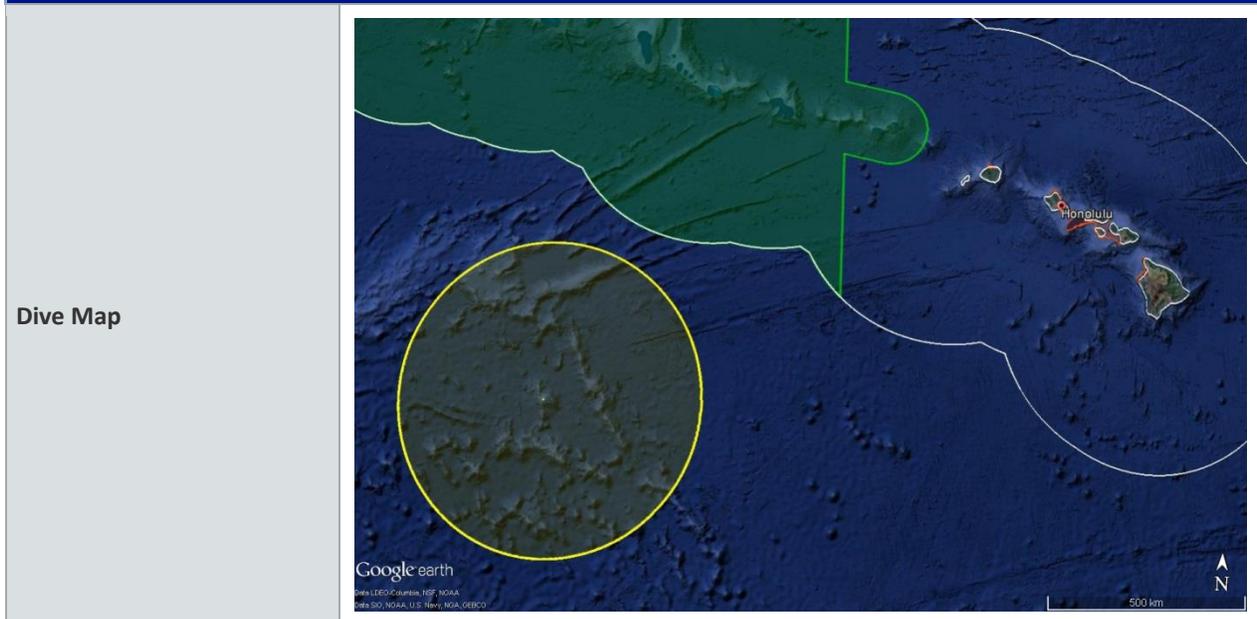




Okeanos Explorer ROV Dive Summary

Dive Information



Site Name	"Wetmore" Seamount
ROV Lead(s)	Dan Rogers
Expedition Coordinator(s) / Mapping Lead	Kelley Elliott / Mashkooor Malik
Science Team Lead(s)	Chris Kelley & Chris Mah
General Area Descriptor	Johnston Atoll Unit of PRIMNM

ROV Dive Name

Cruise	EX1706
Leg	
Dive Number	9

Equipment Deployed

ROV	Deep Discoverer (D2)
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
	LSS	ORP	
Equipment Malfunctions	None		
ROV Dive Summary (from processed ROV data)	<p style="text-align: center;">Dive Summary: EX1706_DIVE09</p> <p>In Water: 2017-07-23T18:25:02.053000 15°, 09.855' N ; 171°, 15.366' W</p> <p>Out Water: 2017-07-24T02:30:20.915000 N/A ; N/A</p> <p>Off Bottom: 2017-07-24T01:05:54.530000 15°, 10.140' N ; 171°, 15.069' W</p> <p>On Bottom: 2017-07-23T19:57:44.094000 15°, 09.980' N ; 171°, 15.295' W</p> <p>Dive duration: 8:5:18</p> <p>Bottom Time: 5:8:10</p> <p>Max. depth: 2574.8 m</p>		
Special Notes			
Scientists Involved (please provide name, location, affiliation, email)	<p style="text-align: center;">Asako Matsumoto, PERC/CIT, Japan, amatsu@gorgonian.jp Chris Kelley, UH, ckelley@hawaii.edu Chris Mah, SI NMNH, brisinga@gmail.com Ken Sulak, U.S. Geological Survey, ksulak@usgs.gov Les Watling, University of Hawaii at Manoa, watling@hawaii.edu Nicole Morgan, Florida State University, nmorgan@fsu.edu Scott France, University of Louisiana at Lafayette, france@louisiana.edu Timothy Shank, Woods Hole Oceanographic Institution, tshank@whoi.edu Tina Molodtsova, P.P. Shirshov Institute of Oceanology RAS, tina.molodtsova@gmail.com Jaymes Awbrey, University of Louisiana, Lafayette, jawbrey@louisiana.edu</p>		
Purpose of the Dive	<p>This dive site is on a Mn-crusted rift zone ridge extending SW from Wetmore Seamount, a guyot located in the JAU of PRIMNM and also in the PCZ. These ridges are a CAPSTONE priority because previous surveys have found large scale, high density communities of deep water corals and sponges on this type of topography as well as the many other animals they support. Ridges act as barriers to bottom current flow and their crests are locations where currents accelerated, which is where the corals and sponges are most heavily aggregated. Ridges are also sites where basalt can be found and are therefore desirable locations for obtaining rocks for dating seamounts. This particular dive is designed to explore a ridge site just below 2500m that based on previous ridge dives, may be a potential lower depth boundary for high density communities.</p>		



Description of the Dive

The Deep Discoverer deployed at 8:30AM reaching bottom (2150 m) at approximately 8:45 AM where it arrived on substrate of Mn encrusted pillow lava flows, large blocks, and boulders. Volcanic substrate alternating with patches of sediment and Mn encrusted nodules continued throughout the dive and 2 rocks were collected for geochemical analysis and aging.

Fauna overall was sparse with most species being found in low abundance. The one exception was a species of stalked glass sponge (*Bolosoma* sp B) that was moderately numerous and reached a height of up to a meter or more. Other less regularly encountered glass sponges included several different species in the genus *Poliopogon*. A never before yellow species of *Poliopogon*, or at least phoronematid was observed during the final minutes of the dive. A cladorhizid sponge was observed today using its fine spines to capture small crustaceans for food.

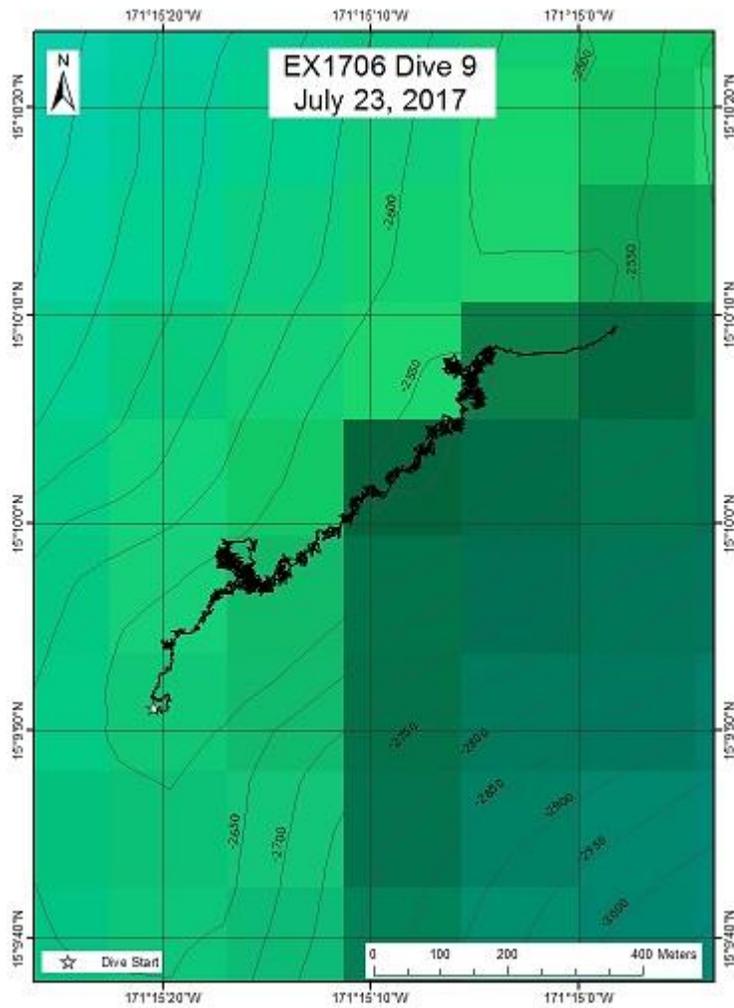
Colonial cnidarians were also observed in low to moderate abundance and included octocorals (“whip” forms of bamboo coral (Isididae), *Chrysogorgia* and *Pleurogorgia* species, and primnoids in the genus *Narella*. Black corals (antipatharians) were also observed including a potentially new species of *Heteropathes* (tentatively identified for now as *H. cf Americana*) that was collected. Of particular interest was a benthic siphonophore in the genus *Thermopalia*; the first seen so far on this cruise.

Observations were also made of several noteworthy echinoderms, particularly the first in situ observation ever of the unusual “sea star-like” brittle star *Astrophiura*. A new genus and species of what appears to be a solasterid or a ganeriid was also observed and collected. Feather stars were also present including a young pentacrinid juvenile still attached the substrate but a stalk. Several deposit feeding sea cucumbers were also observed including purple species from the families Synallactidae and Elpidiidae. Both displayed either translucent or a completely transparent body wall permitting observation of sediment swallowed in the gut.

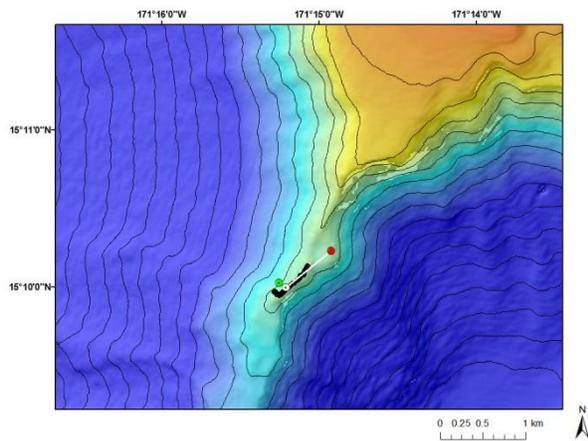
The arthropod highlights were an ostracod and squat lobster (*Munidopsis* sp) while noteworthy chordates included the solitary stalked tunicate *Culeolus*, two cusk eels (*Bassogigas* sp.) and a grenadier (*Kumba* sp.)



Overall Map of the ROV Dive Area



Close-up Map of Main Dive Site



Representative Photos of the Dive



View of the landing area for the D2 showing the mixed substrate of pillow lavas, boulders, and light sediment cover.

Further upslope, the substrate transitioned to more consolidated pillow lava formations. A yellow species of the stalked glass sponge *Bolosoma* was the dominant invertebrate found on this site.

Samples Collected

Sample

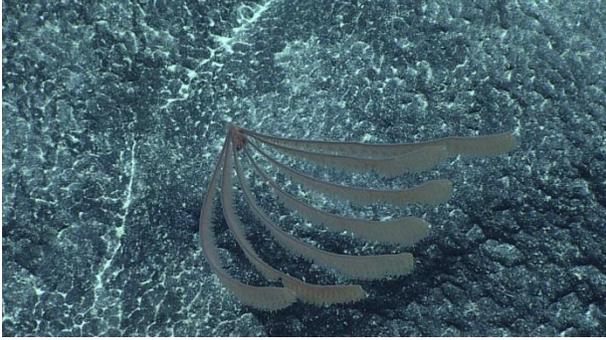
Sample ID	D2_DIVE_SPEC01GEO
Date (UTC)	20170723
Time (UTC)	202846
Depth (m)	2570
Temperature (°C)	1.8
Field ID(s)	Mn Crusted Rock
Comments	



Sample

Sample ID	D2_DIVE_SPEC02BIO
Date (UTC)	20170723
Time (UTC)	203305
Depth (m)	2569
Temperature (°C)	1.8
Field ID(s)	Solasteridae



Comments		
Sample		
Sample ID	D2_DIVE_SPEC03BIO	
Date (UTC)	20170723	
Time (UTC)	211137	
Depth (m)	2542	
Temperature (°C)	1.8	
Field ID(s)	Heteropathes cf americana	
Comments	If this turns out to be <i>H. americana</i> , the type specimen has apparently be misplaced according to Tina Molodsova.	
Sample		
Sample ID	D2_DIVE_SPEC04GEO	
Date (UTC)	20170723	
Time (UTC)	211953	
Depth (m)	2542	
Temperature (°C)	1.8	
Field ID(s)	Mn Crusted Rock	
Comments	Three associates were obtained that include possible tubeworms, hydroids, and a sponge	

Please direct inquiries to:

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