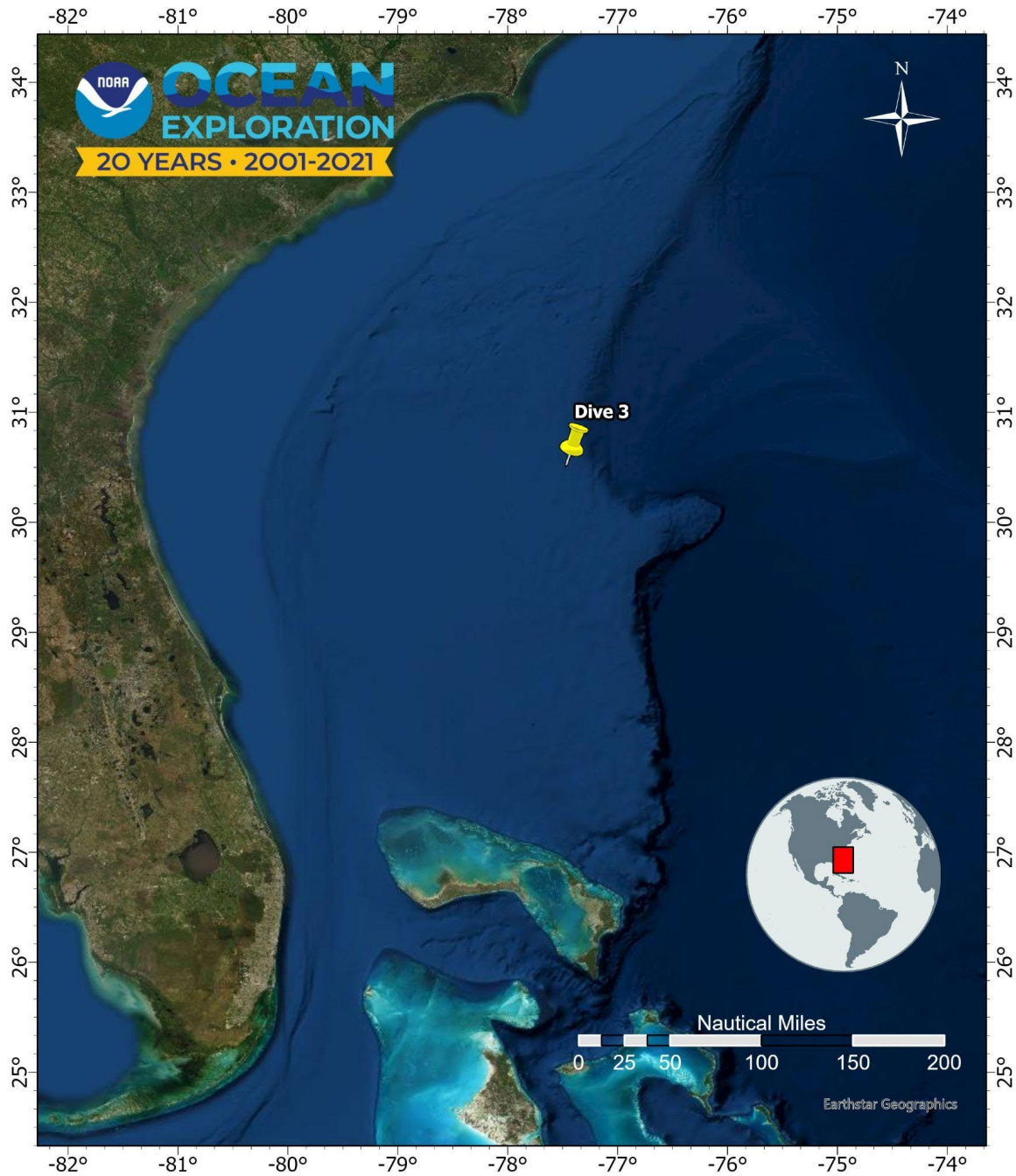


ROV Dive Summary, EX-21-07, Dive 03, November 1, 2021

General Location Map



Number of Transects: 7

eDNA - **EX2107_D03_01W** AT 500 M ON DESCENT

Transect 1

eDNA - **EX2107_D03_02W**

- Start: 13:26:09
 - Lat/Long: 30.70146194555054 ; -77.38948250142212
- End: 14:06:01
 - Lat/Long: 30.702412510996663 ; -77.39367069922748
- Duration: 0:39:51
- Depth: 300.0 m

Most common organismal groups encountered were Chaetognatha (common), Siphonophorae (likely *Nanomia* and a small number of Prayidae, Foraminifera, and Hydrozoa (hydromedusa *Rhopalonema*; n=1) and Pteropoda (cavolinid sea butterfly; n=1). Lighting was difficult at this depth, likely due to proximity to the surface.

Transect 2

Sample eDNA - **EX2107_D03_03W**

- Start: 14:23:00
 - Lat/Long: 30.702925438735107 ; -77.39572258972319
- End: 15:03:01
 - Lat/Long: 30.70416550603365 ; -77.40076197586541
- Duration: 0:40:00
- Depth: 500.0 m

Chaetognatha (common), Cyclothone, Narcomedusae, Foraminifera with pseudopods extended, Bathylagidae (deep-sea smelts; silver fish with a yellow spot and forked tail), Siphonophora (*Nanomia* and prayids common), Sergestidae (shrimp with elbow antennae), squid ink (but no squid), *Rhopalonema* (Trachymedusae), possible Phaeodaria (x-chromosome shape), and the ctenophore *Thalassocalyce*. Lighting continued to be difficult at this depth.

Transect 3 – “Deep Scattering Layer”

EX2107_D03_04B

- Start: 15:13:30
 - Lat/Long: 30.70443410029319 ; -77.40202205063525
- End: 15:53:31
 - Lat/Long: 30.705524099716197 ; -77.4071262563857
- Duration: 0:40:00
- Depth: 600.0 m

Deep scattering layer assessed when diving operations commenced. By time of transect, the DSL had appeared to disperse or thin out; unclear if this was natural or due to ROV interference. Seen during this transect: Doliolida, Chaetognatha (common), Radiozoa, unidentified fishes, *Nanomia*, Larvaceans with mucus houses, lobate ctenophores, one with trailing filaments (collection) and *Thalassocalyce*.

Transect 4 (no water sample attempted)

- Start: 16:07:01
 - Lat/Long: 30.70593197914368 ; -77.40877994017599
- End: 16:47:01
- Lat/Long: 30.707107558582575 ; -77.41385289645645
- Duration: 0:40:00
- Depth: 700.0 m

Foraminifera continued to be abundant. Other organisms observed were Gonostomatidae, unidentified thin fish oriented vertically in the water column (n=1), Prayinae and other calyphoran siphonophores, Chaetognatha (common), the giant ostracod *Gigantocypris*, and larvaceans, noticeably white copepod was imaged, *Rhopalonema*, Serrivomeridae (sawtooth eels), *Stomias* (dragonfish), Sergestidae, and lobate ctenophore (likely larval, with extended tentacles); collection attempted but specimen not in canister after dive. Lighting conducive for better imaging.

2107_D03_S05B (failed, was missing from bucket after recovery)

Transect 5

Sample **2107_D03 S06W**

- Start: 17:03:07
 - Lat/Long: 30.70753789056802 ; -77.41552102694853
- End: 17:42:28
 - Lat/Long: 30.708222734832905 ; -77.4178836422083
- Duration: 0:39:20
- Depth: 900.0 m

Just prior to transect onset, narcomedusa *Solmissus* was imaged. During transect, a diverse fauna was observed, including Sergestidae, *Beroe*, *Periphylla periphylla* (common), Chaetognatha, *Gnathophausia*, *Apolemia* (physonect siphonophore), *Magnoteuthis* (syn. *Mastigoteuthis*) *magna* (squid), Nemichthyidae (snipe eel), additional *Solmissus*, shrimp, and Tomopteridae (n=). At one point, beautiful close up imagery of *Apolemia* was taken, showing very full and prominent gastrozooids.

Bottom in sight.

Sample **7W** attempted but the water bottle misfired and was not completed, there for it was not considered as a sample

Transect 6 - 10 m off bottom

- Start: 18:03:47
 - Lat/Long: 30.708434091704493 ; -77.41899055022697
- End: 18:43:24
 - Lat/Long: 30.708525379769064 ; -77.41908960833038
- Duration: 0:39:36
- Depth: 1005.0 m

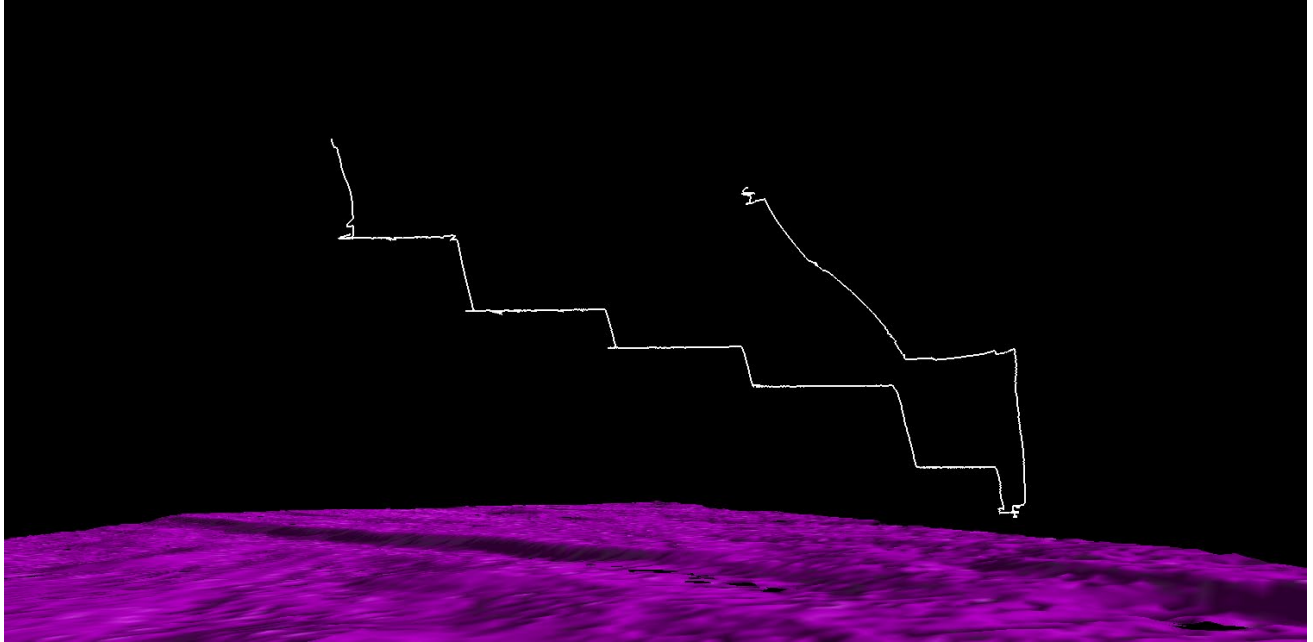
During this transect, a great deal of marine snow was observed in the water. Organisms abundant, including numerous cydippid ctenophores, e.g., red with bright white combs (one collected), red with four orally oriented "horns", "Ctenoceros" (one collected). Lobate ctenophores also common, including *Bathocyroe*. Narcomedusae in the genus *Bathykorus* also common (one collected). A black bigscale/ridgehead fish *Scopelogadus* (family Melamphaidae), likely *Scopelogadus mizolepis* based on locality (by: T. Sutton), was seen

| | |
|--|--|
| | <p>maintaining a head up posture in the water column, presumably using its large eyes to detect potential prey items above it.</p> <p>COLLECT: EX2107_D03_07B, EX2107_D03_08B AND EX2107_D03_09B</p> <p>On the bottom, the substrate was 100% sand with areas of ripples. <i>Stichopathes</i> observed, and 2 different species of Pennatulacea (sea pens) were collected (EX2107_D03_10B) and <i>Kophobelemnion</i> (EX2107_D03_11B), both unusual morphs.</p> <p><u>Transect 7- extra transect 25 m off bottom</u></p> <ul style="list-style-type: none"> ● Start: 19:31:46 <ul style="list-style-type: none"> ○ Lat/Long: 30.70847545344139 ; -77.41911082186203 ● End: 19:53:16 <ul style="list-style-type: none"> ○ Lat/Long: 30.70855949574852 ; -77.41914289427127 ● Duration: 0:21:29 ● Depth: 991.0 m <p>This transect, 25 meters off the bottom differed significantly from 10 meters off bottom. Organisms observed included Gonostomatidae (larger bristlemouth), occasional <i>Bathocyroe</i>, a different red cydippid was observed, an unidentified hydrozoan with 4 radial canals and 8? tentacles. A fish not seen earlier was not identified but good zoom footage was taken of it for later identification. Beautiful imagery was taken of the physonect siphonophore <i>Bargmannia lata</i>.</p> |
| Notable Observations | <p>A juvenile Lancetfish (<i>Alepisaurus</i> sp., family Alepisauridae), with its head-up swimming posture was observed, and we captured what appears to be the first ever video footage of it (during final transect +25 m off bottom)</p> <p>An undescribed species of the narcomedusa <i>Bathykorus</i> was collected</p> <p>An undescribed species of ctenophore with horn-like projections was collected</p> <p>We documented different life stages of an undescribed deep sea ctenophore of the genus <i>Bathocyroe</i></p> |
| Community and habitat observations | <p>Corals and Sponges - Absent</p> <p>Chemosynthetic Community - Absent</p> <p>High biodiversity Community - Present</p> <p>Active Seep or Vent - Absent</p> <p>Extinct Seep or Vent - Absent</p> <p>Hydrates - Absent</p> |
| CMECS Feature Type(s) | Water Column, Pelagic, Plateau |
| SeaTube Link (science annotation system) | https://data.oceannetworks.ca/SeaTubeV3?resourceTypeId=600&resourceId=2443 |

Equipment Deployed

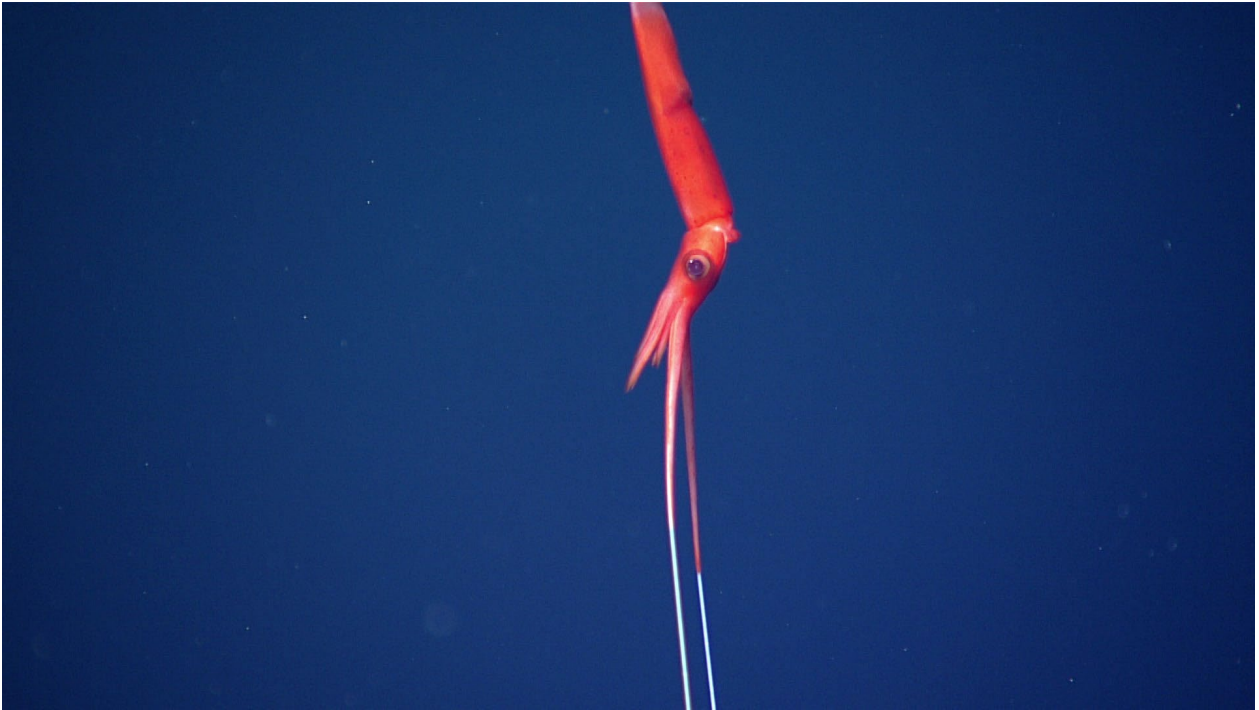
| | |
|------------------|---|
| ROV | <i>Deep Discoverer</i> |
| Camera Platform | <i>Seirios</i> |
| ROV Measurements | The following ROV measurements, data streams and equipment are used on each ROV deployment: CTD, depth, scanning sonar, USBL position, altitude, heading, attitude, high-resolution 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. |

Close-up Map of Main Dive Site



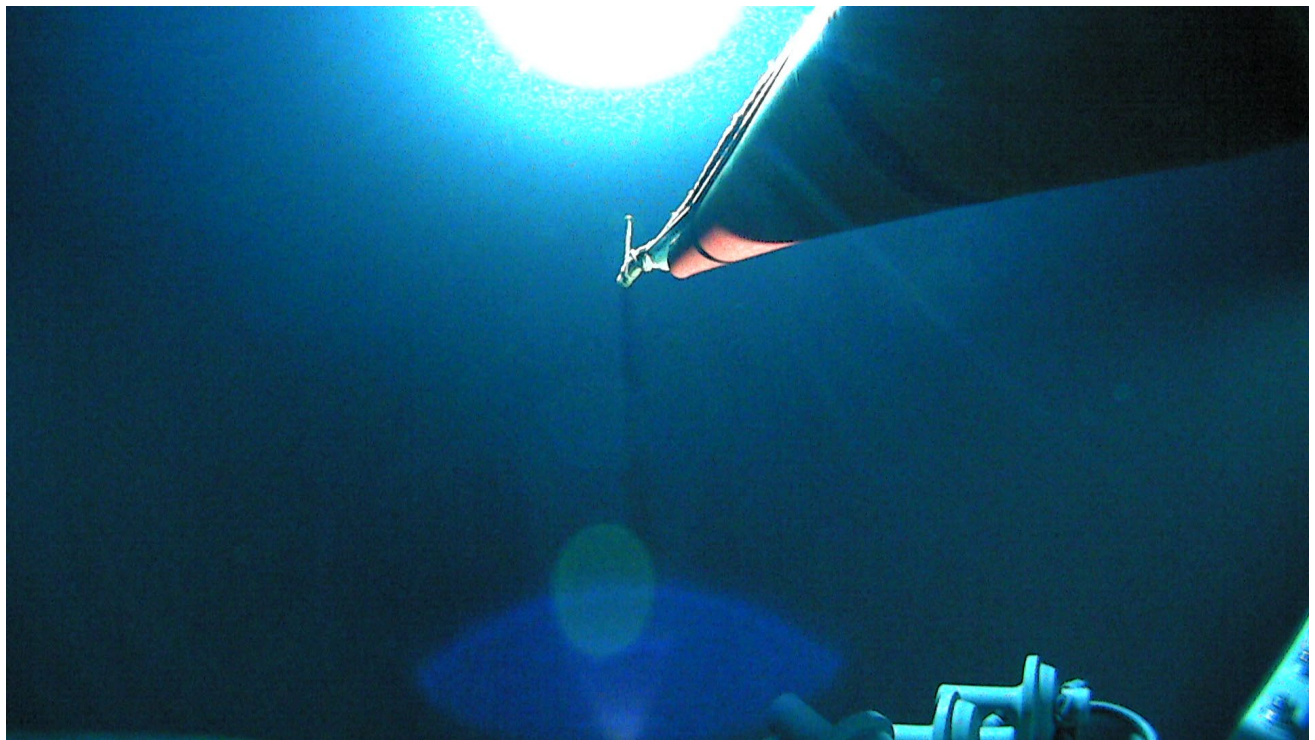
Smoothed ROV dive track in white on bathymetry, 3x vertical exaggeration.

Representative Photos of the Dive



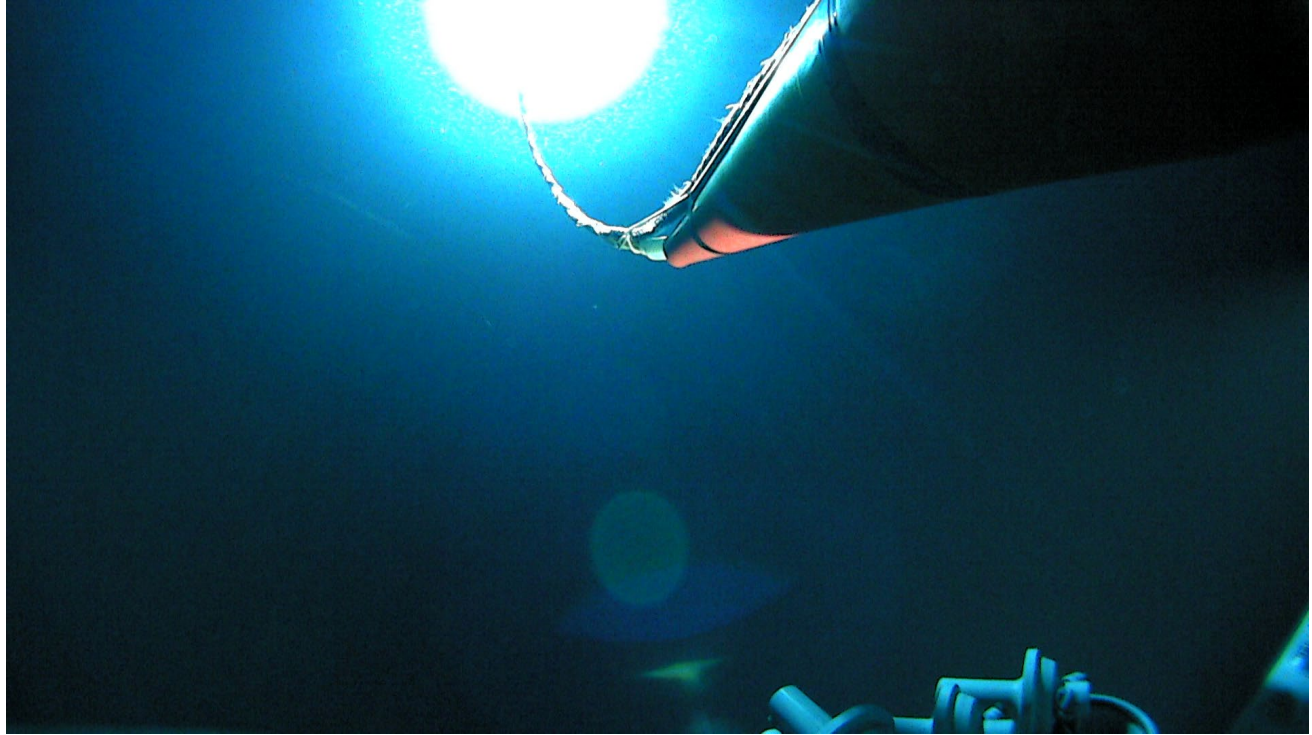


Samples Collected -



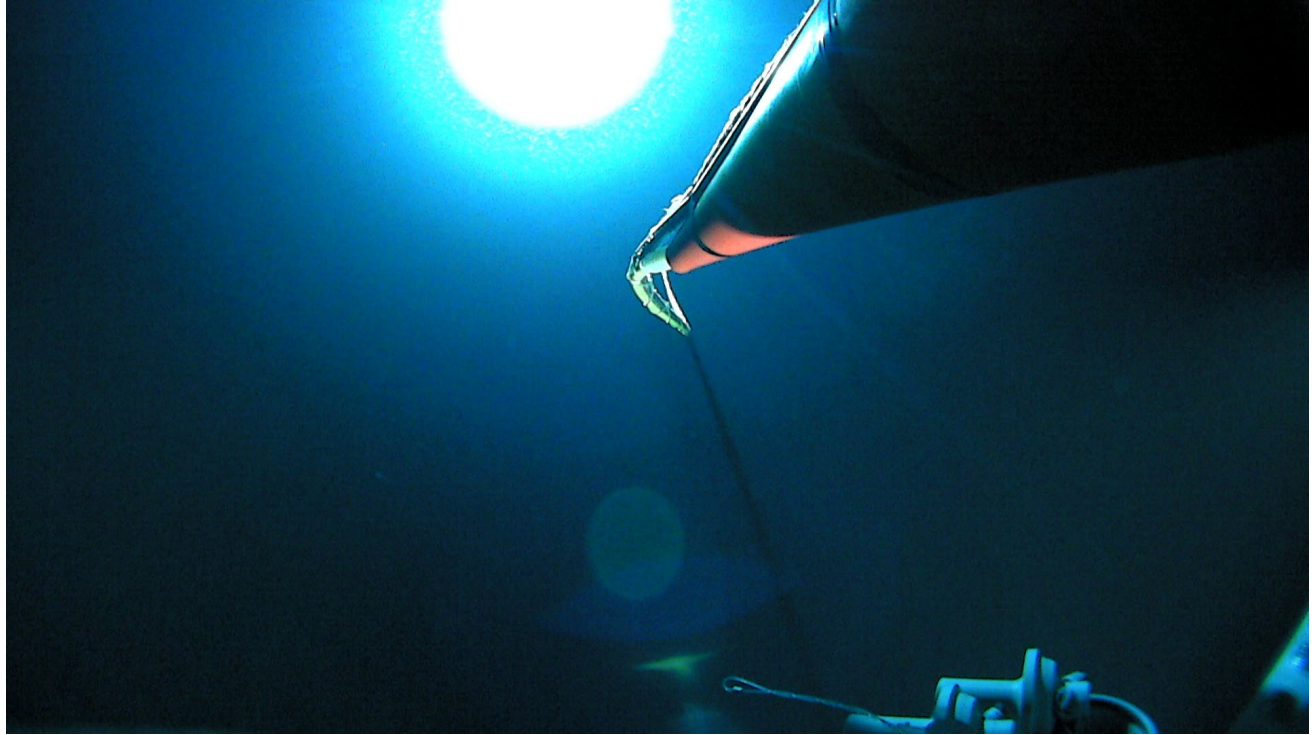
| | |
|-----------------------------|----------------|
| Sample ID | EX2107_D03_01W |
| Date (UTC) | 20211101 |
| Time (UTC) | 13:24 |
| Depth (m) | 301.75 |
| Latitude (decimal degrees) | 30.701450 |
| Longitude (decimal degrees) | -77.389310 |
| Temp. (°C) | 19.131 |
| Field ID(s) | Water Sample |
| Comments | eDNA |

| Associates Sample ID | Field Identification | Count |
|----------------------|----------------------|-------|
| N/A | N/A | N/A |



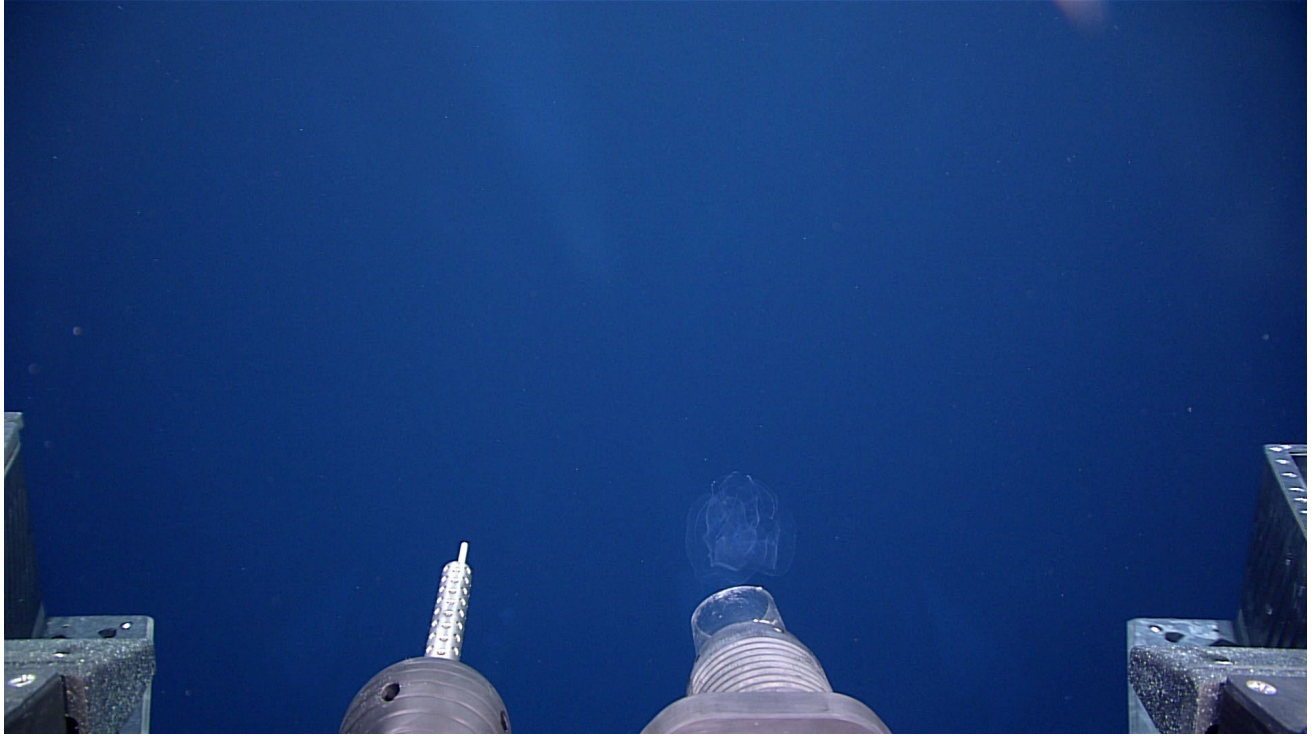
| | |
|-----------------------------|----------------|
| Sample ID | EX2107_D03_02W |
| Date (UTC) | 20211101 |
| Time (UTC) | 14:21 |
| Depth (m) | 501.544 |
| Latitude (decimal degrees) | 30.702880 |
| Longitude (decimal degrees) | -77.395470 |
| Temp. (°C) | 18.459 |
| Field ID(s) | Water Sample |
| Comments | eDNA |

| Associates Sample ID | Field Identification | Count |
|----------------------|----------------------|-------|
| N/A | N/A | N/A |



| | |
|-----------------------------|----------------|
| Sample ID | EX2107_D03_03W |
| Date (UTC) | 20211101 |
| Time (UTC) | 15:12 |
| Depth (m) | 601.597 |
| Latitude (decimal degrees) | 30.704410 |
| Longitude (decimal degrees) | -77.401990 |
| Temp. (°C) | 16.668 |
| Field ID(s) | Water Sample |
| Comments | eDNA |

| Associates Sample ID | Field Identification | Count |
|----------------------|----------------------|-------|
| N/A | N/A | N/A |



| | |
|-----------------------------|----------------|
| Sample ID | EX2107_D03_04B |
| Date (UTC) | 20211101 |
| Time (UTC) | 15:39 |
| Depth (m) | 601.958 |
| Latitude (decimal degrees) | 30.705150 |
| Longitude (decimal degrees) | -77.405400 |
| Temp. (°C) | 16.686 |

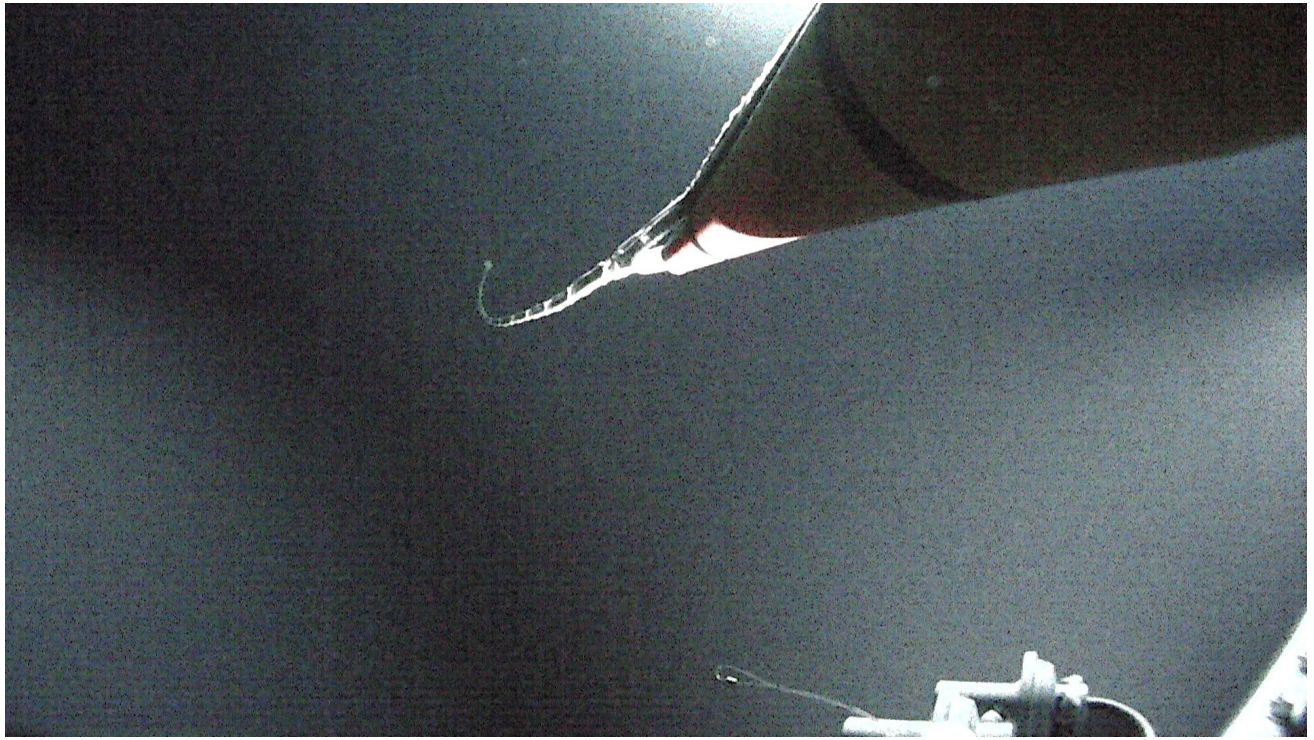
| | |
|-------------|---|
| Field ID(s) | Lobata |
| Comments | About 10 cm at collection, difficult preservation because it became very mushy during processing. |

| Associates Sample ID | Field Identification | Count |
|----------------------|----------------------|-------|
| N/A | N/A | N/A |



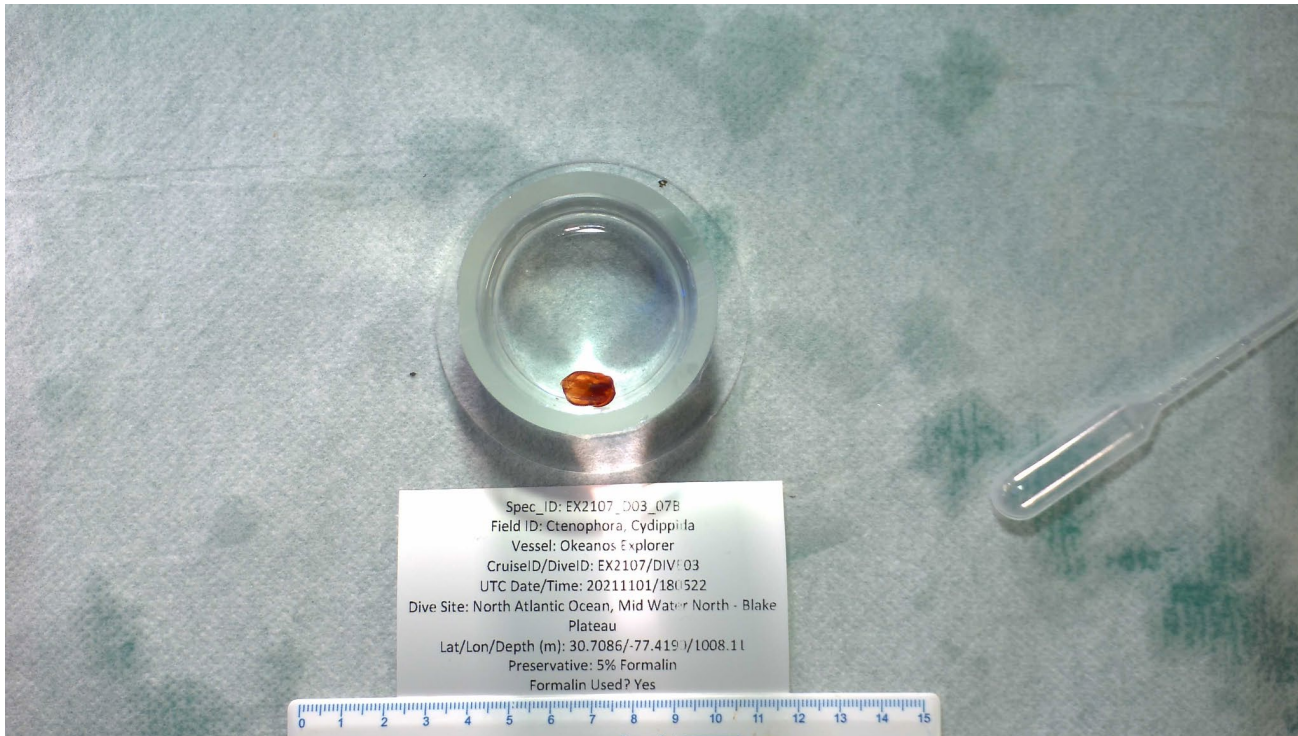
| | |
|-----------------------------|--|
| Sample ID | EX2107_D03_05B - LOST |
| Date (UTC) | 20211101 |
| Time (UTC) | 16:19 |
| Depth (m) | 702.517 |
| Latitude (decimal degrees) | 30.706200 |
| Longitude (decimal degrees) | -77.410430 |
| Temp. (°C) | 14.591 |
| Field ID(s) | Cydippida |
| Comments | Sample lost before surface; possibly a larval lobate ctenophore, still in cydippid stage. Extremely fine tentilla. |

| Associates Sample ID | Field Identification | Count |
|----------------------|----------------------|-------|
| N/A | N/A | N/A |



| | |
|-----------------------------|----------------|
| Sample ID | EX2107_D03_06W |
| Date (UTC) | 20211101 |
| Time (UTC) | 17:01 |
| Depth (m) | 902.405 |
| Latitude (decimal degrees) | 30.707580 |
| Longitude (decimal degrees) | -77.415410 |
| Temp. (°C) | 9.956 |
| Field ID(s) | Water Sample |
| Comments | eDNA |

| Associates Sample ID | Field Identification | Count |
|----------------------|----------------------|-------|
| N/A | N/A | N/A |



| | |
|-----------------------------|----------------|
| Sample ID | EX2107_D03_07B |
| Date (UTC) | 20211101 |
| Time (UTC) | 18:05 |
| Depth (m) | 1008.11 |
| Latitude (decimal degrees) | 30.708560 |
| Longitude (decimal degrees) | -77.418980 |

| | |
|-------------|---|
| Temp. (°C) | 5.372 |
| Field ID(s) | Cydippida |
| Comments | Prominent stomodeum and largemouth, but likely not <i>Bathycytena</i> because tentacles do not exit close enough to the oral end. Red color, while swimming flashes rainbow coloration, and very small. |

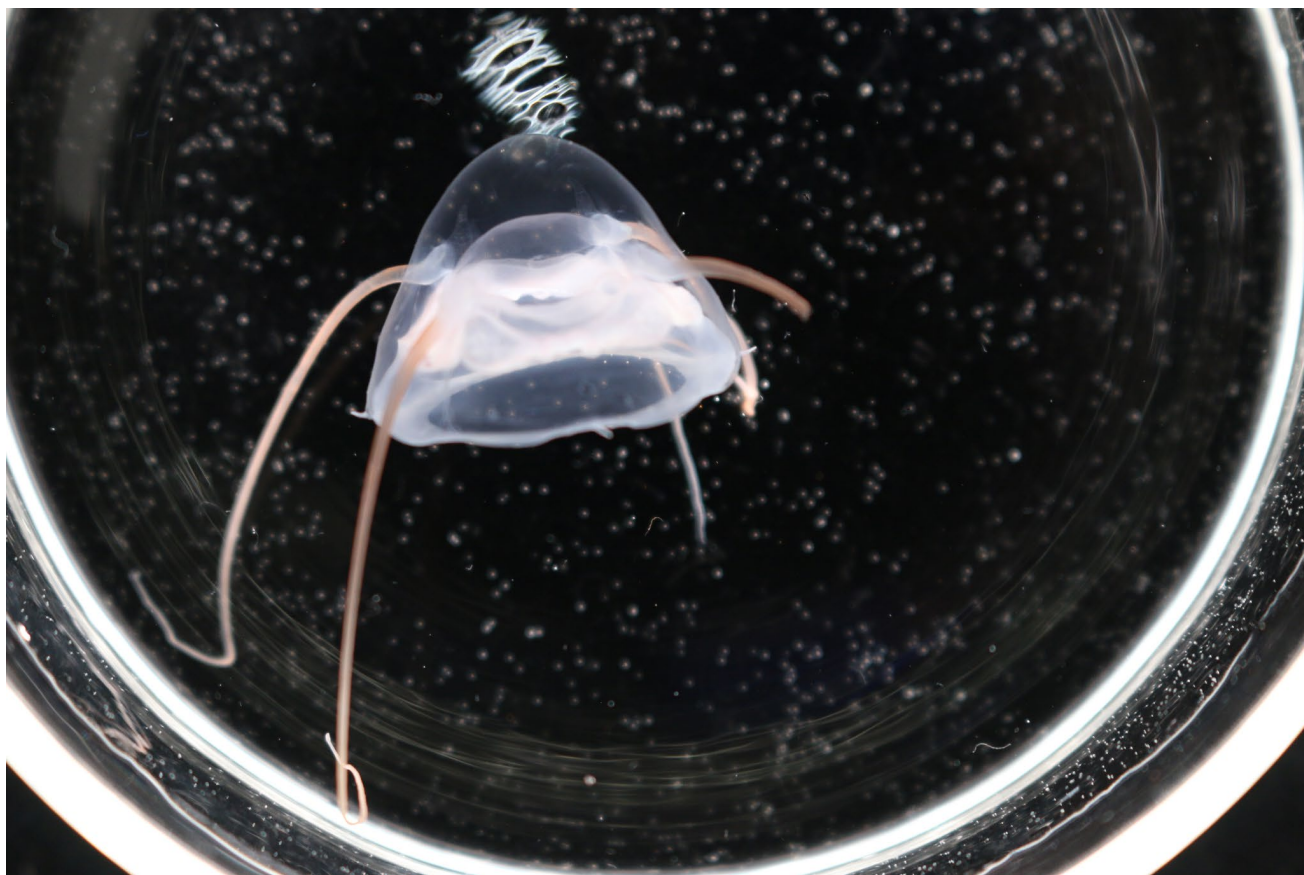
| Associates Sample ID | Field Identification | Count |
|----------------------|----------------------|-------|
| N/A | N/A | N/A |





| | |
|-----------------------------|---|
| Sample ID | EX2107_D03_08B |
| Date (UTC) | 20211101 |
| Time (UTC) | 18:11 |
| Depth (m) | 1006.827 |
| Latitude (decimal degrees) | 30.708500 |
| Longitude (decimal degrees) | -77.419070 |
| Temp. (°C) | 5.497 |
| Field ID(s) | "Ctenoceros" |
| Comments | "Ctenoceros", an unofficial name used to describe this form of cydippid ctenophore, with 4 horn-like projections at its oral end. |

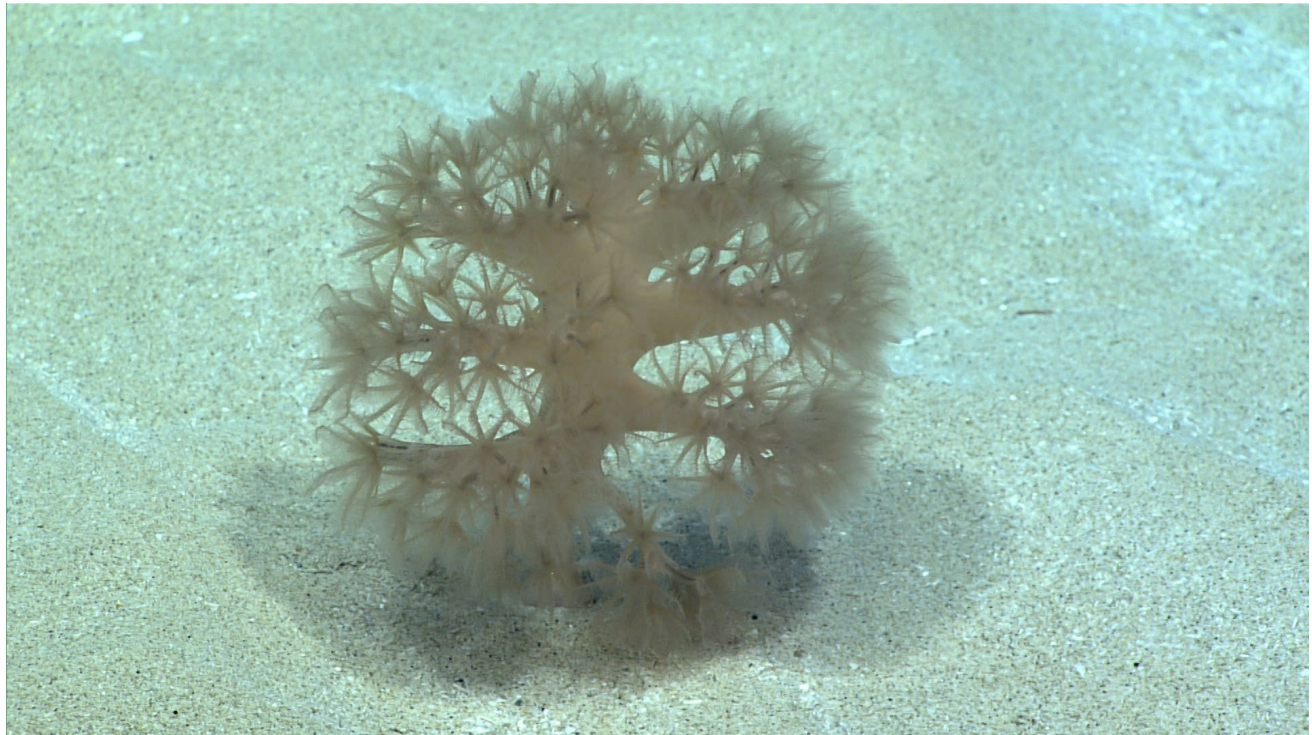
| Associates Sample ID | Field Identification | Count |
|----------------------|----------------------|-------|
| N/A | N/A | N/A |

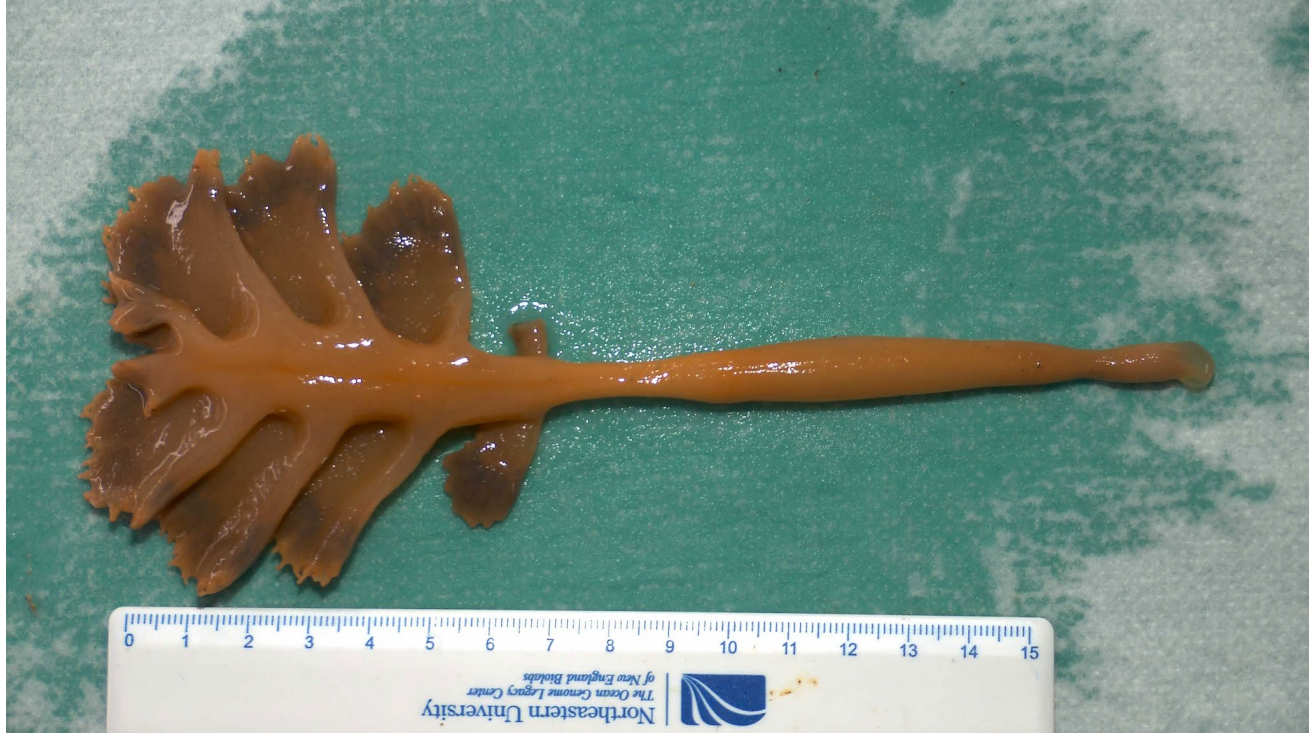


| | |
|------------|----------------|
| Sample ID | EX2107_D03_09B |
| Date (UTC) | 20211101 |
| Time (UTC) | 18:16 |
| Depth (m) | 1008.023 |

| | |
|-----------------------------|---|
| Latitude (decimal degrees) | 30.708570 |
| Longitude (decimal degrees) | -77.419090 |
| Temp. (°C) | 5.475 |
| Field ID(s) | <i>Bathykorus</i> |
| Comments | Undescribed species of <i>Bathykorus</i> ; 4 secondary tentacles, 1 tentacle used for DNA subsample |

| Associates Sample ID | Field Identification | Count |
|----------------------|----------------------|-------|
| N/A | N/A | N/A |





| | |
|-----------------------------|---|
| Sample ID | EX2107_D03_10B |
| Date (UTC) | 20211101 |
| Time (UTC) | 19:02 |
| Depth (m) | 1018.582 |
| Latitude (decimal degrees) | 30.708580 |
| Longitude (decimal degrees) | -77.419080 |
| Temp. (°C) | 4.704 |
| Field ID(s) | Pennatulacea |
| Comments | Tentacles are very fine and furry, pink or orange in color at time of collection, about 10 cm wide, with a long peduncle. |

| Associates Sample ID | Field Identification | Count |
|----------------------|----------------------|-------|
| N/A | N/A | N/A |



| | |
|-----------------------------|----------------|
| Sample ID | EX2107_D03_11B |
| Date (UTC) | 20211101 |
| Time (UTC) | 19:25 |
| Depth (m) | 1018.99 |
| Latitude (decimal degrees) | 30.708470 |
| Longitude (decimal degrees) | -77.419080 |

| | |
|-------------|--|
| Temp. (°C) | 4.708 |
| Field ID(s) | Anthoptilum |
| Comments | Red or orange in color, undescribed species. |

| Associates Sample ID | Field Identification | Count |
|----------------------|----------------------|-------|
| N/A | N/A | N/A |

Scientists Involved (provide name, email, affiliation)

| First Name | Last Name | Email | Affiliation |
|------------|------------|-----------------------------|--|
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