# OKEANOS EXPLORER ROV DIVE SUMMARY

Site Name	Keathley Canyon KC3				
ROV Lead/Expedition Coordinator	Brian Bingham/ Kelley Elliott				
Science Team Leads	Jamie Austin (Geology) Stephanie Farrington (Biology)		WA		
General Area Descriptor	Gulf of Mexico			Congless the Congless to Congless the Congless that Congless that Congless the Congless that Congless the Congless that Congless the Congless that Congless t	
ROV Dive Name	Cruise Season	Leg		Dive Number	
	EX1402	3		DIVE06	
Equipment Deployed	ROV: D  Camera Platform:		•	Deep Discoverer Seirios	
ROV Measurements	Camera Flationii.	□ Depth     □ Depth	Altitude		
	Scanning Sonar	USBL Position		Heading	
		⊠ 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	N/A				
ROV Dive Summary (From processed ROV data)	Dive Summary: EX1402L3_DIVE06_20140418  ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^				
Special Notes					
Scientists Involved (please provide name / location / affiliation / email)	Primary  Jamie Austin, EX, UT Austin, jamie@utig.ig.utexas.edu Stephanie Farrington, EX, HBOI/FAU, sfarrington@fau.edu Amanda Demopoulos, FL, USGS, ademopoulos@usgs.gov Andrea Quattrini, PA, Temple, andrea.quattrini@temple.edu Bill Kiene, NOAA FGBNMS, william.kiene@noaa.gov Brian Kinlan, MD, NOAA NCCOS, Brian.Kinlan@noaa.gov Carolyn Ruppel, MA, USGS, cruppel@usgs.gov Jack Irion, LA, BOEM, Jack.Irion@boem.gov Jason Chaytor, MA, USGS, jchaytor@usgs.gov				

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### **Purpose of the Dive**

This Keathley Canyon dive site was ~20 km south of dive 4 in the same drainage system. This dive was nominated by Brian Kinlan/Bill Keine. The distribution and abundance of black and bamboo corals was the stated biological priority.

#### **Description of the Dive:**

#### **Geological Summary**

The dive began at a water depth of  $\sim 2,130$  m; the dive started on undulatory bottom, climbing a gentle slope at the end. Final water depth was  $\sim 2,000$  m. The initial view of the seafloor showed unconsolidated sediment, with pronounced oscillatory ripples. A check of current at the landing confirmed a current of 0.1-0.2 kt.

As the dive progressed, there was an increase in hummocky seafloor with associated (carbonate?) hardground and layered outcrops of more consolidated material. Individual hummocks were often a meter or more in height. Burrows in these outcrops were common. Outcrops were often partially or almost completely covered in soft sediment. The terrain looked like a partially sedimented landslide debris field, but the role of upwardly mobile salt in the subsurface as a destabilizing force on the upper slope is also suspected. The declivity of the slope in question was 7-8 degrees; the dive ended on this slope.

#### **Biological Summary**

The distribution and abundance of black and bamboo corals was the stated biological priority, but only one morphotype of bamboo coral was observed, many living and some dead. The stalks of dead ones were generally intact and undisturbed - the incidence of dead individuals decreased generally with decreasing water depth.

Holothurian – *Enypniastes* (seen swimming and feeding on the bottom throughout the entire dive over soft bottom), some royal redtype shrimp, as well as a few unidentified shrimp, were observed. The deep-sea lizardfish, *Bathysaurus*, was viewed in close up, and spoon worm (echiura?) trace marks (none live were observed) were common.

Heading to WP 2, amazing footage of cerianthid anemones and thread leg shrimp was collected. A few swimming polychaetes were sighted, a few Liparid fish (possibly - *Scopelogadus* sp.), cutthroat eels, and tripod fish (likely Bathypterois?) were common. Sediment cover featured mostly pteropod shells with little to no ripples; on hard bottom, there were a few small white sponges, fly-trap anemones were rare.

As the dive progressed, the substrate transitioned to rippled soft bottom again, with more *Bathypterois*? sp. becoming common, along with cerianthids, and echiura? trace marks. Cutthroat eels, rattail fish, *Pseudostichopus* (Holothurian), and some single-stalked dead bamboo coral started to appear, associated with *Mysis* shrimp. Liparid fish (*Scopelogadus*?), and Hexactinellida – wedding sponge (*Euplectella* type) were rare but present.

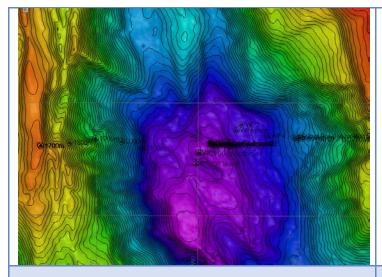
The benthos began to change in the transition from rippled, ~flat seafloor to hummocky mounds. Cutthroat eels become common. Bamboo corals became more common, too, with both dead stalks and living specimens. Royal red shrimp-type were seen swimming, and Hexactinellida –*Euplectella?* were observed but rare.

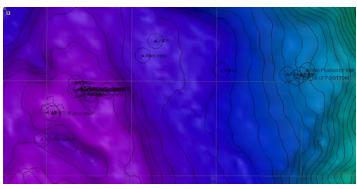
Near the end of the dive on the hummocky slope, single stalked bamboo coral were common, with less dead stalks and more living specimens. There were two comatulid crinoids (as well as some fishing line), and a possible mangrove propagate.

Paleodictyon holes were seen at one location on a hard bottom face, which was a major highlight of this dive (~1950 UTC).

**Overall Map of ROV Dive Area** 

Close-up Map of Main Dive Site





## **Representative Photos of the Dive**



EX1402L3\_IMG\_20140418T152341Z\_ROVHD\_FSH\_BATHYSAURU S.jpg; a deep-sea lizard fish (*Bathysaurus*) patiently waits for its next meal.



 ${\tt EX1402L3\_IMG\_20140418T154952Z\_ROVHD\_ACN\_AUDIO.jpg~A} \\ burrowing~anemone~(cerianthid)~fans~its~tentacles.$ 

Please direct inquiries to:

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