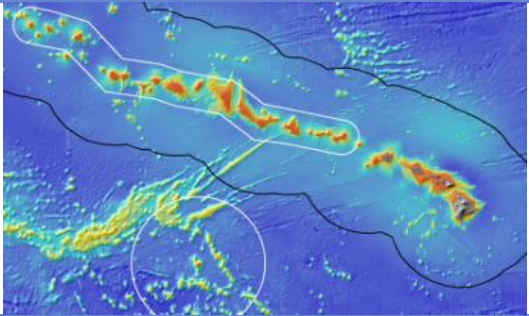


OKEANOS EXPLORER ROV DIVE SUMMARY

Site Name	Swordfish Seamount		
ROV Lead/Expedition Coordinator	Brian Bingham Kelley Elliott		
Science Team Leads	Frank Parrish (Biology) Christopher Kelley (Biology)		
General Area Descriptor	Main Hawaiian Islands		
ROV Dive Name	Cruise Season	Leg	Dive Number
	EX1504	3	DIVE05
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	Minor video and audio issues for shore side teams.		
ROV Dive Summary (From processed ROV data)	Dive Summary: EX1504L3_DIVE05 ~~~~~		
	In Water:	2015-09-01T18:21:54.968000 18°, 18.684' N ; 158°, 27.399' W	
	Out Water:	2015-09-02T02:26:53.250000 18°, 18.690' N ; 158°, 27.203' W	
	Off Bottom:	2015-09-02T01:50:26.796000 18°, 18.351' N ; 158°, 27.271' W	
	On Bottom:	2015-09-01T18:59:45.453000 18°, 18.754' N ; 158°, 27.332' W	
	Dive duration:	8:4:58	
	Bottom Time:	6:50:41	
	Max. depth:	1077.2 m	
Special Notes			
Scientists Involved (please provide name / location / affiliation / email)	Frank Parrish, EX, NOAA, Frank.Parrish@noaa.gov Chris Kelley, EX, UH, ckelley@hawaii.edu Amy Baco-Taylor, FL, FSU, abacotaylor@fsu.edu Asako Matsumoto, Japan, CIT, amatsu@gorgonian.jp Chris Mah, DC, SI, mahch@si.edu Nicole Morgan, FL, FSU, nbmorgan11@gmail.com Scott France, LA, ULL, france@louisiana.edu Tina Molodtsova, Portugal, PPSIO, tina@ocean.ru Rachel Bassett, SC, DSCRTP, rachel.bassett@noaa.gov Brendan Roark, TX, TAMU, broark@geos.tamu.edu Michael Garcia, UH ECC, UH, mogarcia@hawaii.edu Bruce Mundy, IRC ECC, PIFSC, bruce.mundy@noaa.gov Andrea Quattrini, CA, USGS, aquattrini@usgs.gov Mike Ford, MD, NMFS, Michael.ford@noaa.gov John Smith, UH ECC, UH, jrsmith@hawaii.edu		

Purpose of the Dive

This was the first dive ever conducted on Swordfish Seamount located in the Geologist Seamounts group. The objective of this dive was to survey the ridge shaped summit for corals and sponges, testing the hypothesis that high density communities can be found on ridge topography. Discovery of high density communities at this dive site will provide valuable information to NOAA's Deep Sea Coral

and Technology Program (DSCTP). The dive plan was to survey the upper crest at a depth of approximately 1000m, which is within the Hawaii's oxygen minimum zone although the islands don't quite reach the strict definition of below 0.5 ml/l to be an OMZ. The survey employed the standard methodology of the D2 with the objectives of 1) making observations and collecting video and 2) collecting rock and biological samples.

Description of the Dive:

All of the dive objectives were completed. The full planned distance of the dive track was achieved and exceeded for a total distance of 800 m travel. The dive started on the west flank of the ridge at 1071m where very few animals were encountered. The ROV then proceeded to the crest, still seeing low abundance. A pinnacle feature was present on the ridge crest and as the ROV proceeded up the northern slope of the pinnacle to its summit at 954m, a high density coral community was encountered. As the ROV came over the summit and proceeded down the southern side to a depth of 1074m, abundance again decreased. A basalt rock was collected at the start point of the survey and an unknown white rock and a basalt rock were collected at the summit. In total 3 biological samples (a mushroom coral, a scleractinian coral, and a sponge) were collected.

Animals observed during the dive are listed below.

Cnidarians:

Corallium kishinouyei
Hemicorallium c.f. lauense
Acanthogorgiidae
Enallopsammia rostrata
Cerianthidae red
Scleractinian single polyp
Victorgorgia nuttingi
Primnoid
Isididae unbranched
Plexauridae various
Anthomastus sp. red
Calyptrophora wyvillei
Madrepora? sp
Clavularia sp
Anthomuricea tenuispina
Paragorgia sp
Narella alata
Actinoscyphia sp
Metallogorgia melanotrichos

Sponges

Hexactinellida
Farrea sp3 nr occa erecta
Bathydorus sp.
Dictyaulus cf starmeri
Tretopleura sp

Echinoderms

Sperosoma obscurum
Tarsastrocles verrilli
Asthenactis papyraceus
Myxasteridae sea star
Hippasteria lateralis
Caenopedina sp?
Pedinidae
Ophiuroids
Glyptometra lateralis

Arthropods

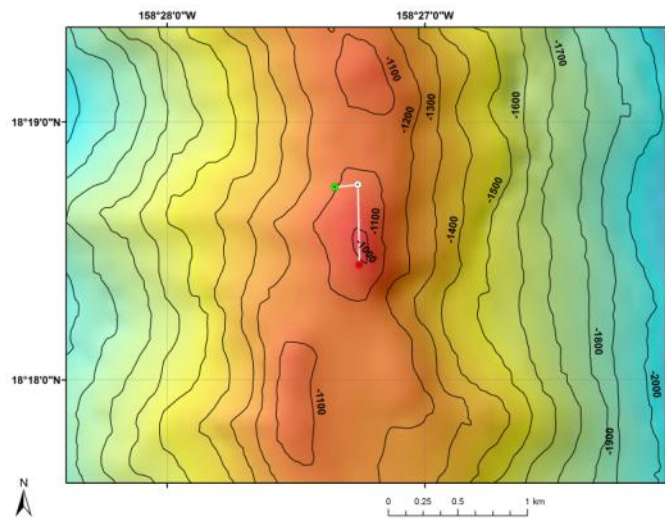
Heterocarpus laevigatus
Amphipods
Munida squat lobster
Nematocarcinus tenuirostris
Lamoha williamsi
Homeryon asper?

Fishes

Ophidiidae
 Ogocephalidae batfish
 Sladenia remiger
 Synphabranichid / Histobranichus eel
 Unidentified eel in water column

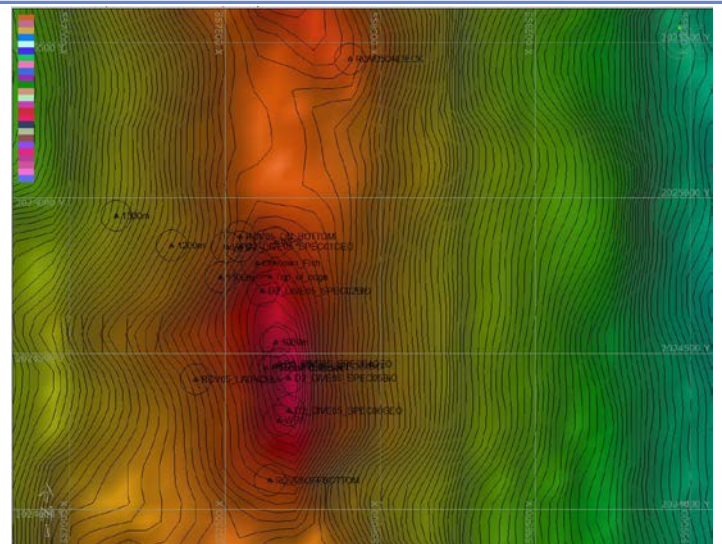
Other
 Polychaete

Overall Map of ROV Dive Area



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

Close-up Map of Main Dive Site

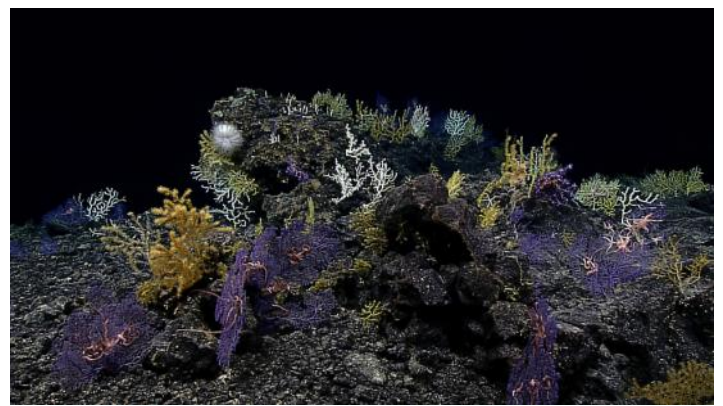


Hypack screen grab showing waypoints dropped during actual ROV dive.

Representative Photos of the Dive






Collecting a rock along the flank of the ridge crest where very few animals were observed.

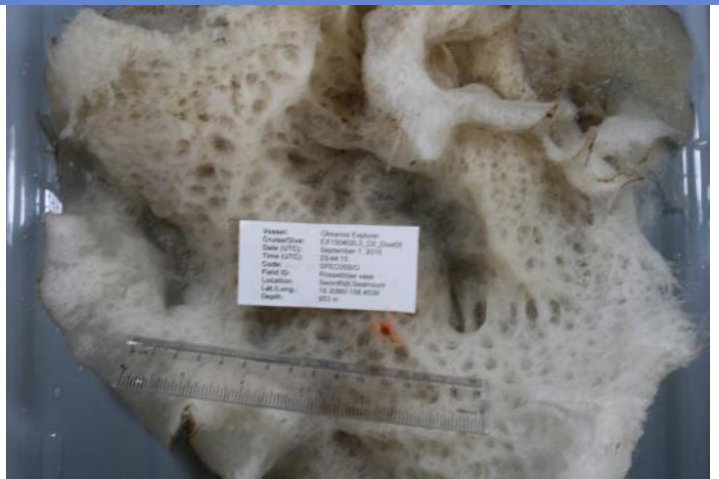



High density coral community encountered as the ROV proceeded up the slope of a pinnacle feature located on the ridge crest.

Samples Collected

Sample ID	EX1504L3_D2_DIVE05_SPEC01GEO	
Date (UTC)	September 1, 2015	
Time (UTC)	19:17:27	
Depth (m)	1071	
Temperature (°F)	3.69	
Field ID(s)	Basalt sample w/ commensals	
Comments		
Sample ID	EX1504L3_D2_DIVE05_SPEC02BIO	
Date (UTC)	September 1, 2015	
Time (UTC)	20:43:48	
Depth (m)	1013	
Temperature (°F)	3.93	
Field ID(s)	Anthomastus sp.	
Comments		
Sample ID	EX1504L3_D2_DIVE05_SPEC03BIO	
Date (UTC)	September 1, 2015	
Time (UTC)	22:34:00	
Depth (m)	970	
Temperature (°F)	N/A	
Field ID(s)	Madrepora sp	

Comments	Server was down so no environmental data accompanies this record. Depths and positions manually acquired from monitor displays.
Sample ID	EX1504L3_ D2_DIVE05_SPEC04GEO
Date (UTC)	September 1, 2015
Time (UTC)	22:45:05
Depth (m)	969
Temperature (°F)	4.01
Field ID(s)	Carbonate?
Comments	Some type of white conglomerate.
Sample ID	EX1504L3_ D2_DIVE05_SPEC05BIO
Date (UTC)	September 1, 2015
Time (UTC)	23:44:15
Depth (m)	953
Temperature (°F)	4.34
Field ID(s)	Rossellidae vase
Comments	



Sample ID	EX1504L3_D2_DIVE05_SPEC06GEO	
Date (UTC)	September 2, 2015	
Time (UTC)	0:18:27	
Depth (m)	973	
Temperature (°F)	4.33	
Field ID(s)	Basalt	
Comments		
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	