# ROV Dive Summary
# EX2301, Dive 03, April 19, 2023

## General Location Map


## Dive Information

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| Site Name | Deep Mendocino Flats (Shakedown) |
| General Area Descriptor | Relatively flat bottom, likely sedimented area around 4000m |
| Science Team Leads | Alexis Weinnig, Paige Koenig |

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| Expedition Coordinator | Thomas Morrow |
| ROV Dive Supervisor | Chris Ritter |
| Sample Data Manager | Caitlin Ruby, Ashley Marranzino |
| Mapping Lead | N/A |
| Dive Purpose | ROV Engineering Shakedown |
| Maritime Heritage Restrictions | No |
| ROV Dive Summary Data | Dive Summary: EX2301_DIVE03<br>^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^<br>Dive Type: Normal<br><br>In Water: 2023-04-19T15:30:51.831441<br>nan ; nan<br><br>On Bottom: 2023-04-19T18:06:15.850551<br>40.13370182238214 ; -126.12657064065588<br><br>Off Bottom: 2023-04-19T21:13:49.060309<br>40.13322279542884 ; -126.1256159317258<br><br>Out Water: 2023-04-19T23:46:05.187970<br>40.131794719064445 ; -126.13532644773515<br><br>Dive Duration: 8:15:13<br><br>Bottom Time: 3:07:33<br><br>Max Vehicle Depth: 3955.8 m<br><br>Min Seafloor Depth: 3945.4 m<br><br>Distance Travelled: 170.9 m |
| Dive Description | Soft sediment bottom with a few types of echinoderms (sea pig: *Elasipodida*, sea cucumber: *Psychropotes sp.*, swimming *Peniagone sp.*, unidentified white sea cucumber, urchins from the family *Pourtalesiidae: Echinocrepis sp, Cystocrepis sp.*, and *Brisingid* seastars), a few small sponges (likely a stalked *Euplectellidae*, possibly *Hyalonema*), Xenophyophores, benthic ctenophores (*Lyrocteis sp.*), and a *Bathyalcyon robustum* coral with two polyps. There were a few fish from the family *Macrouridae*. One biological collection of a zoanthid growing on a dead sponge stalk was completed as well as five niskins a few meters off the seafloor. |
| Notable Observations | Several *cystocrepis* |

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| Community and Habitat Observations | Corals and Sponges — Present<br>Chemosynthetic Community — Absent<br>High biodiversity Community — Absent<br>Active Seep or Vent — Absent<br>Extinct Seep or Vent — Absent<br>Hydrates — Absent |
| CMECS Feature Type(s) | Flat bottom composed of silty, unconsolidated sediment |
| SeaTube Link (science annotations) | https://data.oceannetworks.ca/SeaTubeV3?resourceTypeId=600&resourceId=2773 |

## Equipment Deployed

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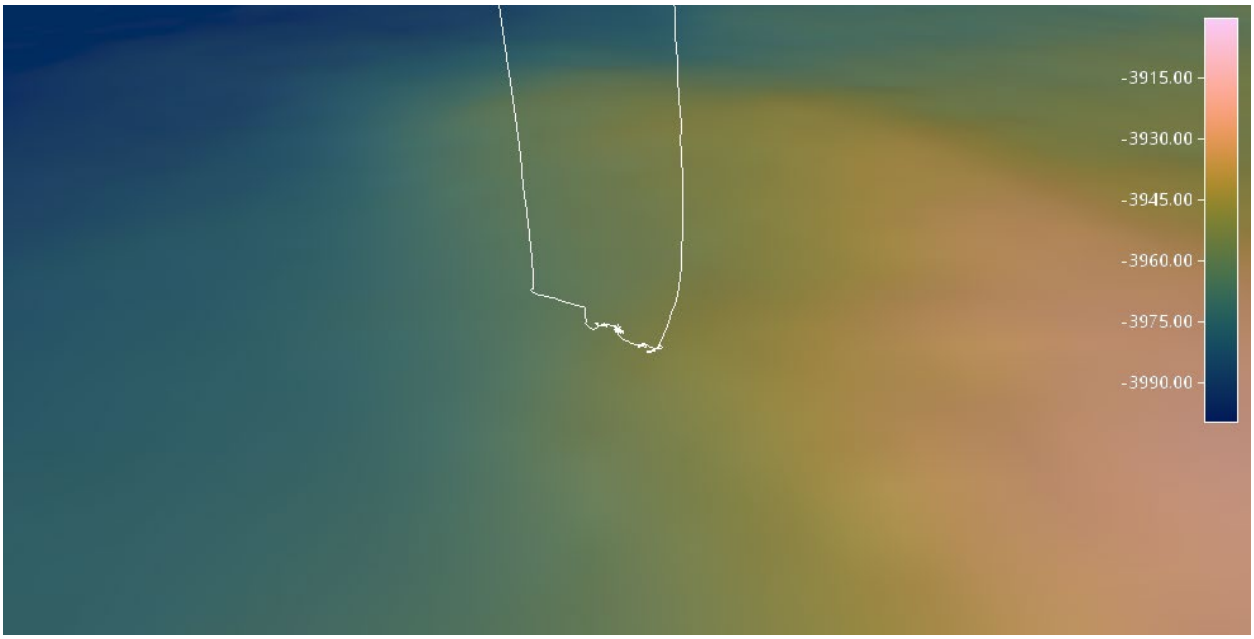
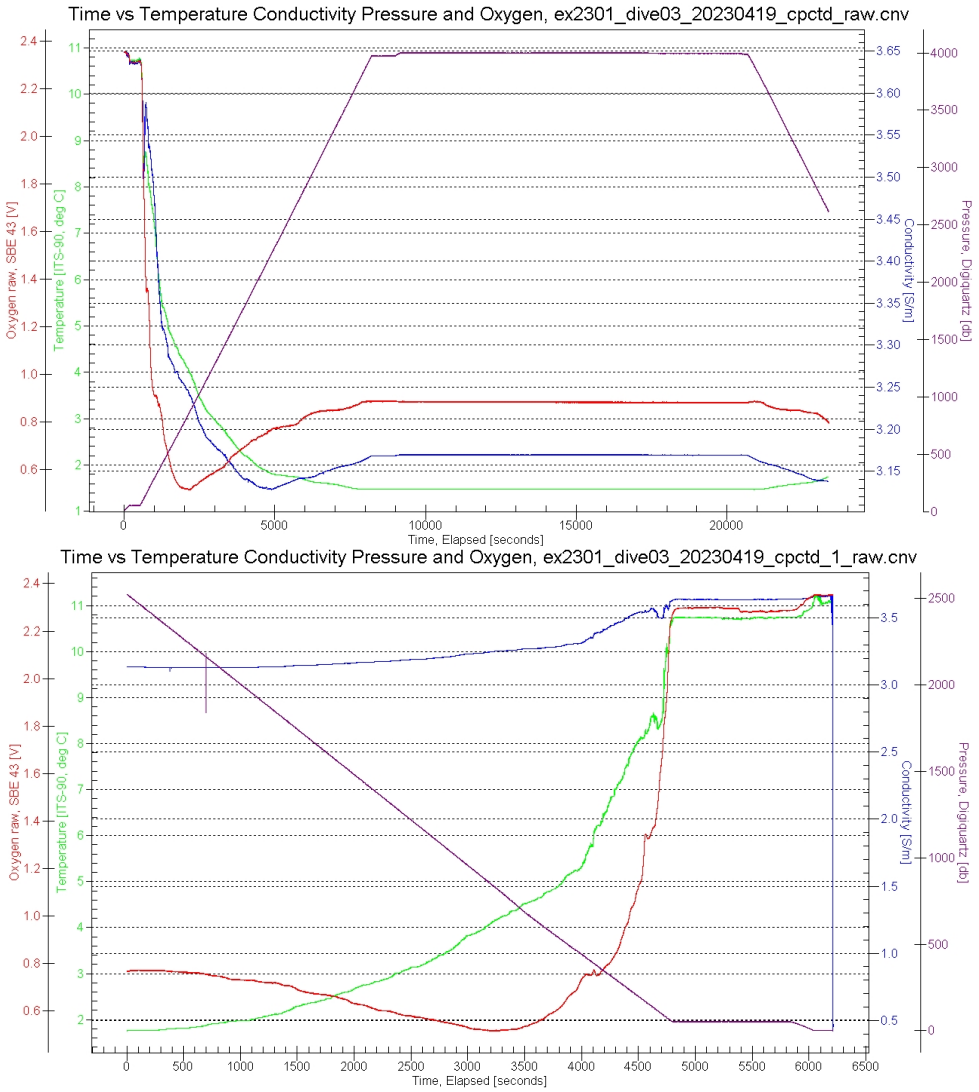
|---|---|
| ROV | *Deep Discoverer* |
| Camera Platform | *Seirios* |
| ROV Measurements | The following ROV measurements, data streams and equipment are used on each ROV deployment: CTD, depth, scanning sonar, USBL position, altitude, heading, attitude, high-resolution cameras, low resolution cameras,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

## Close-Up Map of Main Dive Site



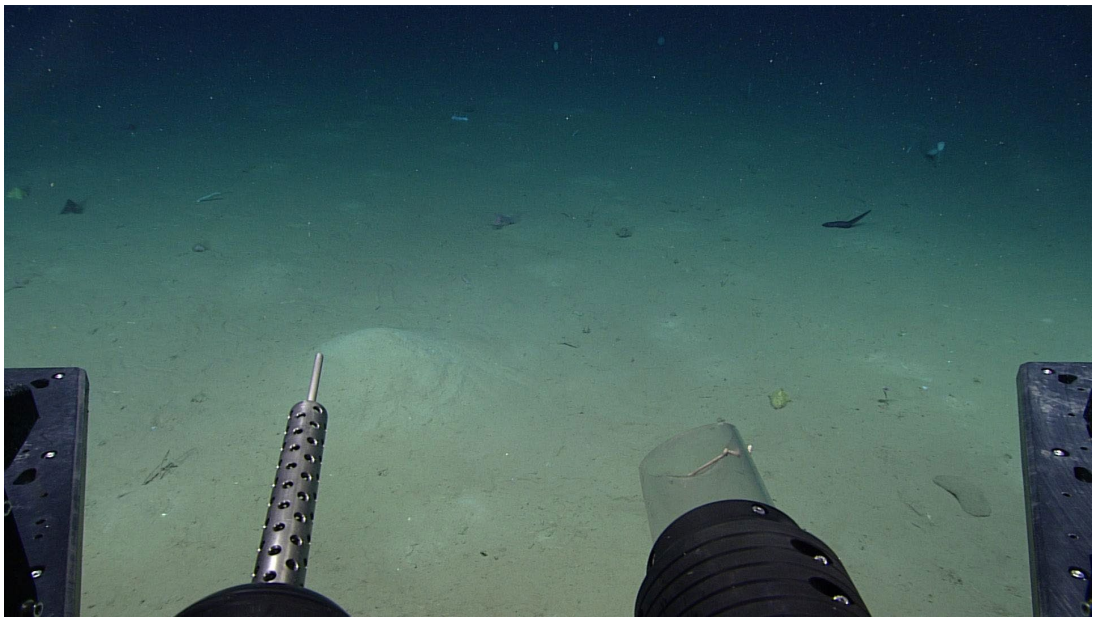

Main dive site for ROV shakedown on 50m bathymetry, depth in meters. 2X vertical exaggeration

# Sound Speed Manager Image of ROV CTD Profile

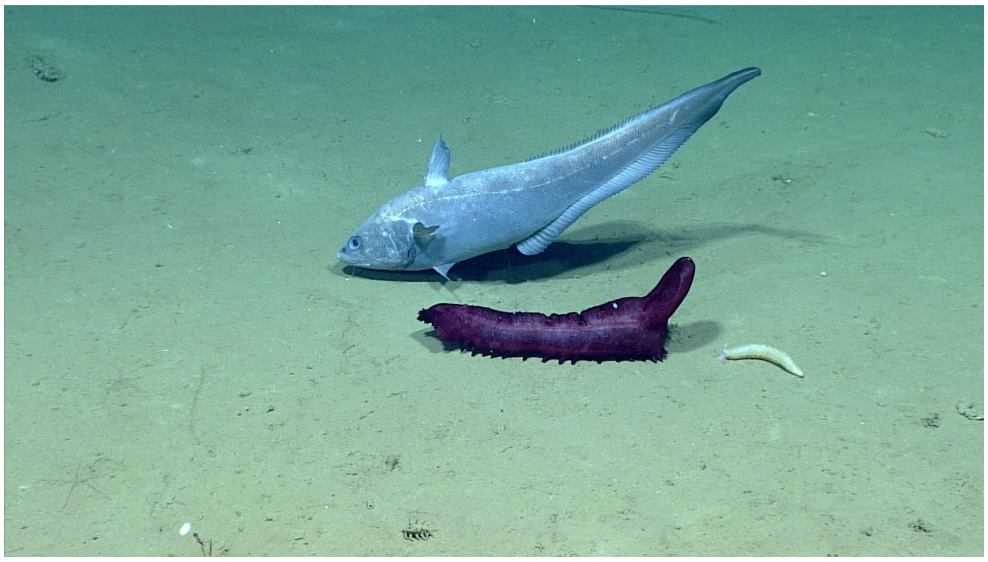



ROV CTD profiles for Dive 03. Multiple plots due to file split.

## Representative Photos of the Dive



Dive site included a heavily sedimented bottom with scattered pyramid urchins, sea cucumbers, Xenophyophores, and Macrouridae fish. There were mounds in the sediment, likely biological.



Sablefish and sea cucumber. Sablefish were common at this dive site.

Close up of pyramid urchins (Echinocrepis). Several pyramid urchins in different colors were found at this site.

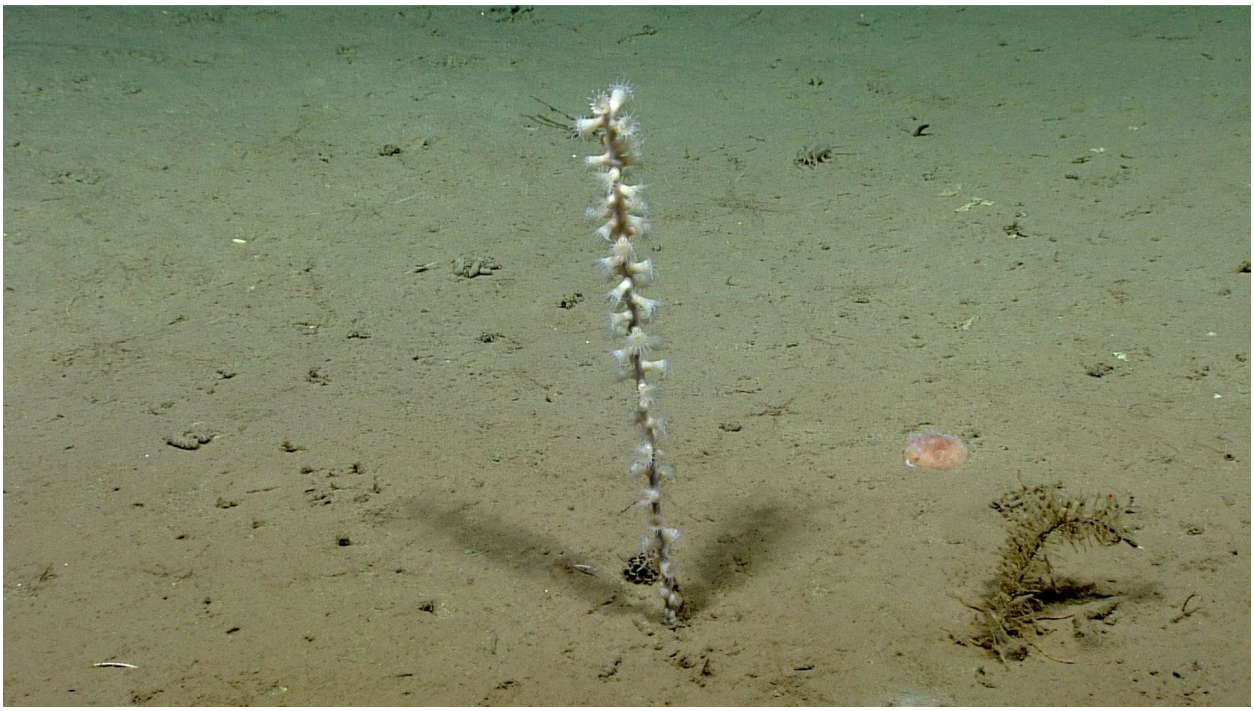
Close up of pyramid urchins (Echinocrepis). Several pyramid urchins in different colors were found at this site.

Close up of benthic ctenophore.

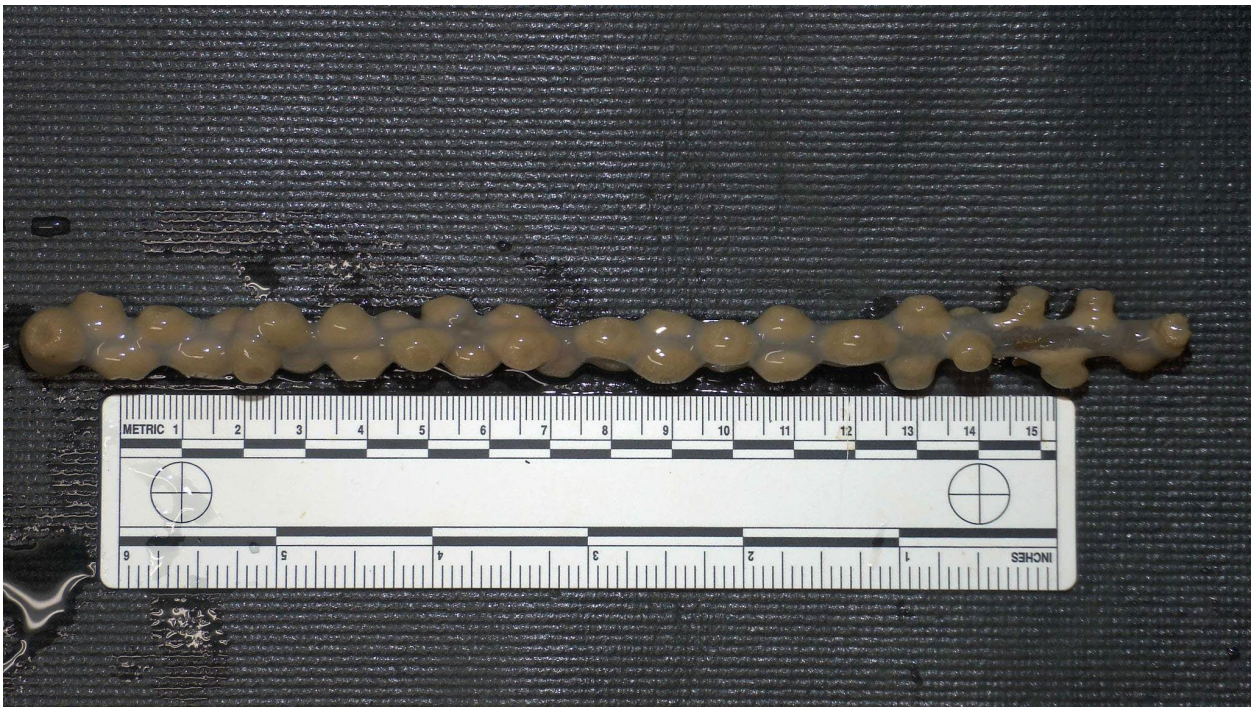
[Caption]

## Samples Collected

Zoanthidea *in situ*. Close-up of polyps.



Zoanthidea *in situ* prior to collection.




Zoanthidea after recovery with scale bar in lab photograph.

| | |
|---|---|
| Sample ID | EX2301_D03_01B |
| Date (UTC) | 04-19-2023 |
| Time (UTC) | 19:58:56 |
| Depth (m) | 3952.426 |
| Latitude (decimal degrees) | 40.133655 |
| Longitude (decimal degrees) | -126.126149 |
| Temp. (°C) | 1.515 |
| Field ID(s) | Zoanthidea |
| Comments | Cream colored polyps growing on sponge stalk. Total sample approximately 17cms long. Each polyp approximately 1cm in length. |

| Associates Sample ID | Field Identification | Count |
|---|---|---|
| n/a | | |

## Niskin Sampling Summary

| | |
|---|---|
| Sample ID | EX2301_D03_02W |
| Date (UTC) | 20230419 |
| Time (UTC) | 205906 |
| Depth (m) | 3948.44 |
| Latitude (decimal degrees) | 40.1331443786621 |
| Longitude (decimal degrees) | -126.125747680664 |
| Bottle Number | 1 |
| Temperature (°C) | 1.49300003051758 |
| Dissolved Oxygen (ml/L) | 3.77600002288818 |
| Treatment | 1.75 L collected, 1 L filtered through 0.22µm filter. Filter stored in freezer. |

| | |
|---|---|
| Sample ID | EX2301_D03_03W |
| Date (UTC) | 20230419 |
| Time (UTC) | 210005 |
| Depth (m) | 3948.79 |
| Latitude (decimal degrees) | 40.1331748962402 |
| Longitude (decimal degrees) | -126.125686645508 |
| Bottle Number | 2 |
| Temperature (°C) | 1.49199998378754 |
| Dissolved Oxygen (ml/L) | 3.61100006103516 |
| Treatment | 1.75 L collected, 1 L filtered through 0.22µm filter. Filter stored in freezer. |

| | |
|---|---|
| Sample ID | EX2301_D03_04W |
| Date (UTC) | 20230419 |
| Time (UTC) | 210103 |
| Depth (m) | 3947.98 |

| | |
|---|---|
| Latitude (decimal degrees) | 40.1331825256348 |
| Longitude (decimal degrees) | -126.125671386719 |
| Bottle Number | 3 |
| Temperature (°C) | 1.49300003051758 |
| Dissolved Oxygen (ml/L) | 3.68099999427795 |
| Treatment | 1.75 L collected, 1 L filtered through 0.22µm filter. Filter stored in freezer. |

| | |
|---|---|
| Sample ID | EX2301_D03_05W |
| Date (UTC) | 20230419 |
| Time (UTC) | 210203 |
| Depth (m) | 3947.63 |
| Latitude (decimal degrees) | 40.1331939697266 |
| Longitude (decimal degrees) | -126.12548828125 |
| Bottle Number | 4 |
| Temperature (°C) | 1.49000000953674 |
| Dissolved Oxygen (ml/L) | 3.63599991798401 |
| Treatment | 1.75 L collected, 1 L filtered through 0.22µm filter. Filter stored in freezer. |

| | |
|---|---|
| Sample ID | EX2301_D03_06W |
| Date (UTC) | 20230419 |
| Time (UTC) | 210303 |
| Depth (m) | 3947.47 |
| Latitude (decimal degrees) | 40.1331939697266 |
| Longitude (decimal degrees) | -126.125541687012 |
| Bottle Number | 5 |
| Temperature (°C) | 1.48599994182587 |
| Dissolved Oxygen (ml/L) | 3.6800000667572 |
| Treatment | 1.75 L collected, 1 L filtered through 0.22µm filter. Filter stored in freezer. |

| | |
|---|---|
| Sample ID | EX2301_D03_BLW |
| Date (UTC) | 20230419 |
| Treatment | 500 mL distilled water filtered through 0.22µm filter. Filter stored in freezer. |

## Scientists Involved

| Name | Email | Affiliation |
|---|---|---|
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