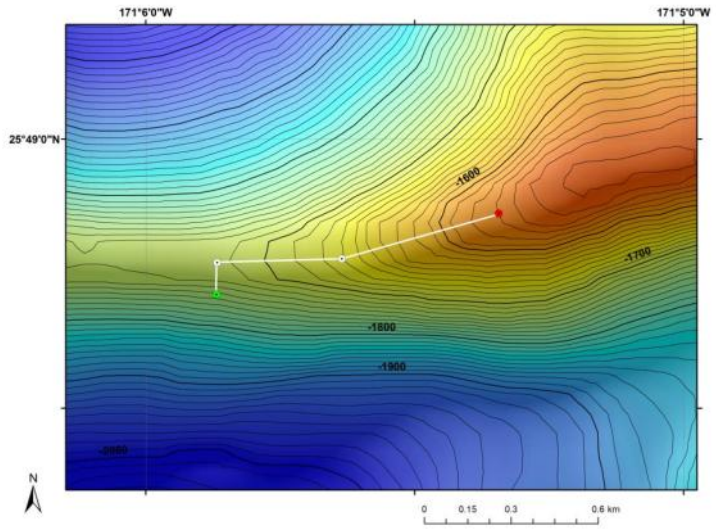
The ROV landed on a sloped surface consisting of Mn-crusted cobble, rubble and boulders overlaying sediment at 1750m. There was a slight current from the west towards the east. Several chrysogorgid colonies were observed close to the landing spot. As the ROV moved up the flank of the ridge, there was a modest density of corals, which mostly consisted of the species *Metallogorgia melanotrichos*. On the way up the flank of the ridge, the ROV collected a Mn-crusted rock sample at 1741m and a coral sample at 1720m. Once the ROV arrived at the crest of the ridge, the community changed to one dominated by *Pleurocorallium kishinouyei* and a yellow species of unstalked crinoids. There was a slight current coming from the west, which changed during the day to coming from the south. As the ROV moved east on the crest of the ridge, it passed over several large boulders which were covered with a high density of *Iridogorgia bella* and black corals. A second Mn-crusted rock sample was collected at 1645m. Shortly before leaving the bottom, the ROV collected a second coral sample at 1555m. The ROV left the bottom at a depth of 1555m after a total bottom time of 6:02h, having covered a linear distance of 960m.

Animals observed during the dive are listed below:

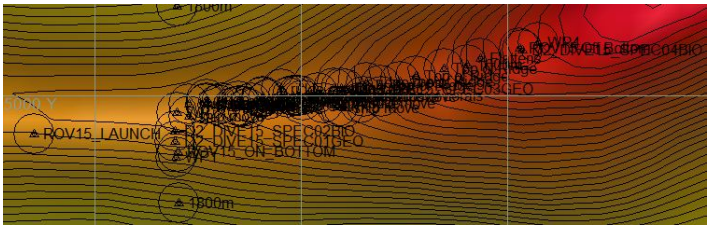
Phylum	Group	Species
Anellida	Polychaetes	Polychaete
Arthropods	Barnacles	Scalpellidae
Arthropods	Amphipod	Caprellid amphipod
Arthropods	Shrimp	Aristopenaeus? sp.
Arthropods	Shrimp	Bathypalaemonella sp.
Arthropods	Shrimp	Nematocarcinus tenuisrostris
Arthropods	Shrimp	Unidentified shrimp in water column
Arthropods	Squat lobsters	Munidopsis sp.
Cnidarians	Actiniarians	Exocoelactis sp.
Cnidarians	Actiniarians	Hormathiidae
Cnidarians	Actiniarians	Unidentifed anemone
Cnidarians	Alcyonaceans	Anthomastus sp.
Cnidarians	Alcyonaceans	Pseudoanthomastus sp.
Cnidarians	Alcyonaceans	Anthomastus tahinodus
Cnidarians	Alcyonaceans	Stoloniferous octocoral
Cnidarians	Antipatharians	Bathypathes alternata
Cnidarians	Antipatharians	Bathypathes conferta
Cnidarians	Antipatharians	Parantipathes sp.
Cnidarians	Antipatharians	Stauropathes staurocrada
Cnidarians	Antipatharians	Trissopathes cf. pseudotristicha
Cnidarians	Antipatharians	Umbellapathes helioanthes
Cnidarians	Gorgonians	Acanella weberi
Cnidarians	Gorgonians	Acanthogorgia sp.
Cnidarians	Gorgonians	Calyptrophora/Narella sp.
Cnidarians	Gorgonians	Candidella gigantea
Cnidarians	Gorgonians	Chrysogorgia geniculata
Cnidarians	Gorgonians	Pleurocorallium kishinouyei
Cnidarians	Gorgonians	Corallium sp.
Cnidarians	Gorgonians	Iridogorgia bella
Cnidarians	Gorgonians	Iridogorgia magnispiralis
Cnidarians	Gorgonians	Isidella sp. lyrate
Cnidarians	Gorgonians	Jasonisis/Orstomisis sp.
Cnidarians	Gorgonians	Keratoisis sp.
Cnidarians	Gorgonians	Lepidisis sp.
Cnidarians	Gorgonians	Long bones isidid

Cnidarians	Gorgonians	Metallogorgia melanotrichos
Cnidarians	Gorgonians	Narella/Calyptrophora sp.
Cnidarians	Gorgonians	Paragorgia sp.
Cnidarians	Gorgonians	Paramuricea sp.
Cnidarians	Gorgonians	Plexauridae sp.
Cnidarians	Gorgonians	Rhodanirigorgia sp.
Cnidarians	Gorgonians	Unbranched isidids
Cnidarians	Gorgonians	Victorgorgia nuttingi
Cnidarians	Hydrozoans	Solanderia sp.
Cnidarians	Hydrozoans	Solitary hydroid
Cnidarians	Pennatulaceans	Anthoptilum sp.
Cnidarians	Pennatulaceans	Protoptilum sp.
Cnidarians	Scleractinians	Desmophyllum sp.
Ctenophores	Ctenophores	Ctenophores
Echinoderms	Asteroids	Asthenactis papyraceus
Echinoderms	Asteroids	Brisingid
Echinoderms	Asteroids	Cheiraster sp.
Echinoderms	Asteroids	Hymenaster sp. (slime star)
Echinoderms	Asteroids	Pythonaster sp.
Echinoderms	Crinoids	Glyptometra sp.
Echinoderms	Crinoids	Proisocrinus ruberrimus
Echinoderms	Crinoids	Atelocrinus sp.
Echinoderms	Crinoids	Unidentified comatulids
Echinoderms	Crinoids	Unidentified stalked crinoid
Echinoderms	Ophiuroids	Gorgonocephalus sp.
Echinoderms	Ophiuroids	Unidentified ophiuroids
Echinoderms	Urchin	Sperosoma cf. obscurum
Fishes	Eel-like	Aldrovandia sp.
Fishes	Macrourids	Bassozetus sp.
Fishes	Macrourids	Gadomus sp.
Fishes	Macrourids	Trachonurus/Malacocephalus sp.
Mollusks	Gastropods	Gastropod
Sponges	Hexactinellids	Caulophacus (New subgenus) sp.
Sponges	Hexactinellids	Poliopogon sp.
Sponges	Hexactinellids	Poliopogon sp.A
Sponges	Hexactinellids	Poliopogon sp.B
Sponges	Hexactinellids	Poliopogon sp.D
Sponges	Hexactinellids	Tretopleura sp.
Sponges	Hexactinellids	Walteria cf. leukarti

Overall Map of Dive Area	**Actual track of ROV dive**



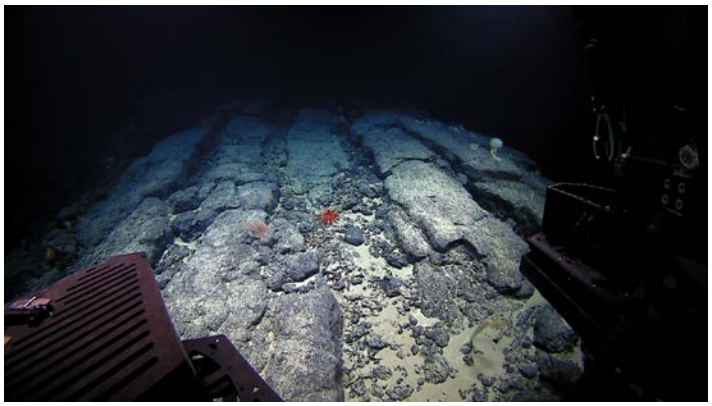
Bathymetry data for the dive site. Planned dive start and end points are shown as green and red dots, respectively.



Hypack screen grab showing waypoints dropped during the actual ROV dive.

Representative Photos of the Dive

Pleurocorallium kishinouyei, the dominant species of coral in this community, growing along a rock edge at the ridge crest.



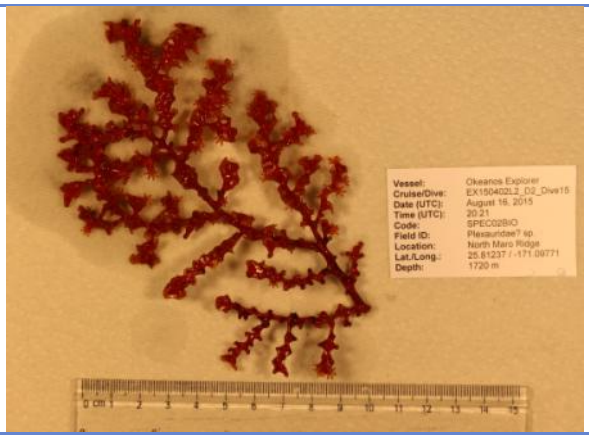
Broken slabs, likely broken pieces of volcanic sheet flows, were seen for the first time on the cruise at this site.

Samples Collected

Sample ID	EX1504L2_20150816193407_D2_Dive15_SPEC01GEO
Date (UTC)	2015/08/16
Time (UTC)	19:34:07
Depth (m)	1741
Temperature (°C)	2.20373
Oxygen (mL/L)	2.51908
Field ID(s)	Mn-crusted rock

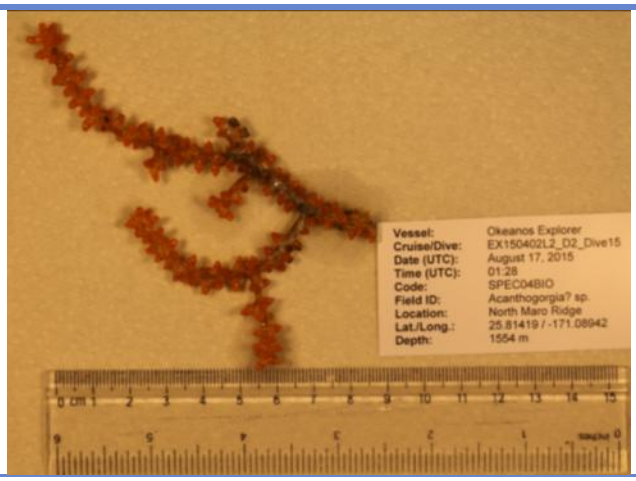
Comments	
Sample ID	EX1504L2_20150816202134_D2_Dive15_SPEC02BIO
Date (UTC)	2015/08/16
Time (UTC)	20:21:34

Depth (m)	1720
Temperature (°C)	2.28768
Oxygen (mL/L)	2.48172
Field ID(s)	Plexauridae? sp.
Comments	



Sample ID	EX1504L2_20150816230447_D2_Dive15_SPEC03GEO
Date (UTC)	2015/08/16
Time (UTC)	23:04:47
Depth (m)	1645
Temperature (°C)	2.24654
Oxygen (mL/L)	2.46033
Field ID(s)	Mn-crusted rock
Comments	

Sample ID	EX1504L2_20150817012816_D2_Dive15_SPEC04BIO
Date (UTC)	2015/08/17
Time (UTC)	01:28:16
Depth (m)	1554
Temperature (°C)	2.46483
Oxygen (mL/L)	2.20415
Field ID(s)	Acanthogorgia? sp.
Comments	



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