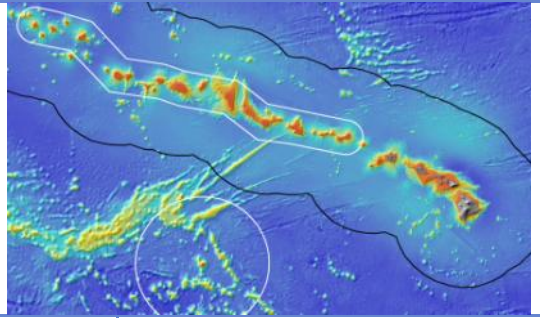


OKEANOS EXPLORER ROV DIVE SUMMARY

Site Name	Salmon Bank Southeast 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	DIVE10
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	There were only few communications issues between the shore-based and shipboard science team. Other than that, all other equipment worked properly.		
ROV Dive Summary (From processed ROV data)	Dive Summary: EX1504L2_DIVE10 ~~~~~		
	In Water at:	2015-08-11T18:19:19.390000 26°, 49.084' N ; 176°, 18.984' W	
	Out Water at:	2015-08-12T02:24:49.890000 26°, 48.928' N ; 176°, 18.748' W	
	Off Bottom at:	2015-08-12T01:10:49.968000 26°, 49.149' N ; 176°, 18.993' W	
	On Bottom at:	2015-08-11T19:32:25.234000 26°, 48.969' N ; 176°, 18.843' W	
	Dive duration:	8:5:30	
	Bottom Time:	5:38:24	
	Max. depth:	2052.5 m	
Special Notes			
Scientists Involved (please provide name / location / affiliation / email)	Abby Lapointe, UH, UH, abbylap@hawaii.edu Allen Andrews, IRC, NOAA, Allen.Andrews@noaa.gov Amanda Ziegler, UH, UH, aziegler802@gmail.com Amy Baco-Taylor, HBOI, FSU, abacotaylor@fsu.edu Andrea Quattrini, Pasadena, CA, USGS, aquattrini@usgs.gov Astrid Leitner, UH, UH, aleitner@hawaii.edu Brendan Roark, TX, TAMU-CC, broark@geos.tamu.edu Bruce Mundy, IRC, NOAA, bruce.mundy@noaa.gov Chris Kelley, EX, UH, ckelley@hawaii.edu Chris Mah, SI, SI, mahch@si.edu Daniel Wagner, EX, PMNM, daniel.wagner@noaa.gov Diva Amon, UH, UH, divaamon@hawaii.edu Espirit Saucier, LSU, LSU, heestand.saucier@louisiana.edu Jeff Drazen, UH, UH, jdrazen@hawaii.edu Jonathan Tree, UH, UH, jtree@hawaii.edu Les Watling, Maine, UH, watling@hawaii.edu Mackenzie Garringer, UH, UH, mgerring@hawaii.edu Michael Parke, IRC, NMFS, Michael.Parke@noaa.gov Nicole Morgan, HBOI, FSU, nbmorgan11@gmail.com Randal Singer, FL, FLMNH, rsinger@flmnh.ufl.edu		

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Purpose of the Dive

This dive was located on a ridge that extends to the southeast of Salmon Bank. The objectives were to survey a completely unexplored area for corals and sponges, testing the hypothesis that high density communities can be found on ridge topography. No previous dives have ever been conducted on this site. Discovery of high density communities would provide valuable information to NOAA's Deep Sea Coral and Technology Program (DSCTP) and to PMNM. The target start point of the dive was on a slope of the ridge at a depth of 2123m. The ROV would then survey up the slope of the ridge to a small summit at a final target depth of 1806m, surveying in particular for the presence of deep-sea corals and sponges.

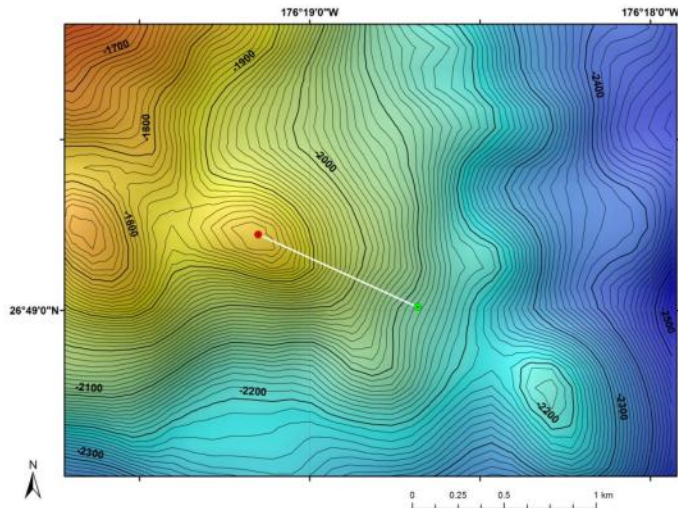
Description of the Dive:

The ROV landed on a Mn-crusted, sloped surface covered with rubble and sediment at 2052m. The sediment appeared to be composed of dead barnacle plates. There was a slight current from the east towards the west and a moderate density of sponges and corals. As the ROV moved up the slope of the ridge, the density of animals increased substantially around at 2000m, including numerous sponges and corals. A Mn-crusted basalt sample was collected at 1955m. Shortly thereafter, a Chrysogorgid specimen, along with its commensal squat lobster and amphipod, were collected at 1939m. The ROV kept moving up the slope following a narrow region along the ridge, which had a higher density of animals. A sponge sample, which had a commensal cnidarian growing all over its tissues, was collected at 1880m. At 1882m, there was another evident increase in the density of animals, coinciding with the ROV moving over to the western side of the ridge. There was a substantial current from the northeast towards the southwest. A Plexaurid coral sample, which had a commensal ophiuroid on it, was collected close to the end of the dive at 1849m. The ROV left the bottom at a depth of 1849m after a total bottom time of 5:44h, having covered a linear distance of approximately 550m. Several fishes were observed during the dive.

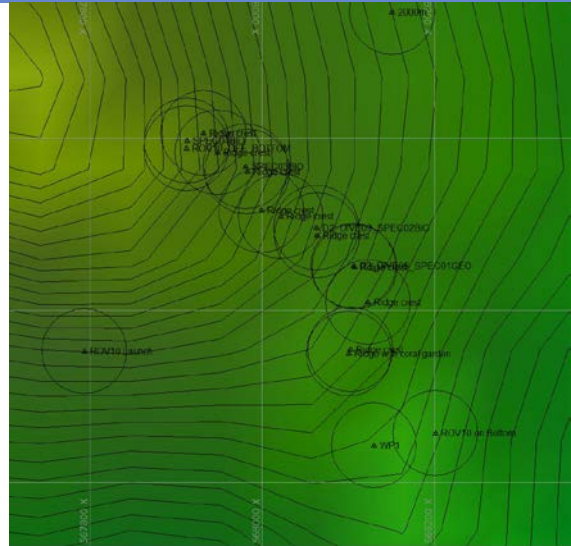
Animals observed during the dive are listed below:

Phylum	Group	Species
Arthropod	Crab	Hermit crab with symbiotic anemone
Arthropods	Barnacles	Alcockianum alcockianum
Arthropods	Shrimp	Aristeidae
Arthropods	Shrimp	Decapod shrimp
Arthropods	Shrimp	Mysid
Arthropods	lobsters	Polychelidae
Arthropods	Squat lobsters	Munidopsis sp.
Cnidarians	Actinarians	Exocoelactis sp.
Cnidarians	Actinarians	Hormathiidae
Cnidarians	Actinarians	Unidentified anemone
Cnidarians	Alcyonaceans	Anthomastus sp.
Cnidarians	Alcyonaceans	Stoloniferous octocoral
Cnidarians	Antipatharians	Trissopathes sp.
Cnidarians	Gorgonians	Acanthogorgia sp.
Cnidarians	Gorgonians	Candidella gigantea
Cnidarians	Gorgonians	Chrysogorgia averta?
Cnidarians	Gorgonians	Chrysogorgia geniculata
Cnidarians	Gorgonians	Chrysogorgia sp.
Cnidarians	Gorgonians	Chrysogorgia stellata
Cnidarians	Gorgonians	Corallium sp.
Cnidarians	Gorgonians	Isidella sp.
Cnidarians	Gorgonians	Jasonisis sp.
Cnidarians	Gorgonians	Metallogorgia melanotrichos
Cnidarians	Gorgonians	Paracalyptrophora/Candidella/Parastenella sp.
Cnidarians	Gorgonians	Paragorgia sp.
Cnidarians	Gorgonians	Plexauridae sp.
Cnidarians	Gorgonians	Unbranched isidids

Cnidarians	Hydrozoans	Aegina? sp.
Cnidarians	Hydrozoans	Coronatae
Cnidarians	Pennatulaceans	Anthoptilum grandiflorum?
Cnidarians	Zoanthid	Bullagummizoanthus sp.
Cnidarians	Zoanthid	Unidentified zoanthid overgrowing Paragorgia
Ctenophores	Ctenophores	Benthic ctenophore
Echinoderms	Asteroids	Brisingid
Echinoderms	Asteroids	Calliaster pedicillaris
Echinoderms	Asteroids	Evoplosoma sp.
Echinoderms	Asteroids	Pteraster sp.
Echinoderms	Asteroids	Solasteridae?
Echinoderms	Crinoids	Unidentified comatulids
Echinoderms	Holothuria	Hansenothuria benti
Echinoderms	Holothuria	Holothurians
Echinoderms	Ophiuroids	Euryalid
Echinoderms	Ophiuroids	Unidentified ophiuroids
Fishes	Eel-like	Aldrovandia phalacra
Fishes	Macrourids	Bassozetus cf. nasus
Fishes	Macrourids	Bassozetus sp.
Fishes	Macrourids	Ophidiid
Fishes	Macrourids	Trachonurus/Malacocephalus
Fishes	Slime head	Rouleina? Sp
Mollusks	Gastropods	Aplocophoran
Mollusks	Gastropods	Chiton
Mollusks	Gastropods	Gastropod
Sponges	Hexactinellids	Bolosoma sp.
Sponges	Hexactinellids	Caulophacus (Oxydiscus) sp.
Sponges	Hexactinellids	Euretinae sp.
Sponges	Hexactinellids	Farrrea nr occa erecta
Sponges	Hexactinellids	Poliopogon sp.
Sponges	Hexactinellids	Tretopleura sp.
Sponges	Hexactinellids	Walteria cf. leuckarti
Tunicate	Ascidacea	Megalodicopia? sp.
Overall Map of Dive Area		Actual track of ROV dive

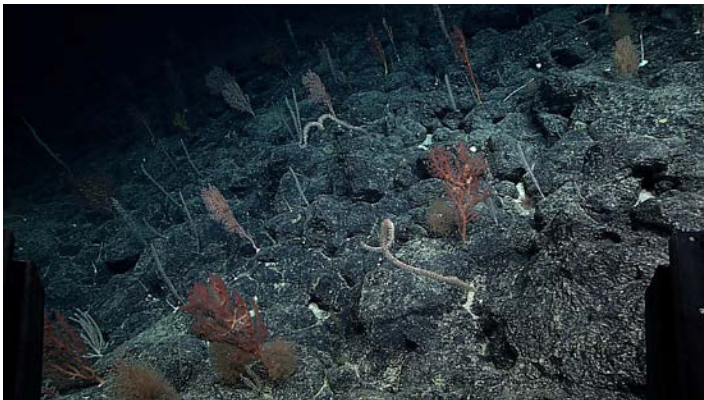


Bathymetry data for the dive site. Planned dive start and end points are shown as green and red dots, respectively.



Hypack screen grab showing waypoints dropped during actual ROV dive.

Representative Photos of the Dive



Beautiful coral and sponge community observed during the dive, made more colorful by the large numbers of bubblegum coral (*Paragorgia* sp) and *Corallium* sp.



Unusual sponge identified only to subfamily euretinae that was collected during the dive. This sponge is a potential new species.




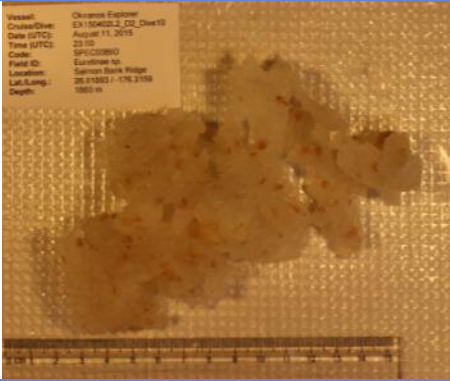

Samples Collected


Sample ID	EX1504L2_20150811215831_D2_Dive10_SPEC0GEO
Date (UTC)	2015/08/11
Time (UTC)	21:58:31
Depth (m)	1955
Temperature (°C)	2.01206
Oxygen (mL/L)	2.59678
Field ID(s)	Mn-crusted rock



Comments

Sample ID	EX1504L2_20150811223908_D2_Dive10_SPEC02BIO
Date (UTC)	2015/08/11
Time (UTC)	22:39:08
Depth (m)	1939

Temperature (°C)	2.01989	
Oxygen (mL/L)	2.55936	
Field ID(s)	Chrysogorgia averta?	
Comments	The coral sample collected had a commensal squid lobster and amphipod that were also collected	
Sample ID	EX1504L2_20150811223908_D2_Dive10_SPEC02BIO_C01	
Date (UTC)	2015/08/11	
Time (UTC)	22:39:08	
Depth (m)	1939	
Temperature (°C)	2.01989	
Oxygen (mL/L)	2.55936	
Field ID(s)	Commensal squat lobster	
Comments	The coral sample collected had a commensal squat lobster that was also collected	
Sample ID	EX1504L2_20150811223908_D2_Dive10_SPEC02BIO_C02	
Date (UTC)	2015/08/11	
Time (UTC)	22:39:08	
Depth (m)	1939	
Temperature (°C)	2.01989	
Oxygen (mL/L)	2.55936	
Field ID(s)	Commensal amphipod	
Comments	The coral sample collected had a commensal amphipod that was also collected	
Sample ID	EX1504L2_20150811235013_D2_Dive10_SPEC03BIO	
Date (UTC)	2015/08/11	
Time (UTC)	23:50:13	
Depth (m)	1880	
Temperature (°C)	2.03611	
Oxygen (mL/L)	2.56827	
Field ID(s)	Euretinidae sp.	
Comments	Sponge collected had commensal cnidarians and amphipods which were also collected. The commensal cnidarians were not separated out; they were placed in same vial as sponge.	
Sample ID	EX1504L2_20150812010728_D2_Dive10_SPEC04BIO	
Date (UTC)	2015/08/12	
Time (UTC)	01:07:28	

Depth (m)	1848		
Temperature (°C)	1.983		
Oxygen (mL/L)	2.65266		
Field ID(s)	Plexauridae sp.		
Comments	Coral collected had commensal ophiroid that was also collected		
Sample ID	EX1504L2_20150812010728_D2_Dive10_ SPEC04BIO_C01		
Date (UTC)	2015/08/12		
Time (UTC)	01:07:28		
Depth (m)	1848		
Temperature (°C)	1.983		
Oxygen (mL/L)	2.65266		
Field ID(s)	Commensal ophiroid		
Comments	Collected from Plexaurid coral		
Please direct inquiries to:	NOAA Office of Ocean Exploration & Research 1315 East-West Highway (SSMC3 10 th Floor) Silver Spring, MD 20910 (301) 734-1014		