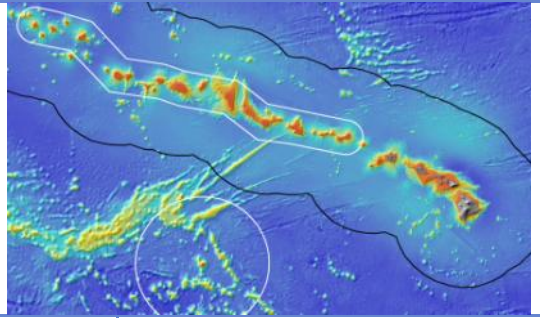


OKEANOS EXPLORER ROV DIVE SUMMARY

Site Name	St. Rogatien Rift Zone 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	DIVE03
Equipment Deployed	ROV:	Deep Discoverer	
	Camera Platform:	Seirios	
ROV Measurements	<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
Equipment Malfunctions	30 minutes into the dive, the ship lost its dynamic positioning for ~15 minutes, during which the ROV had to come off the bottom. The teleconference call between the shore-based and shipboard science team was dropped on several occasions.		
ROV Dive Summary (From processed ROV data)	Dive Summary: EX1504L2_DIVE03		
	~~~~~		
	In Water at:	2015-08-04T18:21:05.968000 25°, 37.592' N ; 167°, 14.682' W	
	Out Water at:	2015-08-05T02:28:55 25°, 37.765' N ; 167°, 13.771' W	
	Off Bottom at:	2015-08-05T01:19:43.093000 25°, 37.592' N ; 167°, 14.559' W	
	On Bottom at:	2015-08-04T19:33:23.812000 25°, 37.582' N ; 167°, 14.352' W	
	Dive duration:	8:7:49	
	Bottom Time:	5:46:19	
Max. depth:	2155.6 m		
<b>Special Notes</b>			
<b>Scientists Involved (please provide name / location / affiliation / email)</b>	Chris Kelley, EX, UH, <a href="mailto:ckelley@hawaii.edu">ckelley@hawaii.edu</a>		
	Daniel Wagner, EX, PMNM, <a href="mailto:Daniel.Wagner@noaa.gov">Daniel.Wagner@noaa.gov</a>		
	Diva Amon, UH, UH <a href="mailto:divaamon@hawaii.edu">divaamon@hawaii.edu</a>		
	Amy Baco-Taylor, HBOI ECC, FSU, <a href="mailto:abacotaylor@fsu.edu">abacotaylor@fsu.edu</a>		
	Scott France, ULL, ULL, <a href="mailto:france@louisiana.edu">france@louisiana.edu</a>		
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	Andrea Quattrini, Pasadena, CA, USGS, <a href="mailto:aquattrini@usgs.gov">aquattrini@usgs.gov</a>		
	John R Smith, UH, UH, <a href="mailto:jrsmith@hawaii.edu">jrsmith@hawaii.edu</a>		
	Michael Garcia, UH, UH, <a href="mailto:mogarcia@hawaii.edu">mogarcia@hawaii.edu</a>		
	Bruce Mundy, IRC, NOAA, <a href="mailto:bruce.mundy@noaa.gov">bruce.mundy@noaa.gov</a>		
	Jonathan Tree, UH, UH, <a href="mailto:jtree@hawaii.edu">jtree@hawaii.edu</a>		
	Randal Singer, FLMNH, <a href="mailto:rsinger@flmnh.ufl.edu">rsinger@flmnh.ufl.edu</a>		
	Nicole Morgan, HBOI, FSU, <a href="mailto:nbmorgan11@gmail.com">nbmorgan11@gmail.com</a>		
	Brendan Roark, TAMU-CC, TAMU, <a href="mailto:broark@geos.tamu.edu">broark@geos.tamu.edu</a>		
	Les Watling, UH, UH, <a href="mailto:watling@hawaii.edu">watling@hawaii.edu</a>		
	Mike Ford, SS, NOAA, <a href="mailto:Michael.ford@noaa.gov">Michael.ford@noaa.gov</a>		
	Michael Parke, IRC, NOAA, <a href="mailto:Michael.Parke@noaa.gov">Michael.Parke@noaa.gov</a>		
	Charlotte Reid, NEU, <a href="mailto:c.seid@neu.edu">c.seid@neu.edu</a>		

**Purpose of the Dive**

This dive was located on the east side of a large rift zone ridge north of St. Rogatien Bank. The objectives of the dive were to survey a completely unexplored area, testing the hypothesis that high density communities of corals and sponges can be found on ridge topography. No previous dives have ever been conducted on this site. Discovery of high density communities would provide valuable new information to NOAA's Deep Sea Coral and Technology Program (DSCTP). The target start point of the dive was a relatively flat terrace located at a depth of 2168m, which transitioned into a steep slope at approximately 2100m. The plan was to survey up the steep slope to a final target depth of approximately 1900m, documenting in particular the abundance of corals and sponges.

**Description of the Dive:**

The ROV landed on a flat surface close to the slope at 2151m. The surface was covered by a dense aggregation of manganese nodules (2-5cm in diameter) that lay loosely on the bottom. Several unbranched corals, sponges and a stalked crinoid were observed at the landing site and there was no current. Approximately 30 minutes after the ROV reached the bottom, the ship lost its dynamic positioning and the ROV was pulled from the bottom for 15 minutes. Upon solving the problem, the ROV returned to the bottom and collected a sample of a possible cladorhizid sponge at 2152m. A field of manganese crusted boulders was observed upon moving up the slope, which was void of animals. Further up the slope at around 2100m, the density of animals increased somewhat and included corals, sponges and crinoids. A second biological sample, a black coral tentatively identified as *Heteropathes* cf. *pacifica*, was collected at 2128m. The density of animals remained moderately low until a depth of 2050m, when an increase of corals and sponges was observed. A manganese-crust basalt was collected at 2050m. As the ROV moved up the slope, both the density and diversity of animals increased with decreasing depth and distance to the ridge crest, with numerous species of gorgonians, black corals and sponges being recorded. An isidid coral, tentatively identified as belonging to the genus *Jasonisis* was collected at 1982m. The ROV was not able to reach the target end point on the top of the ridge at 1900m and had to leave the bottom at 1958m. The dive covered a distance of roughly 280m in a total bottom time of 5:45. Only a handful of fishes were observed during the dive.

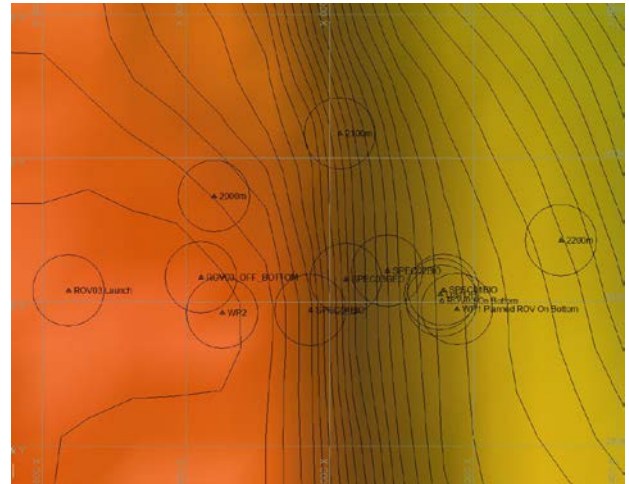
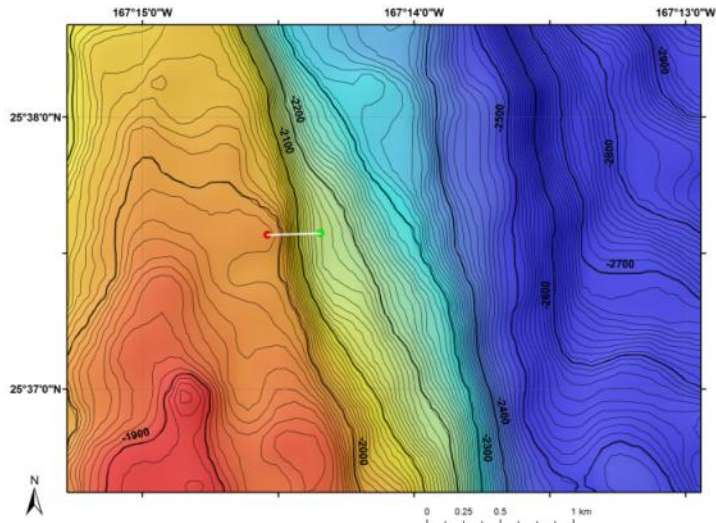
**Animals observed during the dive are listed below:**

Cnidarians	Gorgonians	Chrysogorgia geniculata
		Chrysogorgia pinnata?
		Chrysogorgiid sp. (unidentified)
		Narella? sp.
		Narella alata/musikae?
		Narella bowersi?
		Iridogorgia magnispiralis
		Lepidisis sp.
		Acanella weberi
		Unidentified unbranched isidid
		Unidentified branched isidids
		Forked Lepidisis sp.
		Isidella sp.?
		Isidella sp. Lyrate?
		Isidella trichotoma?
		Jasonisis? sp. (collected)
		Corallium spp.
		Paragorgia sp.
		Paragorgia coralloides
	Alcyonaceans	Anthomastus fisheri?
	Stoloniferans	Unidentified stoloniferan overgrowing sponge
	Scleractinians	Unidentified cup coral
	Antipatharians	Heteropathes cf. pacifica (collected)
		Heteropathes sp
		Bathypathes alternata
		Umbellapathes sp.
		Trissopathes sp.
		Parantipathes sp.
		Stauropathes sp.
	Actinarians	Sycionis? sp.
	Ceriantharians	Unidentified ceriantharian
	Corallimorpharians	Corallimorphus pilatus
	Zoanthid	Zoanthid overgrowing Paragorgia coralloides
	Hydrozoans	Hydromedusa

		Hydroids (on crinoid)
Sponges	Hexactinellids	Walteria sp?.
		Poliopogon sp. (various)
		Tretopleura sp.
		Farrea nr occa erecta
		Caulophacus sp.
		Bolosoma sp.
	Demosponges	Unidentified cladorhizid (collected)
		Unidentified cladorhizid
Echinoderms	Asteroids	Hypasteria muscipula
		Unidentified brisingid
		Unidentified asteroid
	Ophiuroids	Unidentified ophiuroids
	Crinoids	Unidentified hyocrinid
		Unidentified comatulid
		Glyptometra lateralis
		Proisocrinus ruberrimus
		Bathycrinus? sp.
		Sarametra triserialis
	Holothuria	Unidentified holothurian
Arthropods	Shrimp	Nematocarcinus tenuirostris
		Bathypalaemonella sp.
	Squat lobsters	Unidentified squat lobster
	Pycnogonids	Colossendeis sp. (with gastropods on arms)
Mollusks	Gastropods	Unidentified gastropods
Fishes	Macrourids	Nezumia sp.
	Eels	Unidentified ophidiid

**Overall Map of Dive Area**

**Actual track of ROV dive**

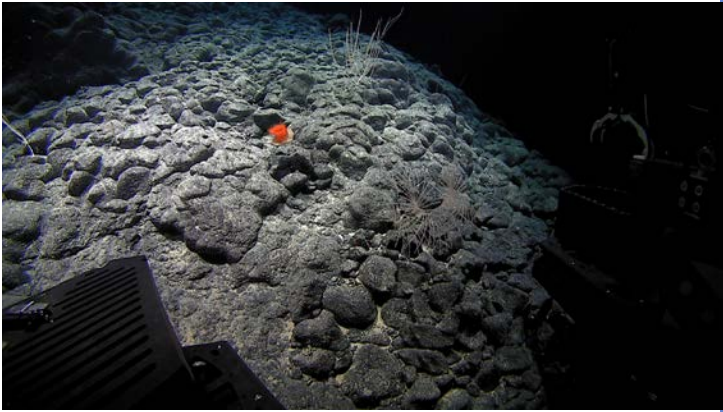


Bathymetry data for the dive site. Planned dive start and end points are shown as green and red dots, respectively.

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

**Representative Photos of the Dive**



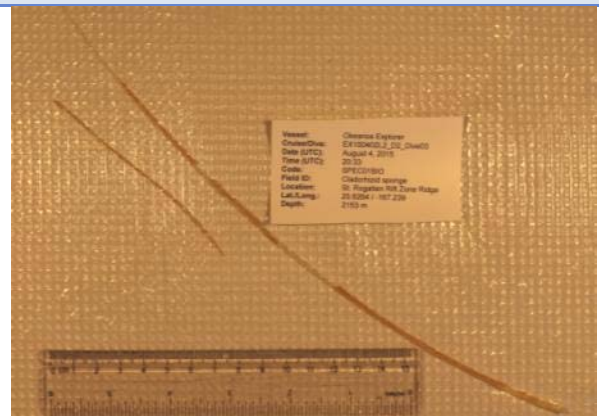


Anemone and corals observed on the survey up the slope of the ridge.

Coral and sponge community observed right at and over the ridge break in slope.

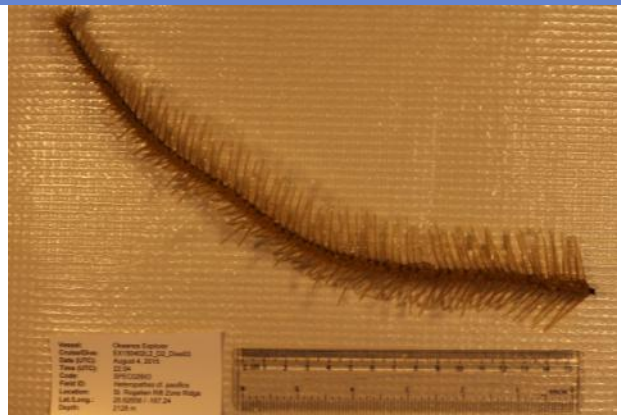
**Samples Collected**

<b>Sample ID</b>	EX1504L2_20150804203352_D2_Dive03_SPECO1BIO
<b>Date (UTC)</b>	2015/08/04
<b>Time (UTC)</b>	20:33:52
<b>Depth (m)</b>	2153
<b>Temperature (°C)</b>	1.83044
<b>Oxygen (mL/L)</b>	3.11054
<b>Field ID(s)</b>	cladorhizid sponge



**Comments** The fragile sponge specimen broke into several pieces in the laboratory.


<b>Sample ID</b>	EX1504L2_20150804220443_D2_Dive03_SPECO2BIO
<b>Date (UTC)</b>	2015/08/04
<b>Time (UTC)</b>	22:04:43
<b>Depth (m)</b>	2128
<b>Temperature (°C)</b>	1.87322
<b>Oxygen (mL/L)</b>	3.04564
<b>Field ID(s)</b>	<i>Heteropathes cf. pacifica</i>



**Comments** The sampled colony was branched, but the collected specimen does not contain any branches.

<b>Sample ID</b>	EX1504L2_20150804223938_D2_Dive03_SPECO3GEO
<b>Date (UTC)</b>	2015/08/04
<b>Time (UTC)</b>	22:39:38
<b>Depth (m)</b>	2050
<b>Temperature (°C)</b>	1.88453
<b>Oxygen (mL/L)</b>	2.96857
<b>Field ID(s)</b>	Mn-crusted basalt



<b>Comments</b>		
<b>Sample ID</b>	EX1504L2_20150804232851_D2_Dive03_ SPEC04BIO	
<b>Date (UTC)</b>	2015/08/04	
<b>Time (UTC)</b>	23:28:51	
<b>Depth (m)</b>	1981	
<b>Temperature (°C)</b>	2.00956	
<b>Oxygen (mL/L)</b>	2.78827	
<b>Field ID(s)</b>	<i>Jasonisis?</i> sp.	
<b>Comments</b>		
<b>Please direct inquiries to:</b>	NOAA Office of Ocean Exploration & Research 1315 East-West Highway (SSMC3 10 th Floor) Silver Spring, MD 20910 (301) 734-1014	