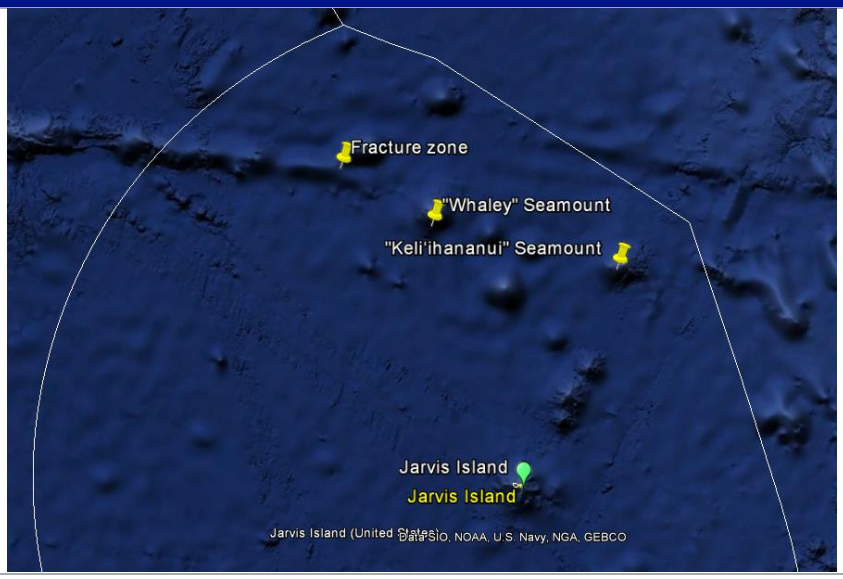
Ocean Exploration and Research

Okeanos Explorer ROV Dive Summary

Dive Information	
General Location	
General Area Descriptor	Jarvis Islands Unit of PRIMNM
Site Name	“Whaley” seamount (proposed name)
Science Team Leads	Scott France/ Del Bohnenstiehl
Expedition Coordinator	Kasey Cantwell
ROV Dive Supervisor	Bobby Mohr
Mapping Lead	Mike White
ROV Dive Name	
Cruise	EX1705
Leg	-
Dive Number	DIVE 07
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 5

Equipment Malfunctions

LSS sensor on Seirios was not functional.

ROV Dive Summary (from processed ROV data)

Dive Summary: EX1705_DIVE07

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In Water:	2017-05-07T19:34:14.943000 01°, 04.899' N ; 161°, 17.642' W
Out Water:	2017-05-08T03:46:40.016000 01°, 04.782' N ; 161°, 16.724' W
Off Bottom:	2017-05-08T03:00:45.090000 01°, 04.686' N ; 161°, 17.203' W
On Bottom:	2017-05-07T20:32:21.195000 01°, 04.941' N ; 161°, 16.954' W
Dive duration:	8:12:25
Bottom Time:	6:28:23
Max. depth:	1103.1 m

Special Notes

Some time was lost during the Dive when a twist developed in the tether between D2 and Seirios.

Scientists Involved (please provide name, location, affiliation, email)

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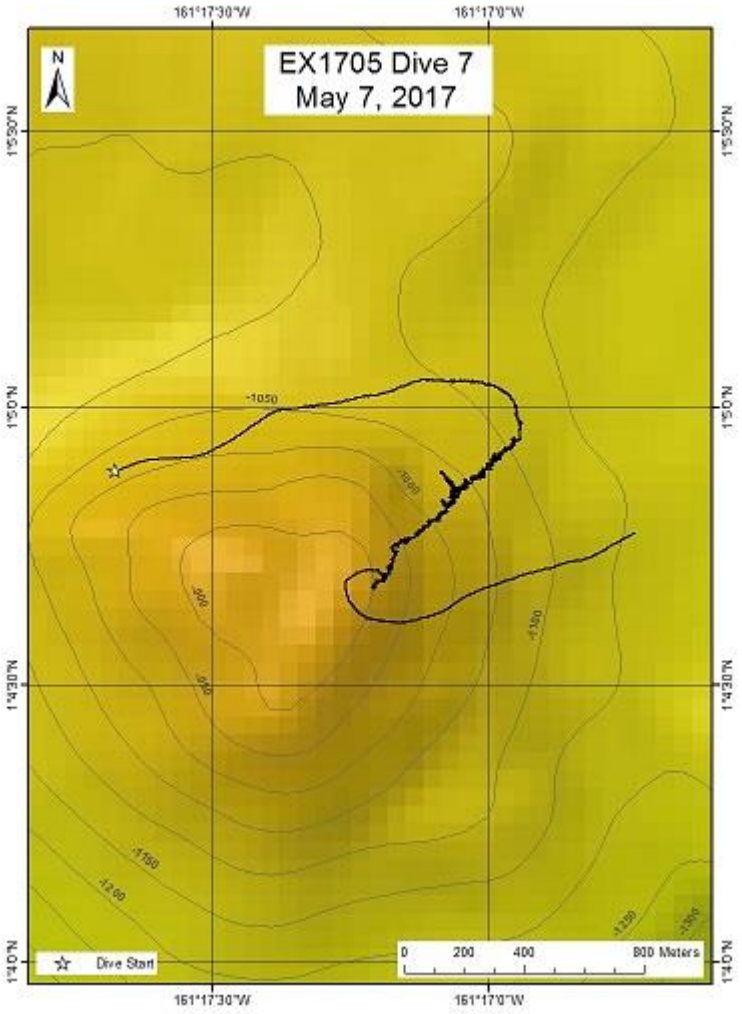
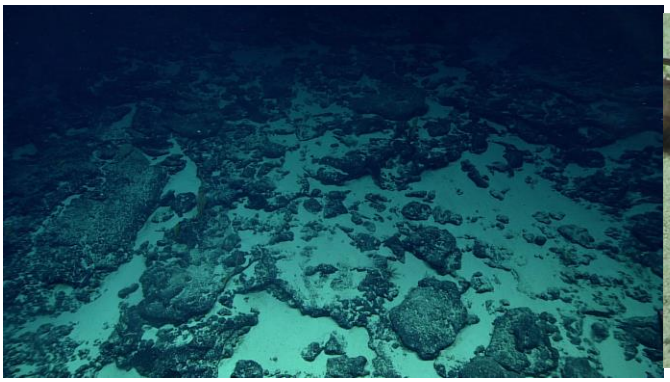
Purpose of the Dive	This dive will investigate the distribution and abundance of benthic fauna, map substrate composition in order to evaluate the relationship between faunal communities and substrate type, collect rock and crust samples to determine their geological and geochemical properties.		
	Whaley seamount has a flat-summit region at a depth of 1100 m, with several small cones extending from this upper surface. The ROV traversed along the northern side of the largest of these cones, reaching its local peak at 800 m depth. The seafloor in this area has light-colored biogenic sediments interspersed with out-crops of rock having extensive Mn-crusts. Symmetric ripples, aligned approximately N-S, were present in the more sedimented areas throughout the dive. Given the relatively shallow depth of the summit and its		

Dive Summary	overall morphology, these Mn-crusts are likely covering a carbonate reef material formed when the summit of the seamount was at shallower depths. One sample of the Mn-crusted rock was collected (D2_DIVE07_SPEC02); the absence of a rock hammer on the ship prevents further inspection at this time. The landing spot was heavily sedimented and rippled; several fish were seen (see below) and a sea pen (Chunellidae?) that had not previously been observed on the expedition. Rock outcrops provided habitat to crinoids, demosponges, long-armed galatheid crabs (Munidopsidae), ?murex snails, Primnoidae (*Narella* with asteroschematids,), and *Paramuricea* (with asteroschematids). Extensive sediment was replaced by dominance of exposed rock as we headed up the slope of the cone. Corals observed on the slope: *Pleurocorallium* ?*kishinouyei* with aplacophoran at its base, *Chrysogorgia* spp., more *Paramuricea* (with asteroschematids), many colonies of an unidentified biflabellate primnoid (which we believe was collected on EX1703), clavulariid ribbon coral, unidentified plexaurid fans, bottlebrush *Chrysogorgia* (with chirostylid crabs), *Iridogorgia*; scleractinians - white *Enallopsammia*; and black corals *Hexapathes*. Sponge observations included glass sponges *Regadrella* and *Caulophacus*, and carnivorous demosponges (Cladorhizidae). Other notable biological observations were corallimorpharians, pagurid crabs, and myxasterid seastars (*Asthenactis*). Further upslope sediments once again dominated; sea pens (*Pennatula*), comatulid crinoids, asteroid seastars, tripod fish (*Bathypterois atricolor*), stalked spheronematid sponge and xenophyophores were notable. As rock outcrops again became common, fauna included large stalked crinoids (Proisocrinidae); *Metallogorgia*; many *Paramuricea* seafans (with asteroschematids) and acanthogorgiids, which could be distinguished by the absence of large asteroschematids on the latter; *Narella* (with asteroschematids); *Victorgorgia* (with aplacophorans at the base of one colony); *Rhodaniridogorgia* (sampled); *Chrysogorgia*; *Anthomastus*; *Enallopsammia*; *Relicanthus* anemone; interesting blue-colored encrusting lobate sponges; and holothurians in intermittent sediment patches. At 1028 meters we got excellent imagery of a hatchetfish a meter or 2 off the bottom. We began making frequent observations of carrier crabs (Homolidae) on the biflabellate primnoids. At 1015 m we began to observe large geryonid crabs. At 949 m we saw two colonies of soft corals (Nephtheidae), the only true soft corals we have observed on the expedition, and no others were observed on this dive. At about 916 m depth we began seeing white *Eunicella* fans, and they became fairly abundant as we approached the top of the cone feature. Closer to the summit *Madrepora* corals were seen, as well as previously unseen (on the dive) species of squat lobsters, sponges, and *Parantipathes* black coral. At the summit crest we saw a large school of oreos (Oreosomatidae) and diverse

	and abundant corals. A large, mounding demosponge growing around a *Madrepora* colony generated much interest, and a fragment was collected. It was an excellent dive, especially for diversity of fishes, with 14 different families observed: Macrouridae (rattails), Ogcocephalidae (batfishes), Halosauridae (halosaurs), Ipnopidae (tripod fishes), Oreosomatidae (oreos), Lophiidae (goosefishes), Congridae (conger eels), Synaphobranchidae (2/3 subfamilies Synaphobranchinae and Illyophinae), Somniosidae, Bythitidae, Ophidiidae, Sternoptychidae, Gonostomatidae, and one unidentified family. The most abundant were probably the conger eels and oreos, but the biggest stars of the day were a Pacific Sleeper Shark (*Somniosus pacificus*) - possibly only the 4th time this species has ever been recorded alive – and several batfish and goosefish, which are generally considered rare, but we saw 6 individuals and 4 morphotypes. A relatively high abundance of water column fishes (hatchetfish and bristlemouths) were observed near bottom. Though these are diel vertical migrators, > 1000m is pretty deep for some of these families.
Map of the ROV Dive Site	

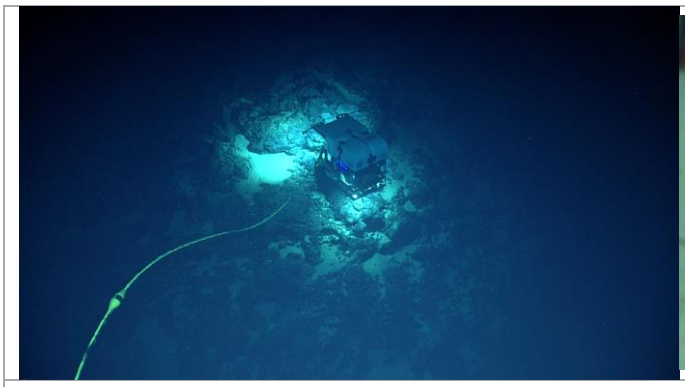


Representative Photos of the Dive



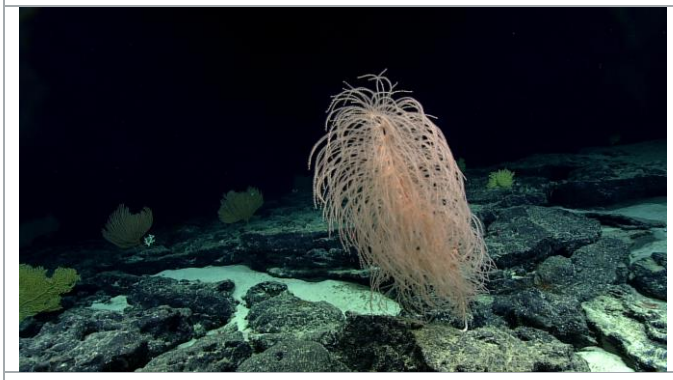
Close up view of Mn-custed rocks and sediments

Bat fish Ogcocephalidae.

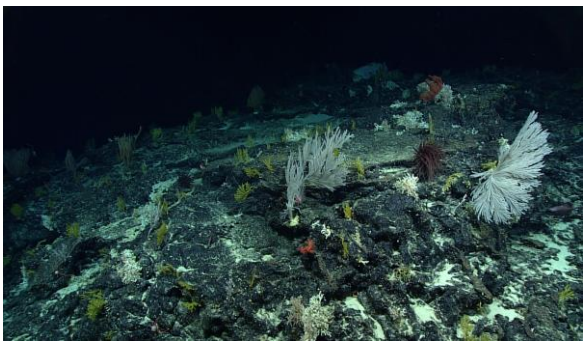


Seirios view of terrain near the summit

Homolid crab on primnoid biflabellate fan. We observed several of these during the dive.



Rhodaniridogorgia with acanthogorgiid and primnoid fans in the background

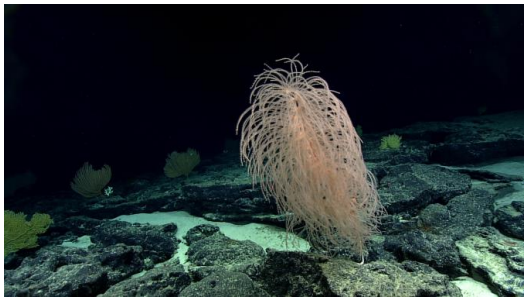


Diverse and abundant corals at summit crest

Samples Collected

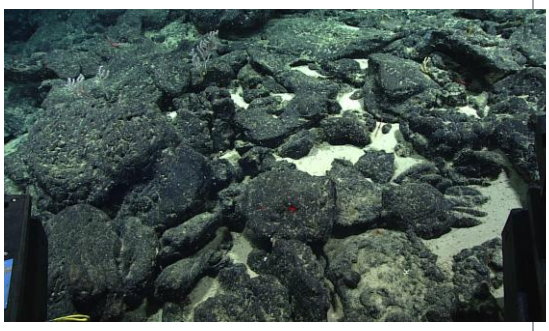
Sample

Sample ID	EX1705_20170508T004744_D2_DIVE07_SPEC01BIO
Date (UTC)	20170508
Time (UTC)	004744
Depth (m)	960.02
Temperature (°C)	5.12
Field ID(s)	Rhodaniridogorgia
Commensal ID and Field Identification	EX1705_20170508T004744_D2_DIVE07_SPEC01BIO_A01 Unknown (possible sponge or radiolarian)
Comments	



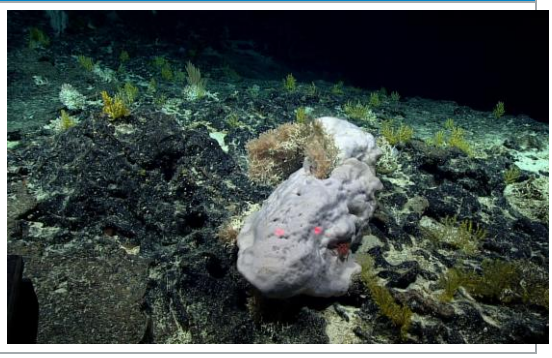
Sample

Sample ID	EX1705_20170508T013734_D2_DIVE07_SPEC02GEO
Date (UTC)	20170508
Time (UTC)	013734
Depth (m)	919.32
Temperature (°C)	5.18
Field ID(s)	Mn crusted rock
Commensal ID and Field Identification	EX1705_20170508T013734_D2_DIVE07_SPEC02GEO_A01 Hard sponge EX1705_20170508T013734_D2_DIVE07_SPEC02GEO_A02 Foraminifera EX1705_20170508T013734_D2_DIVE07_SPEC02GEO_A03 Stoloniferous Octocoral EX1705_20170508T013734_D2_DIVE07_SPEC02GEO_A04 Misc. sponges EX1705_20170508T013734_D2_DIVE07_SPEC02GEO_A05 Sponge
Comments	

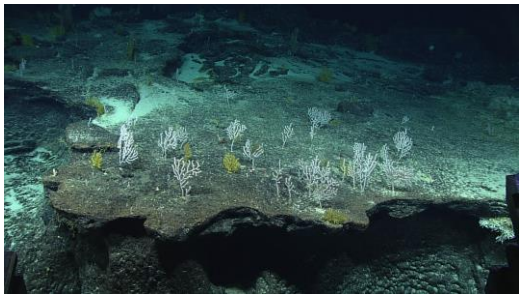


Sample

Sample ID	EX1705_20170508T021950_D2_DIVE07_SPEC03BIO
Date (UTC)	20170508
Time (UTC)	021950
Depth (m)	869.92
Temperature (°C)	5.23
Field ID(s)	Demosponge



Commensal ID and Field Identification	EX1705_20170508T021950_D2_DIVE07_SPEC03BIO_A01 Madrepora EX1705_20170508T021950_D2_DIVE07_SPEC03BIO_A02 Ophiuroid EX1705_20170508T021950_D2_DIVE07_SPEC03BIO_A03 Polychaete EX1705_20170508T021950_D2_DIVE07_SPEC03BIO_A04 Glass sponge
Comments	
Sample	
Sample ID	EX1705_20170508T025939_D2_DIVE07_SPEC04BIO
Date (UTC)	20170508
Time (UTC)	025939
Depth (m)	863.28
Temperature (°C)	5.28
Field ID(s)	Eunicella sp.
Commensal ID and Field Identification	EX1705_20170508T025939_D2_DIVE07_SPEC04BIO_A01 Hydrozoa
Comments	



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