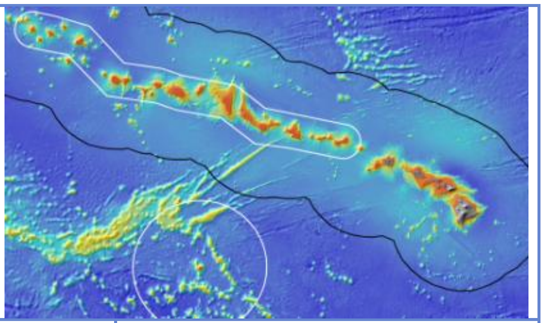
Site Name	Pioneer Bank Ridge		
ROV Lead/Expedition Coordinator	Karl McLetchie Kelley Elliott		
Science Team Leads	Chris Kelley (Biology) Daniel Wagner (Biology)		
General Area Descriptor	Northwestern Hawaiian Islands		
ROV Dive Name	Cruise Season	Leg	Dive Number
	EX1504	2	DIVE07
Equipment Deployed	ROV:	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 communications issues between the shore-based and shipboard science team. The conference call was dropped on a few occasions, as was the connection to the chat room. Additionally, the shore-based team reported having issues with the video freezing.		
ROV Dive Summary (From processed ROV data)	Dive Summary: EX1504L2_DIVE07 ^^ In Water at: 2015-08-08T18:16:43.218000 25°, 30.479' N ; 173°, 31.498' W Out Water at: 2015-08-09T00:35:17.781000 25°, 30.774' N ; 173°, 30.732' W Off Bottom at: 2015-08-08T23:28:57.859000 25°, 30.643' N ; 173°, 31.307' W On Bottom at: 2015-08-08T19:27:44.171000 25°, 30.448' N ; 173°, 31.318' W Dive duration: 6:18:34 Bottom Time: 4:1:13 Max. depth: 2118.4 m		
Special Notes			
Scientists Involved *(please provide name / location / affiliation / email)*	Abby Lapointe, UH, UH, abbylap@hawaii.edu Allen Andrews, Honolulu, HI, PIFSC, Allen.Andrews@noaa.gov Amy Baco-Taylor, HBOI ECC, FSU, abacotaylor@fsu.edu Andrea Quattrini, Pasadena, CA, USGS, aquattrini@usgs.gov Chris Kelley, EX,UH, ckelley@hawaii.edu Daniel Wagner, EX, PMNM, daniel.wagner@noaa.gov Diva Amon, UH, divaamon@hawaii.edu Les Watling, UH, UH, watling@hawaii.edu Michael Garcia, UH ECC, UH, mogarcia@hawaii.edu Michael Parke, Honolulu, HI, PIFSC, Michael.Parke@noaa.gov Nicole Morgan, HBOI ECC, FSU, nbmorgan11@gmail.com Scott France, ULL, ULL, france@louisiana.edu Steve Haddock, MBARI, MBARI, haddock@mbari.org Tina Molodtsova, SI (Washington, DC), PPSIO, tina@ocean.ru		

Purpose of the Dive

This dive was located on a sharp ridge extending to the south of Pioneer Bank. The objective of the dive was to survey the area below previous *Pisces* submersible dives on the ridge, in order to determine the lower depth limit of known communities of corals and sponges. The target start point of the dive was a relatively flat spot along the crest of the ridge at 2114m, which transitioned into a steep slope at 2100m. The plan was to move up the ridge from the south towards the north until a final target depth of 2000, documenting in particular the density of corals and sponges.

Description of the Dive:

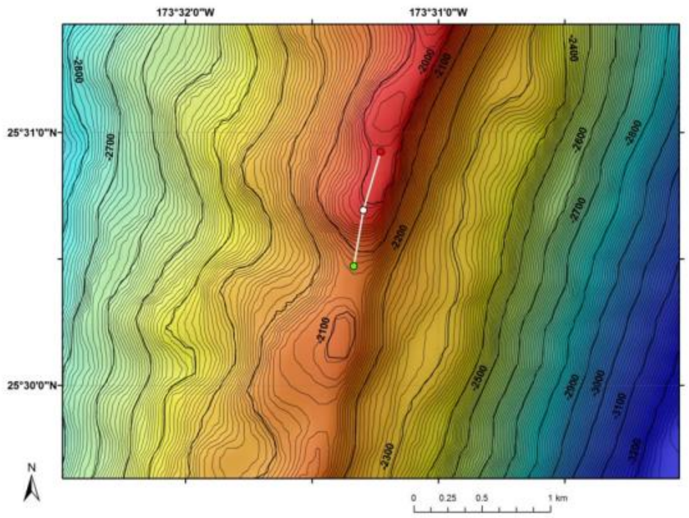
The ROV landed on the ridge crest as planned. There was a moderate current from the west towards the east. The density of animals was immediately high from the start and included numerous bamboo corals, black corals, primnoid corals and sponges. Unlike the previous dive, the dominant bamboo corals were branched and there was an absence of Acanthogorgia. This community also differed somewhat from the community observed further upslope. A Mn-crusted basalt sample, which had a cladorhizid sponge growing on it, was collected close to the landing site at 2083m. Shortly after, a *Corallium* sp. sample was collected at 2078m. Large fields of dead organic material that appeared to be barnacle plates were seen on several locations. As the ROV moved up the crest of the ridge, the density of animals increased and included numerous gorgonians, black corals and sponges. A second *Corallium* sp. sample, along with its commensal ophioroid, was collected at 2002m. Shortly before leaving the bottom, a Mn-crusted basalt sample, which had small hydroids growing on it, was collected at 2002m. The ROV left the bottom at a depth of 2000m after a total bottom time of 2:57h. While the dive was cut short in order to have enough time to transit to the next site, it definitely proved what we hoped it would prove, that the dense community seen by the submersible dives further upslope extended at least 6 kilometers down the ridge to where the dive was. This is clearly an important large, high density community of corals and sponges.

Animals observed during the dive are listed below:

Phylum	**Group**	**Species**
Annellida	Polychaetes	Polynoid
Arthropod	Crab	Lithodes nintokuae
Arthropods	Barnacles	Scalpellidae
Arthropods	Shrimp	Nematocarcinus tenuisrostris
Arthropods	Shrimp	Unidentified shrimp in water column
Arthropods	Squat lobster	Uroptychus sp
Arthropods	Pycnogonids	Pycnogonida
Cnidarians	Actiniarians	Exocoelactis sp.
Cnidarians	Actiniarians	Unidentifed anemone
Cnidarians	Actiniarians	Anthomastus sp.
Cnidarians	Antipatharians	Bathypathes alternata
Cnidarians	Antipatharians	Heteropathes cf. pacifica
Cnidarians	Antipatharians	Stauropathes staurocrada
Cnidarians	Antipatharians	Trissopathes sp.
Cnidarians	Antipatharians	Umbellapathes helioanthes
Cnidarians	Gorgonians	Calyptrophora angularis?
Cnidarians	Gorgonians	Chrysogorgia geniculata
Cnidarians	Gorgonians	Corallium cf. lauense
Cnidarians	Gorgonians	Corallium sp.
Cnidarians	Gorgonians	Corallium with sweeper tentacles (collected)
Cnidarians	Gorgonians	Iridogorgia magnispiralis
Cnidarians	Gorgonians	Iridogorgia bella
Cnidarians	Gorgonians	Isidella sp. lyrate
Cnidarians	Gorgonians	Keratoisis sp
Cnidarians	Gorgonians	Metallogorgia melanotrichos
Cnidarians	Gorgonians	Unbranched primnoid
Cnidarians	Gorgonians	Unidentified branched isidids
Cnidarians	Gorgonians	Unbranched isidids
Cnidarians	Hydrozoans	Aegina rosae? (Hydromedusa)
Cnidarians	Hydrozoans	Solitary hydroid
Cnidarians	Hydrozoans	Unidentified hydroids
Cnidarians	Pennatulaceans	Anthoptilum? sp.
Cnidarians	Zoanthid	Unidentified zoanthid overgrowing bamboo coral
Echinoderms	Asteroids	Hippasteria municepula
Echinoderms	Ophiuroids	Unidentified ophiuroids

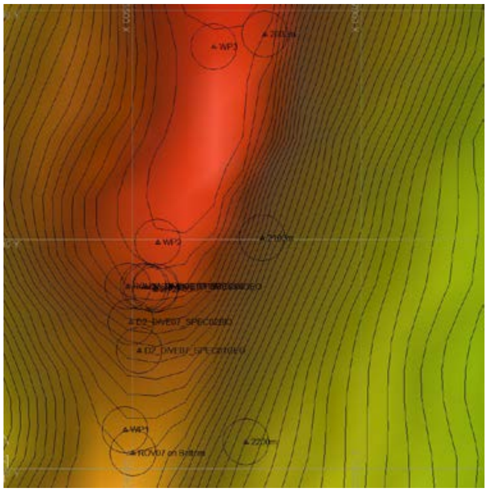
Fishes	Eels	Synaphobranchus affinis?
Fishes	Macrourids	Nezumia sp.
Fishes	Macrourids	Trachonurus/Malacocephalus
Sponges	Demosponges	Unidentified cladorhizid
Sponges	Hexactinellids	Bolosoma sp.
Sponges	Hexactinellids	Corbitella sp.
Sponges	Hexactinellids	Farrrea nr occa erecta
Sponges	Hexactinellids	Poliopogon sp.B
Sponges	Hexactinellids	Tretopleura sp.
Sponges	Hexactinellids	Atlantisella sp?

Overall Map of Dive Area



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

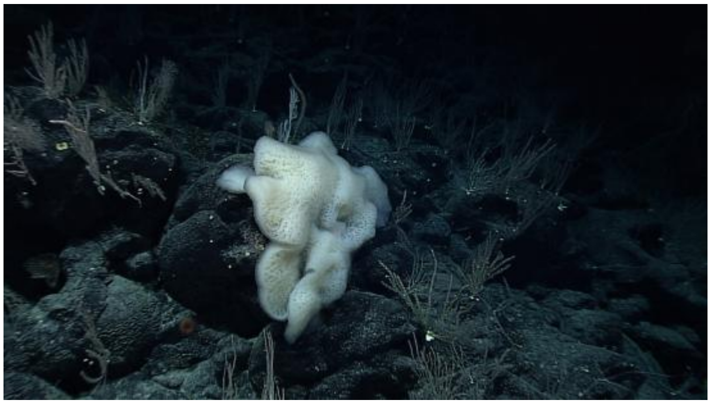
Actual track of ROV dive



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

Representative Photos of the Dive

Specimen of Corallium sp collected from the beautiful high density community encountered on the ridge crest.



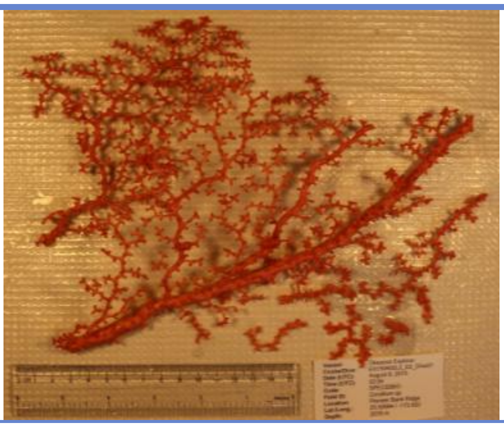
Unique hexactinellid (glass) sponge observed during the dive.

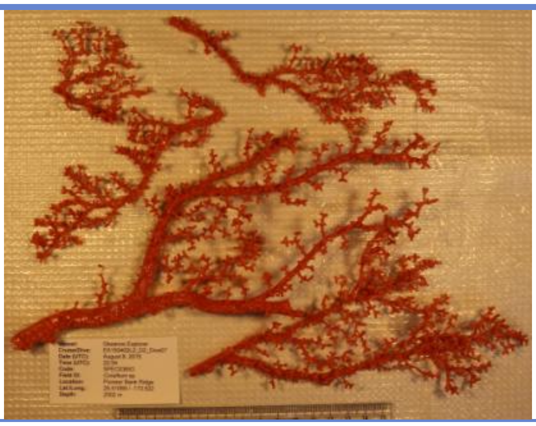
Samples Collected

Sample ID	EX1504L2_20150808210403_D2_Dive07_SPEC01GEO
Date (UTC)	2015/08/08
Time (UTC)	21:0403

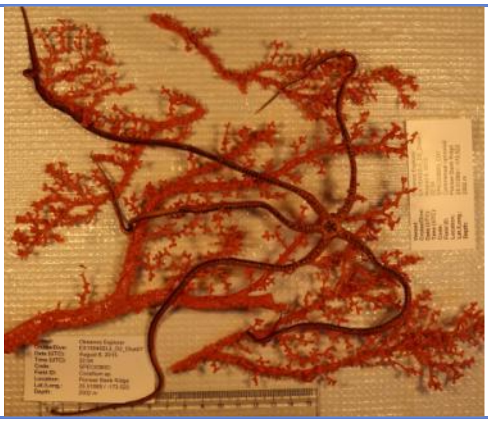
Depth (m)	2083	 Vessel: Okeanos Explorer Cruise/Dive: EX150402L2_D2_Dive07 Date (UTC): August 8, 2015 Time (UTC): 21:04 Code: SPEC01GEO Field ID: Mn-crusted basalt Location: Pioneer Bank Ridge Lat./Long.: 25.50939 / -173.522 Depth: 2083 m
Temperature (^{o}C)	1.93961	
Oxygen (mL/L)	2.92061	
Field ID(s)	Mn-crusted basalt	
Comments	Cladorhizid sponge was attached to the collected rock.	

Sample ID	EX1504L2_20150808210403_D2_Dive07_SPEC01GEO_C01	 Vessel: Okeanos Explorer Cruise/Dive: EX150402L2_D2_Dive07 Date (UTC): August 8, 2015 Time (UTC): 21:04 Code: SPEC01GEO_C01 Field ID: Cladorhizid sponge Location: Pioneer Bank Ridge Lat./Long.: 25.50939 / -173.522 Depth: 2083 m
Date (UTC)	2015/08/08	
Time (UTC)	21:0403	
Depth (m)	2083	
Temperature (^{o}C)	1.93961	
Oxygen (mL/L)	2.92061	
Field ID(s)	Cladorhizid sponge	
Comments	Sponge was attached to collected rock.	

Sample ID	EX1504L2_20150808220415_D2_Dive07_SPEC02BIO	
Date (UTC)	2015/08/08	
Time (UTC)	22:04:15	
Depth (m)	2078	
Temperature (^{o}C)	1.8834	
Oxygen (mL/L)	2.98181	
Field ID(s)	Corallium sp.	
Comments	The Corallium sp. colony from which the sample was collected had a commensal ophioroid that was not collected.	

Sample ID	EX1504L2_20150808225413_D2_Dive07_SPEC03BIO	
Date (UTC)	2015/08/08	
Time (UTC)	22:54:13	
Depth (m)	2002	
Temperature (^{o}C)	1.89704	
Oxygen (mL/L)	2.97449	
Field ID(s)	Corallium sp.	
Comments	Sampled colony had elongate tentacles on its polyps (sweeper tentacles), as well as a commensal ophioroid and commensal hydroids that were also sampled.	

Sample ID	EX1504L2_20150808225413_D2_Dive07_SPEC03BIO_C01	

Date (UTC)	2015/08/08	
Time (UTC)	22:54:13	
Depth (m)	2002	
Temperature (°C)	1.89704	
Oxygen (mL/L)	2.97449	
Field ID(s)	Commensal ophioroid	
Comments	Ophioroid was attached to samples Corallium sp. colony	

Sample ID	EX1504L2_20150808221634_D2_Dive07_SPEC04GEO	
Date (UTC)	2015/08/08	
Time (UTC)	22:16:34	
Depth (m)	2001	
Temperature (°C)	1.90932	
Oxygen (mL/L)	2.9212	
Field ID(s)	Mn-crusted basalt	
Comments	Hydroids were attached to the collected rock.	

Sample ID	EX1504L2_20150808221634_D2_Dive07_SPEC04GEO_C01	
Date (UTC)	2015/08/08	
Time (UTC)	22:16:34	
Depth (m)	2001	
Temperature (°C)	1.90932	
Oxygen (mL/L)	2.9212	
Field ID(s)	Hydroids on rock	
Comments	Hydroids were attached to the collected rock.	

Please direct inquiries to:	NOAA Office of Ocean Exploration & Research 1315 East-West Highway (SSMC3 10th Floor) Silver Spring, MD 20910 (301) 734-1014