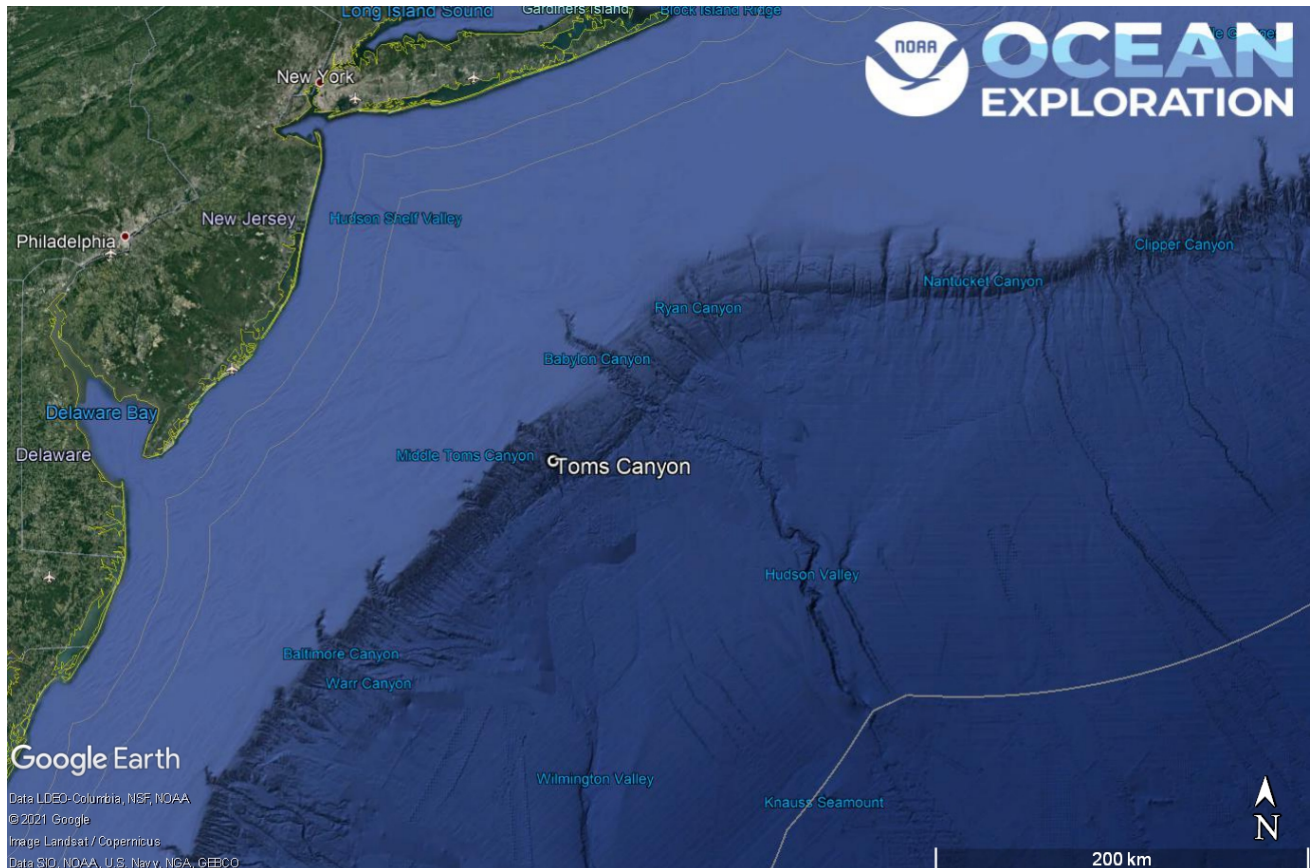


ROV Dive Summary, EX-21-03, Dive 08, June 23, 2021

General Location Map



Dive 08 named Toms Canyon. This site is in Toms Canyon off of New York and New Jersey.

Dive Information

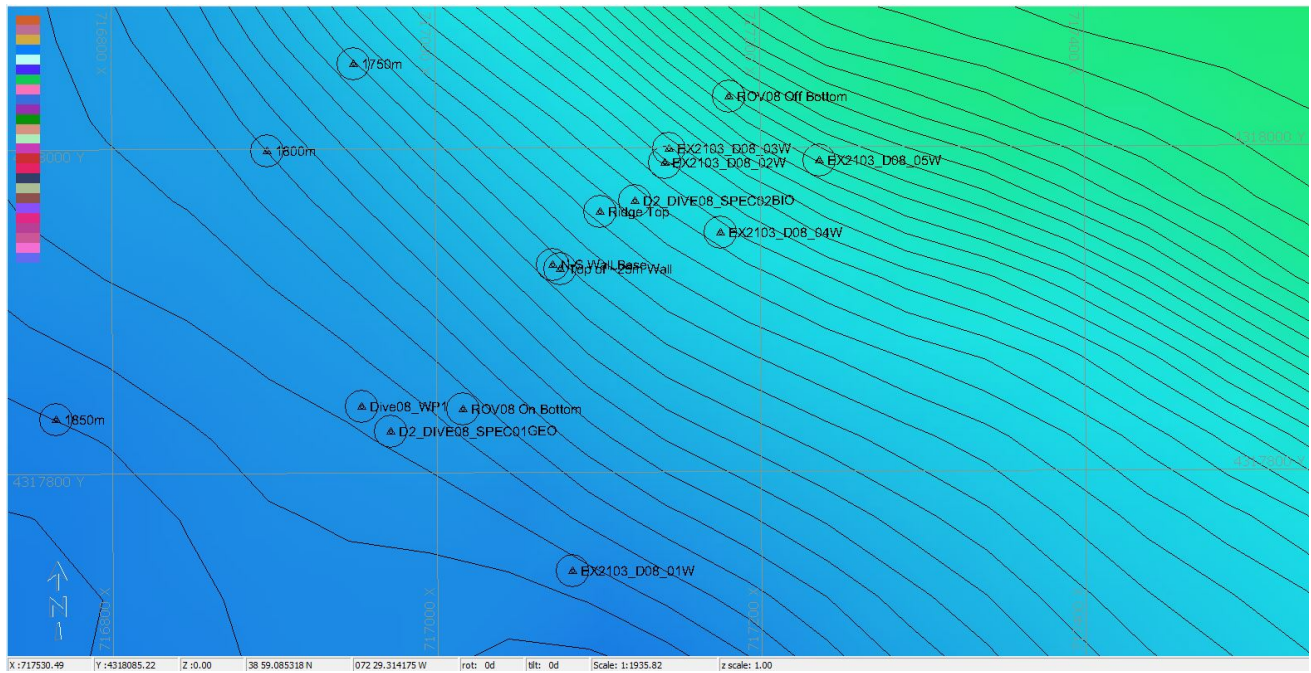
Site Name	Toms Canyon
General Area Descriptor	Mid-Atlantic Canyons
Science Team Leads	Karl McLetchie
Expedition Coordinator	Kasey Cantwell/Matt Dornback
ROV Dive Supervisor	Karl McLetchie
Mapping Lead	Shannon Hoy

Dive Description	<p>Today's dive (Dive 8) deployed at 0830 on Toms Canyon and descended to a depth of 1830m. The ROV immediately found mudstone protrusions from the sediment and consistent coverage of brittle stars on the sedimented areas. The ROV proceeded to climb the northern canyon wall observing numerous different types of corals, fish, sponges, sea urchins, on rocky walls, ledges, and talus slopes. This was the first dive of EX2103 that has significant science participation from shore. Scientists from shore logged into the chat to discuss the geology and biology of the area and requested samples.</p> <p>The team observed bioluminescence on a bamboo coral using the new ME-20 low light camera. The team set up the ROV's manipulator arm near the bamboo coral and proceeded to turn down the ROV lights and turn up the light gain on the ME-20 camera. When the coral was bumped by the arm the videographer observed faint illumination from the coral. The Figures 1 and 2 below show the setup with the manipulator arm and the flash of bioluminescence with all of the ROV lights off.</p> <p>Two samples were taken, a rock that was characteristic of the Toms Canyon substrate and an unknown biological that was resting on the sediment. After ROV recovery the scientist's best guess is that the sample was some type of jellyfish. The sampling SOP was tested with the unknown jellyfish and working with Rhian Waller from shore. The procedures outlined for the jellyfish in the Okeanos Sampling guide from the Smithsonian were confirmed to be the best practice. Having this guide has been exceptionally helpful.</p>
Notable Observations	<p>Potential bioluminescence in a bamboo coral</p> <p>A pycnogonid was observed consuming a gelatinous cnidarian</p>
Community and habitat observations	<p>Corals and Sponges - Present</p> <p>Chemosynthetic Community - Absent</p> <p>High biodiversity Community - Absent</p> <p>Active Seep or Vent - Absent</p> <p>Extinct Seep or Vent - Absent</p> <p>Hydrates - Absent</p>
CMECS Feature Type(s)	Submarine Canyon, Slope, Terraces, Ledge
SeaTube Link (science annotation system)	https://data.oceannetworks.ca/SeaTubeV3?resourceTypeId=600&resourceId=2213

Equipment Deployed

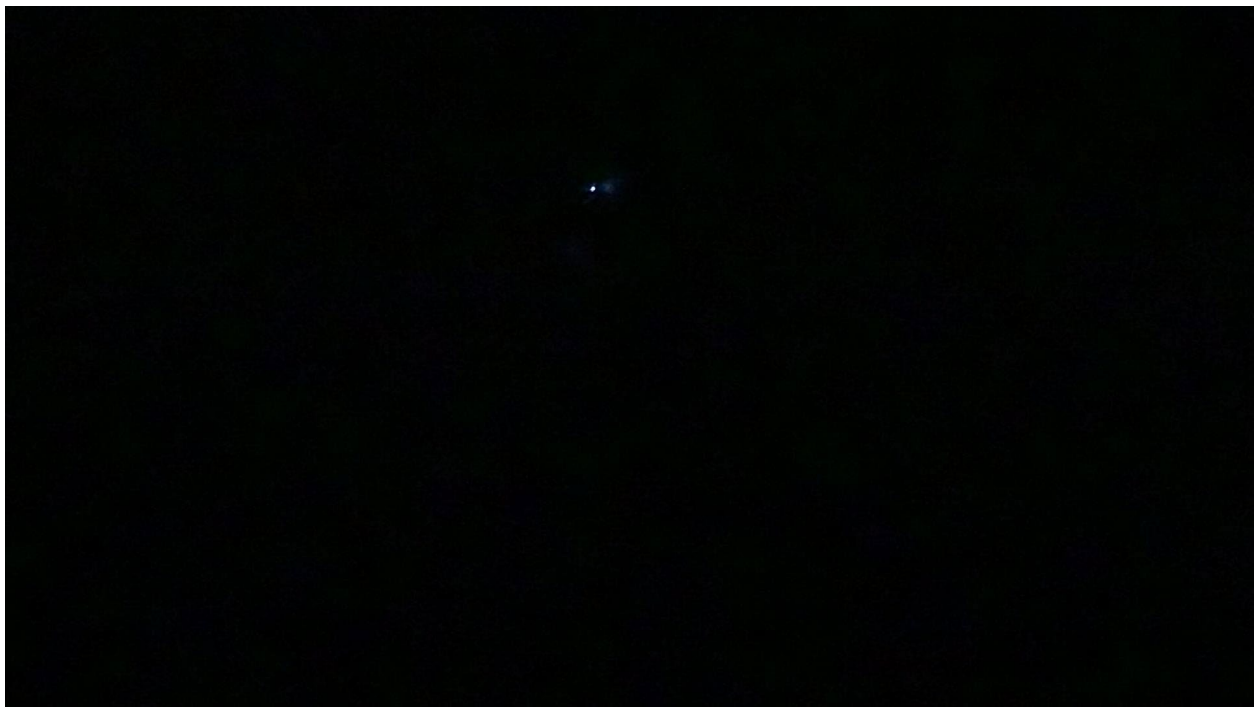
ROV	<i>Deep Discoverer</i>
Camera Platform	<i>Seirios</i>
ROV Measurements	The following ROV measurements, data streams and equipment are used on each ROV deployment: CTD, depth, scanning sonar, USBL position, altitude, heading, attitude, high-resolution cameras, low resolution cameras, manipulator arms, suction sampler, sample drawers and thrusters. The section below notes if any of these sensors were malfunctioning or not operational
Equipment Malfunctions	Turbidity Sensor

Close-up Map of Main Dive Site

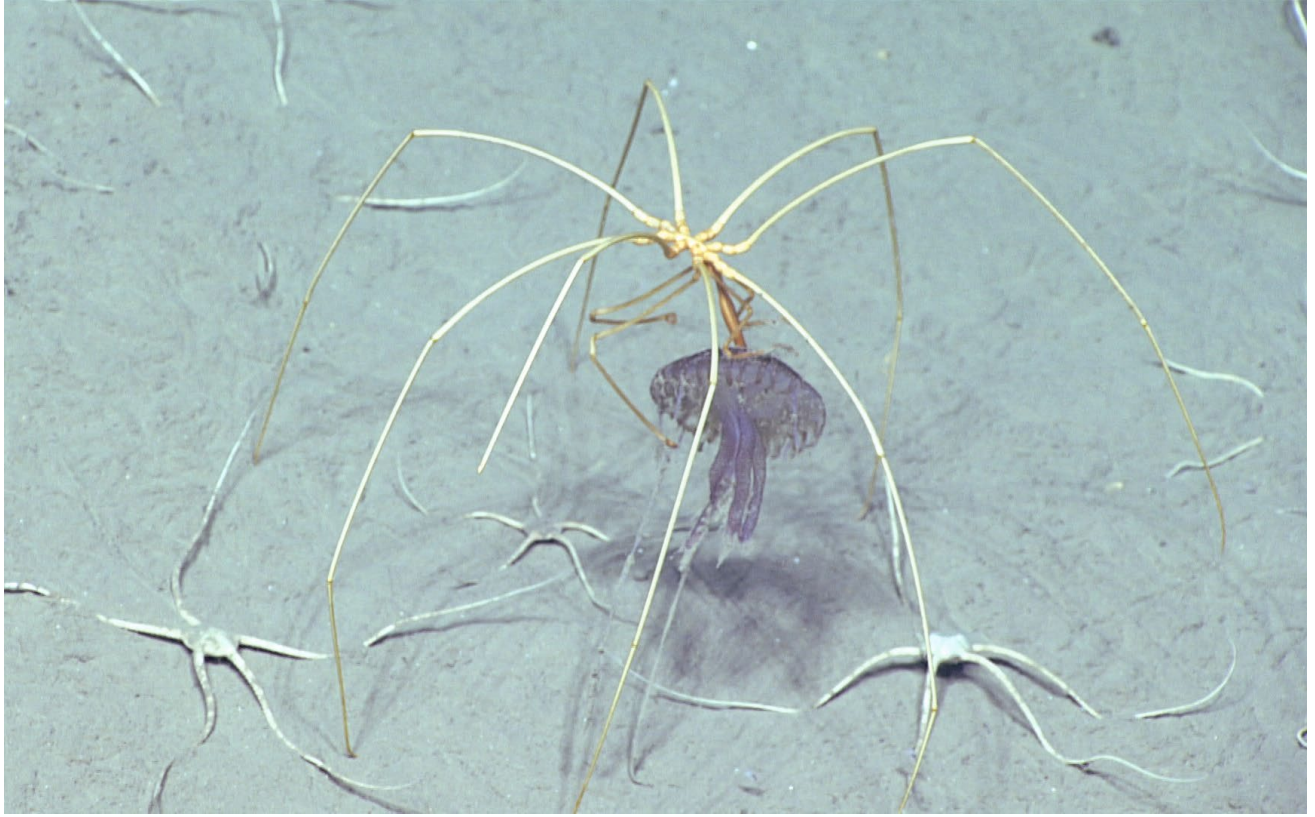


Hypack map of the Dive 08 waypoints. Depth is displayed by contour lines at 10 meter increments and by colors. Warm colors are shallower and cool colors are deeper.

Representative Photos of the Dive



Some small flashes picked up by the low light camera in the upper center of the image.



A pycnogonid sea spider observed consuming a gelatinous cnidarian among brittle stars.

[CAPTION]

Samples Collected -





Sample ID	EX2103_D08_01G
Date (UTC)	6/23/2021
Time (UTC)	143813
Depth (m)	1835.111
Latitude (decimal degrees)	38.9826
Longitude (decimal degrees)	-72.4952
Temp. (°C)	3.465
Field ID(s)	mudstone
Comments	might have biologic worm activity present, silky texture, porous, held up against manipulator arm; weight 0.73 kg, 11-50 cm size category





Sample ID	EX2103_D08_02B
Date (UTC)	6/23/2021
Time (UTC)	180050
Depth (m)	1729.982
Latitude (decimal degrees)	38.9838
Longitude (decimal degrees)	-72.4933
Temp. (°C)	3.598
Field ID(s)	Cnidaria Hydrozoa (hydroids)
Comments	deteriorated condition, 7cm x 4cm wide, collected on bottom, solid bell, frilled edges, hydrozoan possibly, center is firm outside is squishier, four tentacles currently, some seem to have fallen off

Niskin Sampling Summary

No niskin samples were collected

Scientists Involved (provide name, email, affiliation)

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