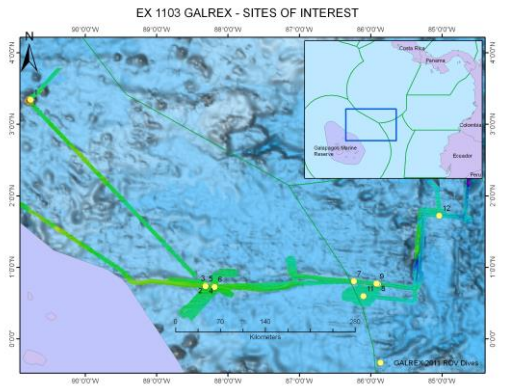
OKEANOS EXPLORER ROV DIVE SUMMARY

Site Name	2a		
ROV Lead/ Expedition Coordinator	Dave Lovalvo/ Jeremy Potter		
General Area Descriptor	Site 2a, X km NX of x Island, Galapagos Islands		
ROV Dive Name	Cruise Season	Leg	Dive Number
	EX1103	2	DIVE03
Equipment Deployed	ROV:	Little Hercules	
	Camera Platfom:	Seirios	
ROV Measurements	☒ CTD	☒ Depth	☒ Altitude
	☒ Scanning Sonar	☒ USBL Position	☒ Heading
	☒ Pitch	☒ Roll	☒ HD Camera
	☒ Low Res Cam 1	☒ Low Res Cam 2	
Equipment Malfunctions	None		
ROV Dive Summary (From processed ROV data)	Dive Summary: EX1103L2_DIVE03 ^^ In Water at: 2011-07-16T14:28:27.687000 00°, 44.322' N ; 088°, 18.728' W Out Water at: 2011-07-16T22:37:11.620000 00°, 44.161' N ; 088°, 18.559' W Off Bottom at: 2011-07-16T21:04:48.084000 00°, 44.278' N ; 088°, 18.591' W On Bottom at: 2011-07-16T14:56:16.948000 00°, 44.334' N ; 088°, 18.660' W Dive duration: 8:8:43 Bottom Time: 6:8:31 Max. depth: 1970.8 m		
Special Notes	Click here to enter text.		
Scientists Involved *(please provide name / location / affiliation / email)*	Timothy M. Shank/ Okeanos Explorer Lead Scientist/WHOI/tshank@whoi.edu Edward T. Baker/NOAA-PMEL, Washington/Edward.baker@noaa.gov Robert W. Embley/NOAA-PMEL, Oregon/Robert.w.embley@noaa.gov Stephen Hammond/ NOAA-PMEL, Oregon/Stephen.r.hammond@noaa.gov James F. Holden/ UMASS Amherst/jholden@microbio.umass.edu Scott White/University of South Carolina/swhite@geol.sc.edu Sharon L. Walker/ NOAA-PMEL, Washington/sharon.l.walker@noaa.gov Santiago Herrera/ WHOI Exploration Command Center/WHOI/sherrera@whoi.edu T. Jennifer Lin/UMASS Amherst/tjennlin@gmail.com Catriona Munro/ WHOI Exploration Command Center /WHOI/catmunro89 @gmail.com		

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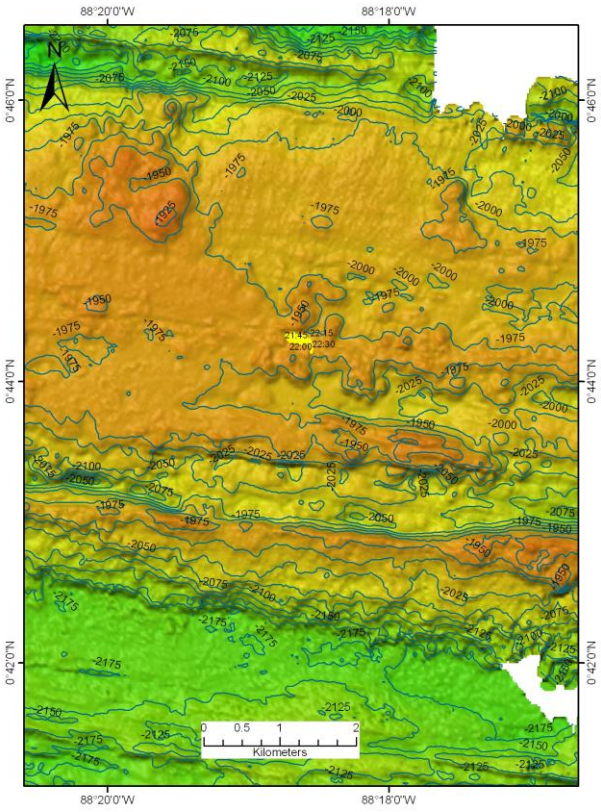
Purpose of the Dive

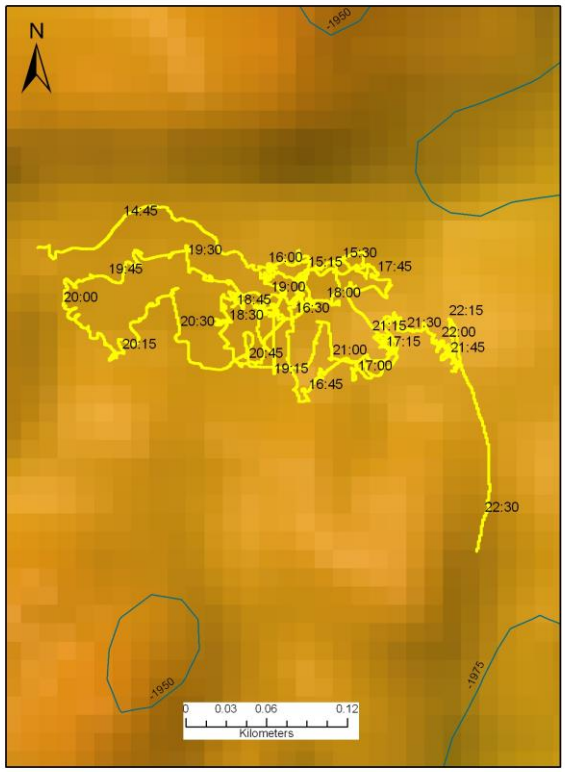
Site 2a has light-scattering properties dozens of meters off the seafloor and a strong hydrothermal plume signal was located here during the first leg of this expedition. The goal of this dive was to explore an area near 1970 meters where fresh lava flows were observed at the end of Dive 02 and to continue exploration for active hydrothermal venting.

Description of the Dive:

During our third ROV dive on the Galápagos Rift, we continued searching for active hydrothermal vents. We came across recent lobate flow with hydrothermal staining and continued to move SW on this flow toward a ridge. Hydrothermal alteration of pillow lavas appeared more extensive in this region. Once on top of the ridge, there was speculation that this feature was a north-facing broken talus mound or wall and that there would be more hydrothermal activity to the west of our current location. As we moved west, low volume warm venting could be seen and particles in the water that were likely to be bacterial sulfur flocculent. Traversing over younger lava flow on our way north toward "Little Hercules smoke target", we passed a recent lava contact and the water remained murky with no sessile fauna and a decrease in hydrothermal staining. We came upon a 1 m wide fissure, floored with talus and pillow lava on either side and continued to follow the fissure with an increase in sediment, before turning to follow the fissure to the east. Towering hydrothermal sulfide spires appeared, lined west-to-east within the graben; remnants of past black smoker chimneys with scars in the rock where colonies of tubeworms once lived.

Overall Map of ROV Dive Area	Close-up Map of Main Dive Site





Representative Photos of the Dive

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