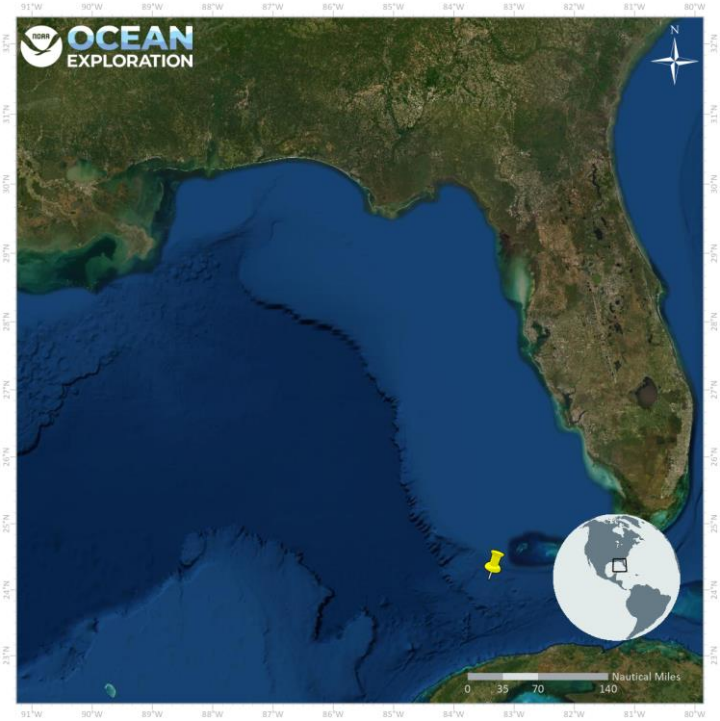
ROV Dive Summary, EX-2201, Dive 07, March 02, 2022

General Location Map



Dive Information

Site Name	Southernmost Most Canyon Ridge 2
General Area Descriptor	Straits of Florida
Science Team Leads	Karl McLetchie, Anna Lienesch, Trish Albano
Expedition Coordinator	Kimberly Galvez
ROV Dive Supervisor	Karl McLetchie
Sample Data Manager	Anna Lienesch
Mapping Lead	Sam Candio
Dive Purpose	Complete last of Engineering objectives and explore a previously unexplored area of the Straits of Florida
Was the dive restricted for	No

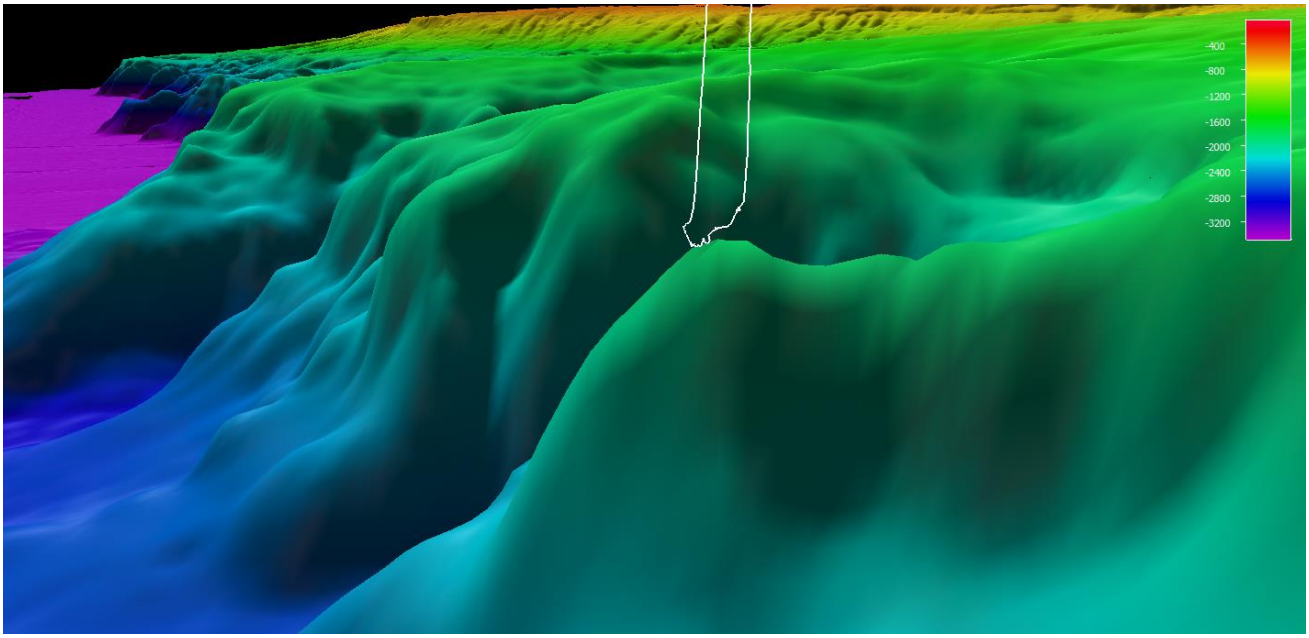
Underwater Cultural Heritage?	
ROV Dive Summary Data	Dive Summary: EX2201_DIVE07 ^^ Dive Type: Normal In Water: 2022-03-02T14:36:06.773050 24.132998889792347 ; -84.0995319887103 On Bottom: 2022-03-02T16:15:52.407342 24.132365472794596 ; -84.09432508399375 Off Bottom: 2022-03-02T21:50:34.184643 24.1309182498188 ; -84.09142354584989 Out Water: 2022-03-02T22:33:09.012530 24.125913541403577 ; -84.07811235699049 Dive Duration: 7:57:02 Bottom Time: 5:34:41 Max Vehicle Depth: 1749.9 m Min Seafloor Depth: 1688.1 m Distance Traveled: 292.2 m Mid Water Transects Summary ^^ Number of Transects: 1 Transect 1 Start: 21:25:00 24.13157531969656 ; -84.09264082992414 End: 21:50:21 24.130915363677133 ; -84.09139595403583 Duration: 0:25:21 Depth: 465.0 m

Dive Description	This was a science-focused dive, although engineering objectives were accomplished throughout the duration of dive. The ROV descended unto the ridge of a canyon with unconsolidated carbonate sediment. The canyon had boulders that were coated in FeMN crust. The ROV ascended some to get to the pinnacle of the geologic feature that showed both sides sloping down. Some overhangs were observed with cup corals and sponges growing underneath them. A rich biodiversity of sponges and corals were observed in a coral garden-like environment. D2 did record a candelabra gorgonian coral that was unfortunately dead, but it was the first record of this type of coral being seen, dead or alive, in the Gulf of Mexico. Crinoids, brittle stars, predatory sea stars, squat lobsters, and hermit crabs were also seen. A large cusk eel was also observed. There was some dead coral rubble interspersed among the sediment. On the ascent of the dive, we did a mid-water transect at the deep scattering layer (~460m) to look for bioluminescence on the low light camera. We also tested various combinations of lights with the low light camera to try to find the ideal settings to observe bioluminescence. Several ctenophores and small fish were also observed on the ascent.
Notable Observations	A rich biodiversity of sponges and corals were observed in a coral garden-like environment.
Community and habitat observations	Corals and Sponges - Present Chemosynthetic Community - Absent High biodiversity Community - Present Active Seep or Vent - Absent Extinct Seep or Vent - Absent Hydrates – Absent
CMECS Feature Type(s)	Carbonate canyon wall with unconsolidated sediment
SeaTube Link (science annotation system)	https://data.oceannetworks.ca/SeaTubeV3?resourceTypeId=600&resourceId=5940

Equipment Deployed

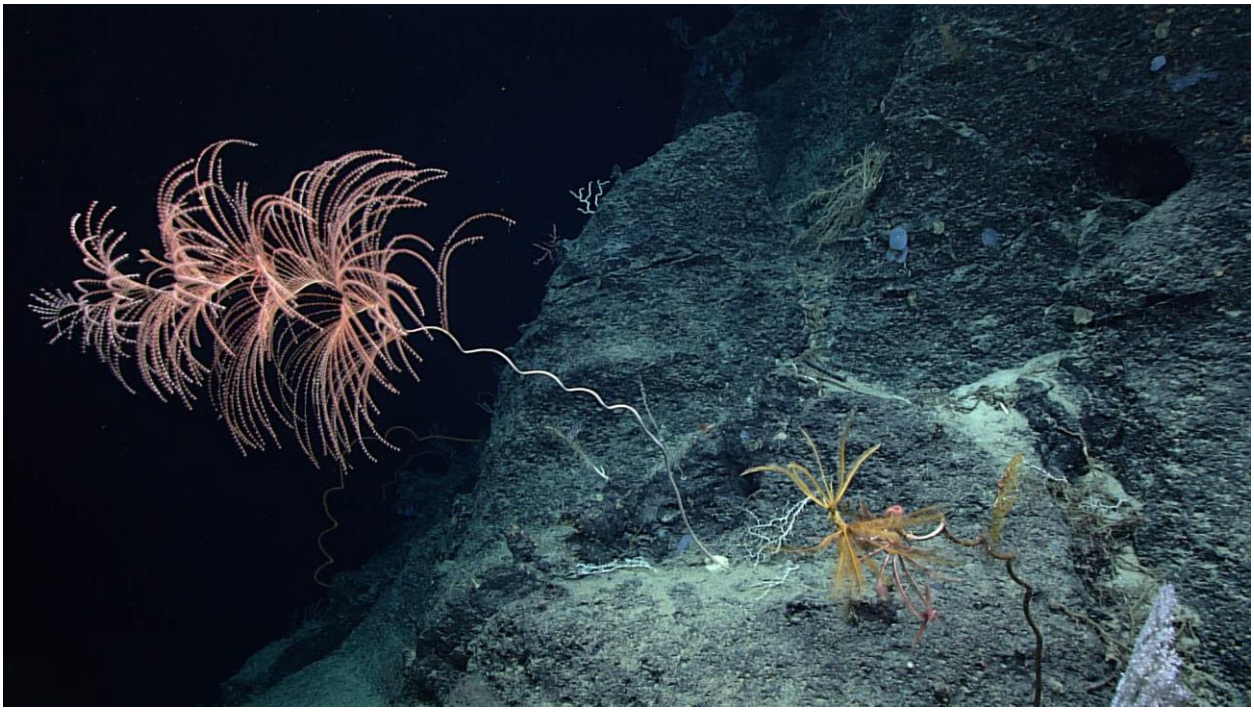
ROV	*Deep Discoverer*
Camera Platform	*Seirios*
ROV Measurements	The following ROV measurements, data streams and equipment are used on each ROV deployment: CTD, depth, scanning sonar, USBL position, altitude, heading, attitude, high-resolution cameras, low resolution cameras, manipulator arms, suction sampler, sample drawers and thrusters. The section below notes if any of these sensors were malfunctioning or not operational
Equipment Malfunctions	None.

Close-up Map of Main Dive Site



Smoothed ROV dive track in white on the bathymetry, 3x vertical exaggeration, depth in meters.

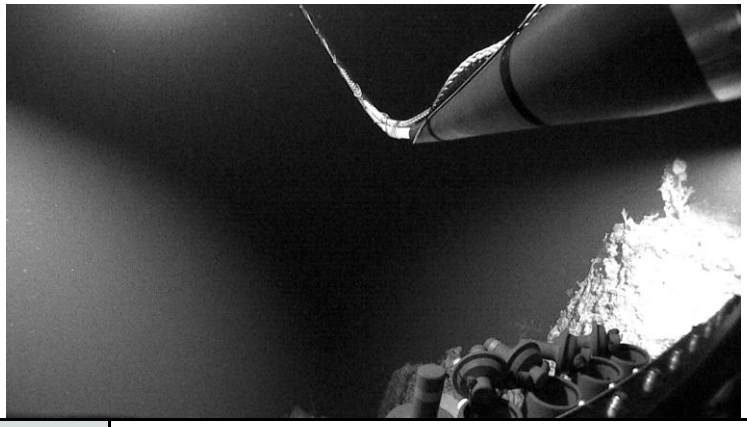
Representative Photos of the Dive


Multiple Iridigorgia sp (possible *megaspiralis*) were observed throughout the dive.

Samples Collected -

None.

Niskin Sampling Summary



Sample ID	EX2201_D07_01W
Date (UTC)	20220302
Time (UTC)	17:55:02
Depth (m)	1738.131
Latitude (decimal degrees)	24.132140
Longitude (decimal degrees)	-84.09389
Bottle number	NISKIN 1
Temperature (°C)	4.314
Dissolved Oxygen (ml/L)	4.6788
Treatment	Longmire's Buffer Solution

Scientists Involved (provide name, email, affiliation)

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