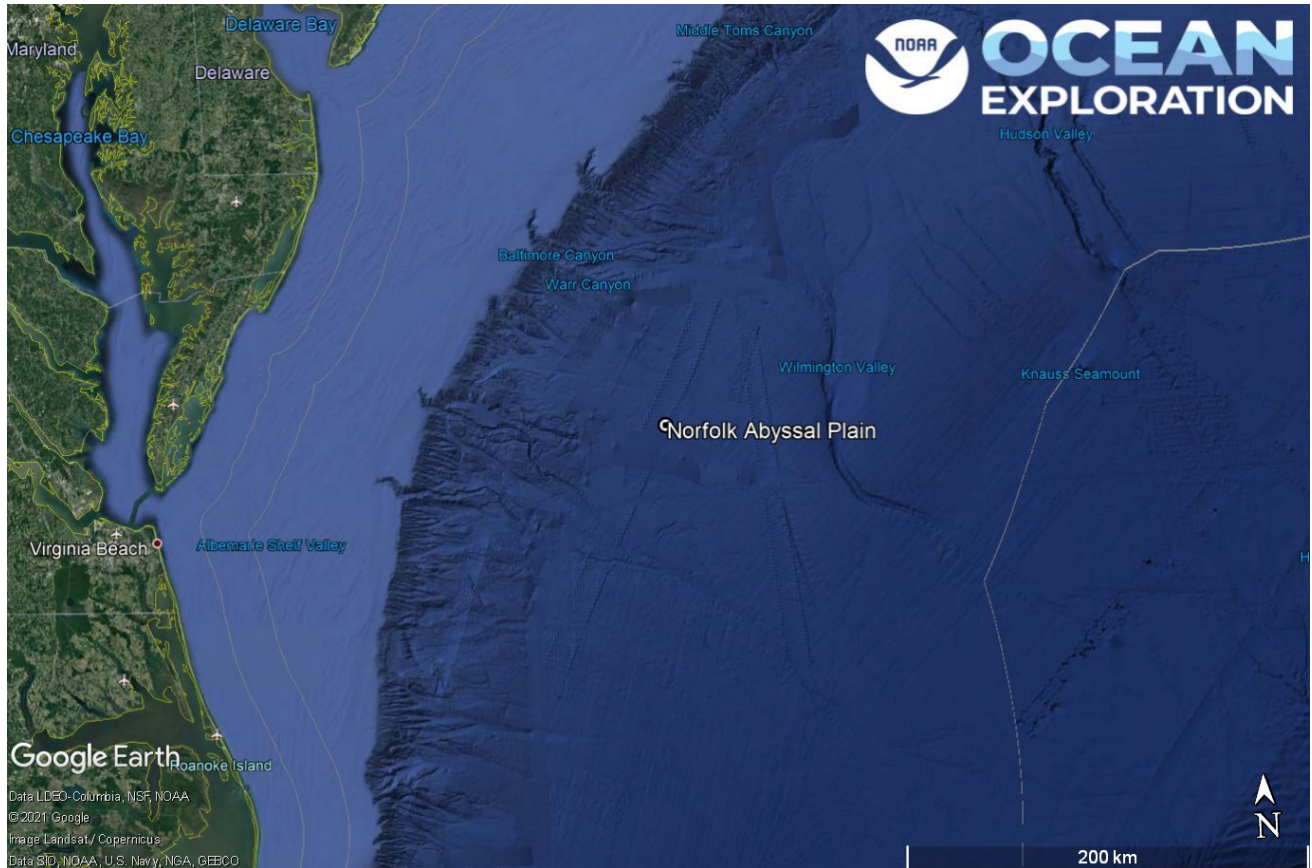


ROV Dive Summary, EX-21-03, Dive 04, June 17, 2021

General Location Map



Dive 04 named Norfolk Abyssal Plain off of the Virginia continental shelf.

Dive Information

| | |
|----------------------------|--------------------------------|
| Site Name | Norfolk Abyssal Plain |
| General Area Descriptor | US Mid-Atlantic, Abyssal Plain |
| Science Team Leads | Karl McLetchie |
| Expedition Coordinator | Kasey Cantwell/Matt Dornback |
| ROV Dive Supervisor | Karl McLetchie |
| Mapping Lead | Shannon Hoy |

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| Dive Purpose | The fourth engineering dive of the ROV Shakedown. Primary objectives include pilot training, testing new motors, motor controllers, lights, cameras, and hydraulic systems on the ROVs. |
| Was the dive restricted for Underwater Cultural Heritage? | No |
| ROV Dive Summary Data | Dive Summary: EX2103_DIVE04 ^^^ Dive Type: Normal In Water: 2021-06-17T12:45:15.376351 37.29381471746258 ; -73.16708320209077 On Bottom: 2021-06-17T14:26:04.139083 37.291918559906634 ; -73.17007020463005 Off Bottom: 2021-06-17T18:56:42.759357 37.29255581233106 ; -73.16993523651291 Out Water: 2021-06-17T20:33:46.874529 37.29534779786078 ; -73.1687938191542 Dive Duration: 7:48:31 Bottom Time: 4:30:38 Max Vehicle Depth: 2849.4 m Min Seafloor Depth: 2841.5 m Distance Travelled: 452.1 m |
| Dive Description | Dive 04 was off of the continental shelf near Washington Canyon. The dive site was a flat sandy/silty plain. Observations during the dive included sponges, sea stars, and holothurians. ROV notes include: --The Kraft was fully setup with adjustments to grip-lock, joint limits, and gains. --The autos were tested and debugged. Auto altitude and depth worked well from the start. Auto XY had some issues due to the different coordinate systems of the different DVLs that have been on D2 this year. The software team fixed the issue and by the end of the bottom time the auto XY was working well. -- While practicing zooms it was noted that the D2 HD tilt is much smoother due to the software improvements and the video zoom is much smoother due to the new camera controllers. -- The D2 term J Box is weeping oil through all of it's SAE ports. We should have a new one machined to swap in before the fall cruise. -- Training in different positions continues. |

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|--|---|
| Notable Observations | |
| Community and habitat observations | Corals and Sponges - Present Chemosynthetic Community - Absent High biodiversity Community - Absent Active Seep or Vent - Absent Extinct Seep or Vent - Absent Hydrates - Absent |
| CMECS Feature Type(s) | Flat |
| SeaTube Link (science annotation system) | https://data.oceannetworks.ca/SeaTubeV3?resourceTypeId=600&resourceId=2173 |

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 | |

Close-up Map of Main Dive Site

None available

Representative Photos of the Dive



A holothurian filtering through sediment on the seafloor.



ROV D2 practicing with the manipulator arm.

Samples Collected -

No samples were collected

Niskin Sampling Summary

No Niskin bottles were used

Scientists Involved (provide name, email, affiliation)

| Name | Email | Affiliation |
|---------------|-------------------|-------------|
| Jason Chaytor | jchaytor@usgs.gov | USGS |
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Please direct inquiries to:

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