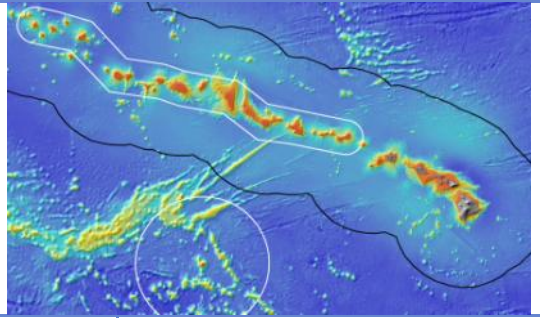


OKEANOS EXPLORER ROV DIVE SUMMARY

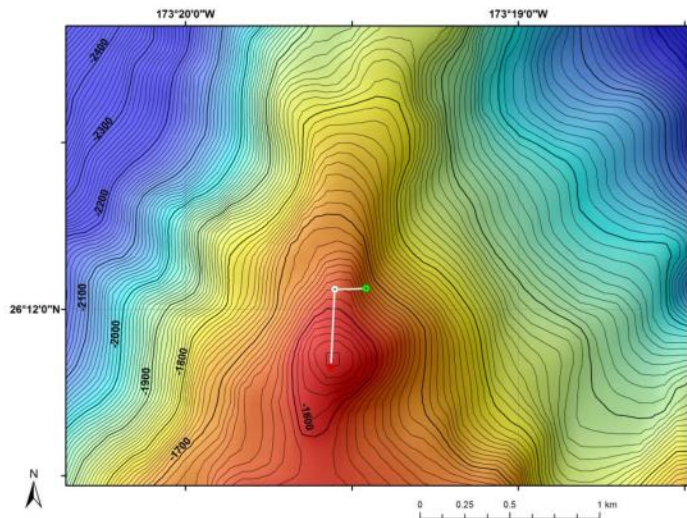
<b>Site Name</b>	North Pioneer Ridge		
<b>ROV Lead/Expedition Coordinator</b>	Karl McLetchie Kelley Elliott		
<b>Science Team Leads</b>	Chris Kelley (Biology) Daniel Wagner (Biology)		
<b>General Area Descriptor</b>	Northwestern Hawaiian Islands		
<b>ROV Dive Name</b>	Cruise Season	Leg	Dive Number
	EX1504	2	DIVE14
<b>Equipment Deployed</b>	ROV:	Deep Discoverer	
	Camera Platform:	Seirios	
<b>ROV Measurements</b>	<input checked="" type="checkbox"/> CTD	<input checked="" type="checkbox"/> Depth	<input checked="" type="checkbox"/> Altitude
	<input checked="" type="checkbox"/> Scanning Sonar	<input checked="" type="checkbox"/> USBL Position	<input checked="" type="checkbox"/> Heading
	<input checked="" type="checkbox"/> Pitch	<input checked="" type="checkbox"/> Roll	<input checked="" type="checkbox"/> HD Camera 1
	<input checked="" type="checkbox"/> HD Camera 2	<input checked="" type="checkbox"/> Low Res Cam 1	<input checked="" type="checkbox"/> Low Res Cam 2
	<input checked="" type="checkbox"/> Low Res Cam 3	<input checked="" type="checkbox"/> Low Res Cam 4	<input checked="" type="checkbox"/> Low Res Cam 2
<b>Equipment Malfunctions</b>	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 several occasions.		
<b>ROV Dive Summary (From processed ROV data)</b>	Dive Summary: EX1504L2_DIVE14 ~~~~~		
	In Water at:	2015-08-15T18:24:04.968000 26°, 12.189' N ; 173°, 19.522' W	
	Out Water at:	2015-08-16T02:20:27.750000 26°, 11.709' N ; 173°, 19.294' W	
	Off Bottom at:	2015-08-16T01:30:13.812000 26°, 11.813' N ; 173°, 19.543' W	
	On Bottom at:	2015-08-15T19:26:14.562000 26°, 12.068' N ; 173°, 19.452' W	
	Dive duration:	7:56:22	
	Bottom Time:	6:3:59	
	Max. depth:	1645.0 m	
<b>Special Notes</b>			
<b>Scientists Involved (please provide name / location / affiliation / email)</b>	Abby Lapointe, UH, UH, abbylap@hawaii.edu Amy Baco-Taylor, HBOI ECC, FSU, abacotaylor@fsu.edu Asako Matsumoto, Tokyo, PERC/CIT, amatsu@gorgonian.jp Astrid Leitner, UH, UH, aleitner@hawaii.edu Brendan Roark, TAMU-CC, TAMU, broark@geos.tamu.edu Chris Kelley, EX, UH, ckelley@hawaii.edu Daniel Wagner, EX, PMNM, daniel.wagner@noaa.gov Jonathan Tree, UH, UH, jtree@hawaii.edu Les Watling, UH, UH, watling@hawaii.edu Mackenzie Gerring, UH, UH, mgerring@hawaii.edu		
<b>Purpose of the Dive</b>			
This site was located on a ridge that extends northward from Pioneer Bank. The dive was conducted for the purpose of determining whether ridge topography is suitable for high density communities of corals and sponges, thereby providing valuable information to NOAA's Deep Sea Coral and Technology Program (DSCTP). The target start point of the dive was on the eastern side of the ridge at a depth of 1666m. The ROV would survey up the side of the ridge until it reached the crest at 1620m, then turn southward and survey the ridge crest until reaching a depth of 1552m. This depth of this dive was closer to the oxygen minimum zone so we were also interested in detecting any effects of a lower oxygen environment on the communities.			
<b>Description of the Dive:</b>			

The ROV landed on a sloped surface consisting of Mn-crusts on cobble and boulders overlaying sediment at 1644m. There was a moderate current from the west towards the east. While the density of animals close to the landing spot was relatively low, they consisted of a diverse assemblage of corals and sponges. As the ROV transited towards the flank of the ridge, the density of animals increased and the assemblage was dominated by the sponge *Walteria* cf. *leuckarti* and chrysogorgid corals (both *Chrysogorgia* sp and *Iridogorgia* sp.). These groups remained dominant as the ROV moved along the crest of the ridge for the remainder of the dive. At 1587m, the ROV collected a Mn-crusts basalt sample, as well as an unbranched coral with a commensal ophiuroid. As the ROV continued moving along the crest of the ridge, it became evident that the corals and sponges were aggregated along the crest and upper flanks of the ridge. A black coral sample, along with two commensal squat lobsters was collected at 1535. Further up the slope, the ROV collected a second Mn-crusts basalt sample at 1528m. The ROV left the bottom at a depth of 1535m after a total bottom time of 6:02h.

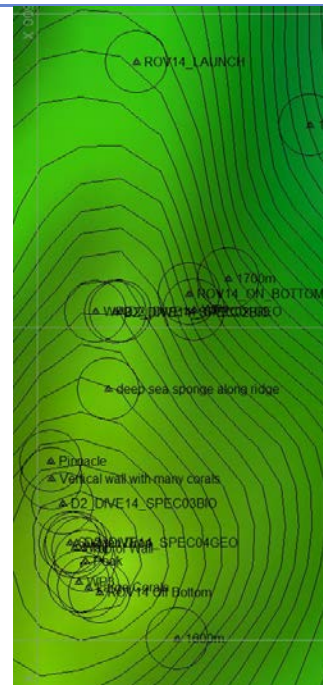
**Animals observed during the dive are listed below:**

<b>Phylum</b>	<b>Group</b>	<b>Species</b>
Arthropod	Crab	Hermit crab
Arthropod	Crab	<i>Lithodes longispina</i>
Arthropods	Barnacles	Scalpellidae
Arthropods	Amphipod	Amphipod
Arthropods	Shrimp	<i>Aristopenaeus?</i> sp.
Arthropods	Shrimp	<i>Bathypalaemonella</i> sp.
Arthropods	Shrimp	<i>Bathypalaemonella serratopalma?</i>
Arthropods	Shrimp	<i>Nematocarcinus tenuistrostris</i>
Arthropods	Squat lobsters	Munidae
Arthropods	Squat lobsters	<i>Munidopsis</i> sp.
Arthropods	Squat lobsters	Purple <i>Munidopsis</i> sp.
Cnidarians	Actinarians	<i>Actinoscyphia</i> sp.
Cnidarians	Actinarians	Hormathiidae
Cnidarians	Actinarians	Unidentified anemone
Cnidarians	Alcyonaceans	<i>Anthomastus</i> sp.
Cnidarians	Alcyonaceans	<i>Pseudoanthomastus</i> sp.
Cnidarians	Antipatharians	<i>Bathypathes alternata</i>
Cnidarians	Antipatharians	<i>Bathypathes patula</i>
Cnidarians	Antipatharians	<i>Parantipathes</i>
Cnidarians	Antipatharians	<i>Stauropathes</i>
Cnidarians	Antipatharians	<i>Trissopathes</i> sp.
Cnidarians	Corallimorpharian	<i>Corallimorphus pilatus</i>
Cnidarians	Gorgonians	<i>Acanella weberi?</i>
Cnidarians	Gorgonians	<i>Acanthogorgia</i> sp.
Cnidarians	Gorgonians	<i>Candidella gigantea</i>
Cnidarians	Gorgonians	<i>Chrysogorgia geniculata</i>
Cnidarians	Gorgonians	<i>Chrysogorgia chryseis</i>
Cnidarians	Gorgonians	<i>Chrysogorgia</i> sp.
Cnidarians	Gorgonians	<i>Chrysogorgia stellata</i>
Cnidarians	Gorgonians	<i>Corallium</i> sp.
Cnidarians	Gorgonians	<i>Iridogorgia bella</i>
Cnidarians	Gorgonians	<i>Iridogorgia magnispiralis</i>
Cnidarians	Gorgonians	<i>Iridogorgia splendens?</i>
Cnidarians	Gorgonians	<i>Isidella trident</i>
Cnidarians	Gorgonians	<i>Jasonisis/Orstomisis</i> sp.
Cnidarians	Gorgonians	<i>Keratoisis</i> sp.
Cnidarians	Gorgonians	<i>Keratoisis</i> cf. <i>magnifica</i>
Cnidarians	Gorgonians	<i>Lepidisis</i> sp.

Cnidarians	Gorgonians	Metallogorgia melanotrichos
Cnidarians	Gorgonians	Narella musikae?
Cnidarians	Gorgonians	Orstomisis? sp.
Cnidarians	Gorgonians	Paragorgia sp.
Cnidarians	Gorgonians	Paramuricea sp.
Cnidarians	Gorgonians	Rhodanirigorgia sp.
Cnidarians	Gorgonians	Victorgorgia nuttingi
Cnidarians	Hydrozoans	Hydromedusae
Cnidarians	Scleractinians	Desmophyllum sp.
Cnidarians	Zoanthid	Unidentified zoanthid overgrowing Paramuricea
Ctenophores	Ctenophores	Ctenophores
Echinoderms	Asteroids	Hypasteria sp.
Echinoderms	Asteroids	Unidentified asteroid
Echinoderms	Crinoids	Glyptometra sp.
Echinoderms	Crinoids	Unidentified comatulids
Echinoderms	Holothuria	Unidentified holothurian
Echinoderms	Ophiuroids	Asteroschema sp.
Echinoderms	Ophiuroids	Gorgonocephalus sp.
Echinoderms	Ophiuroids	Unidentified ophiuroids
Echinoderms	Urchin	Sperosoma cf. obscurum
Fishes	Eels	Synaphobranchus sp.
Fishes	Eels	Synaptobranchid
Fishes	Macrourids	Coryphaenoides sp.
Fishes	Macrourids	Trachonurus/Malacocephalus sp.
Fishes	Moridae	Laemonema sp.
Sponges	Hexactinellids	Bolosoma sp.
Sponges	Hexactinellids	Caulophacus sp.
Sponges	Hexactinellids	Farrea nr occa erecta
Sponges	Hexactinellids	Farreidae
Sponges	Hexactinellids	Lefroyella sp.
Sponges	Hexactinellids	Poliopogon sp.
Sponges	Hexactinellids	Poliopogon sp.D
Sponges	Hexactinellids	Tretopleura sp.
Sponges	Hexactinellids	Walteria cf. leukarti
<b>Overall Map of Dive Area</b>		<b>Actual track of ROV dive</b>

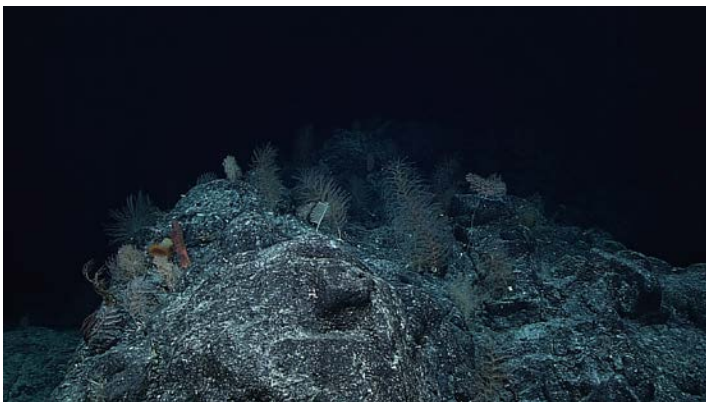


Bathymetry data for the dive site. Planned dive start and end points are shown as green and red dots, respectively.



Hypack screen grab showing waypoints dropped during actual ROV dive.

### Representative Photos of the Dive



The coral community at this site was dominated by chrysogorgiids, as is shown in this image. At least 3 different species are shown in this image grab alone.








Very unusual Munidopsis sp. crab observed on a black coral (Parantipathes sp.). The species identity is presently being investigated by the shoreside science team.

### Samples Collected

Sample ID	EX1504L2_20150815204959_D2_Dive14_SPEC01GEO
Date (UTC)	2015/08/15
Time (UTC)	20:49:59
Depth (m)	1587
Temperature (°C)	2.3354
Oxygen (mL/L)	2.26041
Field ID(s)	Mn-crusted basalt
Comments	
Sample ID	EX1504L2_20150815210641_D2_Dive14_SPEC02BIO



<b>Date (UTC)</b>	2015/08/15	
<b>Time (UTC)</b>	21:06:41	
<b>Depth (m)</b>	1587	
<b>Temperature (°C)</b>	2.3376	
<b>Oxygen (mL/L)</b>	2.22604	
<b>Field ID(s)</b>	Unbranched Primnoidae	
<b>Comments</b>	Coral had commensal ophiuroid on it that was also collected	
<b>Sample ID</b>	EX1504L2_20150815210641_D2_Dive14_SPEC02BIO_C01	
<b>Date (UTC)</b>	2015/08/15	
<b>Time (UTC)</b>	21:06:41	
<b>Depth (m)</b>	1587	
<b>Temperature (°C)</b>	2.3376	
<b>Oxygen (mL/L)</b>	2.22604	
<b>Field ID(s)</b>	Commensal ophiuroid	
<b>Comments</b>	Attached to unbranched primnoid coral that was also collected	
<b>Sample ID</b>	EX1504L2_20150815232115_D2_Dive14_SPEC03BIO	
<b>Date (UTC)</b>	2015/08/15	
<b>Time (UTC)</b>	23:21:15	
<b>Depth (m)</b>	1535	
<b>Temperature (°C)</b>	2.33354	
<b>Oxygen (mL/L)</b>	2.24042	
<b>Field ID(s)</b>	Parantipathes sp.	
<b>Comments</b>	Black coral had two commensal squat lobsters that were also collected.	
<b>Sample ID</b>	EX1504L2_20150815232115_D2_Dive14_SPEC03BIO_C01	
<b>Date (UTC)</b>	2015/08/15	
<b>Time (UTC)</b>	23:21:15	
<b>Depth (m)</b>	1535	
<b>Temperature (°C)</b>	2.33354	
<b>Oxygen (mL/L)</b>	2.24042	
<b>Field ID(s)</b>	Commensal squat lobsters	
<b>Comments</b>	Commensal squat lobsters were collected from black coral sample.	
<b>Sample ID</b>	EX1504L2_20150816002145_D2_Dive14_SPEC04 GEO	

<b>Date (UTC)</b>	2015/08/16	
<b>Time (UTC)</b>	00:21:45	
<b>Depth (m)</b>	1528	
<b>Temperature (°C)</b>	2.2246	
<b>Oxygen (mL/L)</b>	2.34934	
<b>Field ID(s)</b>	Mn-crust basalt	
<b>Comments</b>		

**Please direct inquiries to:**

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