ROV Dive Summary EX2301, Dive 02, April 17, 2023

General Location Map



Dive Information

| Site Name | Mendocino Flats (Shakedown) |
|----------------------------|---|
| General Area Descriptor | Relatively flat bottom, likely sedimented area around 1000m |
| Science Team Leads | Alexis Weinnig, Paige Koenig |
| 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_DIVE02 ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^ |
| | Distance Traveled: 74.5 m |
| Dive Description | This was the second ROV engineering shakedown dive on silty, unconsolidated sediment bottom with a constant spattering of brittle stars (likely a few different genera; Some sablefish (<i>Anoplopoma fimbria</i>) along the bottom, a couple flounder (<i>Pleuronectiformes</i>), hagfish (<i>Myxinidae</i>), and a skate (<i>Rajidae</i>). All five niskins were triggered to collect water samples on the ascent. The ground site is level with little to no relief at approximately ~1000m depth. |
| Notable Observations | Several sebastolobus fish |
| Community and Habitat Observations | Corals and Sponges — Absent Chemosynthetic Community — Absent High biodiversity Community — Absent Active Seep or Vent — Absent Extinct Seep or Vent — Absent Hydrates — Absent |



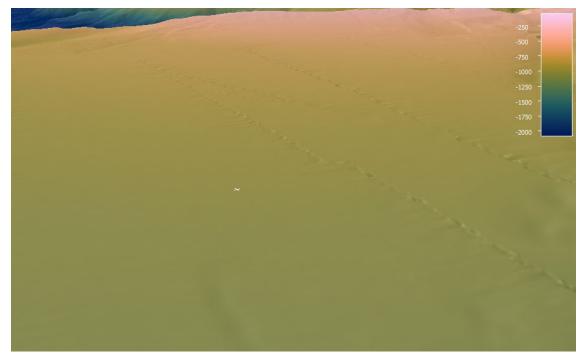
| CMECS Feature Type(s) | Flat bottom composed of silty, unconsolidated sediment |
|------------------------------------|--|
| SeaTube Link (science annotations) | https://data.oceannetworks.ca/SeaTubeV3?resourceTypeId=600 &resourceId=2763 |

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 following row notes if any of these sensors were malfunctioning or not operational |
| Equipment Malfunctions | |

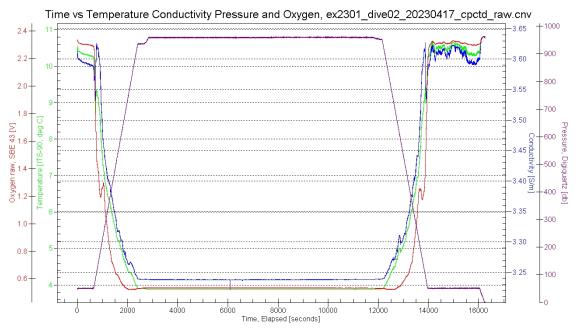


Close-Up Map of Main Dive Site



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

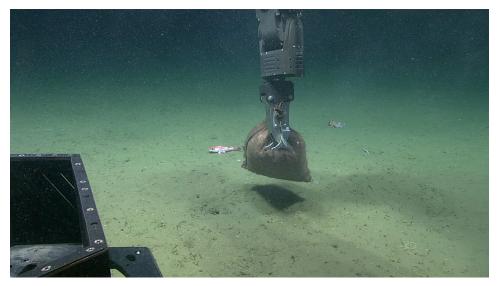
Sound Speed Manager Image of ROV CTD Profile



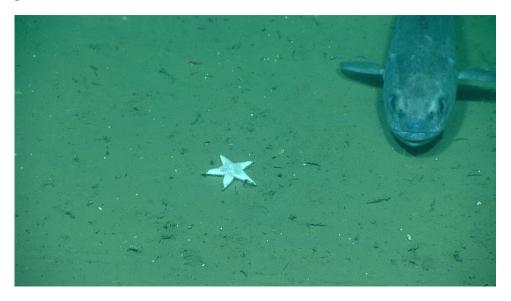
ROV CTD profile for Dive 02



Representative Photos of the Dive



ROV engineering team practicing with the manipulator arm. Thorny head fish, located in the background, were common at this dive site.



Several sea stars were found at this dive site, including this sea star imaged here.





Swimming sablefish joined by a thorny head which were fairly common on this dive.

Samples Collected

Niskin Sampling Summary

| Sample ID | EX2301_D02_01W |
|-----------------------------|---|
| Date (UTC) | 20230417 |
| Time (UTC) | 20:09:01 |
| Depth (m) | 843.5440063 |
| Latitude (decimal degrees) | 40.17287064 |
| Longitude (decimal degrees) | -124.8924789 |
| Bottle Number | NISKIN 1 |
| Temperature (°C) | 4.09100008 |
| Dissolved Oxygen (ml/L) | 0.833999991 |
| Treatment | 1.75 L collected, 1 L filtered through 0.22µm filter. Filter stored in freezer. |

| Sample ID | EX2301_D02_02W |
|------------|----------------|
| Date (UTC) | 20230417 |



| Time (UTC) | 20:09:50 |
|-----------------------------|---|
| Depth (m) | 820.188 |
| Latitude (decimal degrees) | 40.17288971 |
| Longitude (decimal degrees) | -124.8924713 |
| Bottle Number | NISKIN 2 |
| Temperature (°C) | 4.171999931 |
| Dissolved Oxygen (ml/L) | 0.643999994 |
| Treatment | 1.75 L collected, 1 L filtered through 0.22μm filter. Filter stored in freezer. |

| Sample ID | EX2301_D02_03W |
|-----------------------------|---|
| Date (UTC) | 20230417 |
| Time (UTC) | 20:10:23 |
| Depth (m) | 804.5050049 |
| Latitude (decimal degrees) | 40.17287827 |
| Longitude (decimal degrees) | -124.8924942 |
| Bottle Number | NISKIN 3 |
| Temperature (°C) | 4.204999924 |
| Dissolved Oxygen (ml/L) | 0.623000026 |
| Treatment | 1.75 L collected, 1 L filtered through 0.22µm filter. Filter stored in freezer. |

| Sample ID | EX2301_D02_04W |
|-----------------------------|----------------|
| Date (UTC) | 20230417 |
| Time (UTC) | 20:11:25 |
| Depth (m) | 777.90802 |
| Latitude (decimal degrees) | 40.17290497 |
| Longitude (decimal degrees) | -124.8924332 |
| Bottle Number | NISKIN 4 |
| Temperature (°C) | 4.303999901 |



| Dissolved Oxygen (ml/L) | 0.474000007 |
|-------------------------|---|
| Treatment | 1.75 L collected, 1 L filtered through 0.22μm filter. Filter stored in freezer. |

| Sample ID | EX2301_D02_05W |
|-----------------------------|---|
| Date (UTC) | 20230417 |
| Time (UTC) | 20:12:14 |
| Depth (m) | 755.2329712 |
| Latitude (decimal degrees) | 40.17289734 |
| Longitude (decimal degrees) | -124.8924484 |
| Bottle Number | NISKIN 5 |
| Temperature (°C) | 4.372000217 |
| Dissolved Oxygen (ml/L) | 0.50999999 |
| Treatment | 1.75 L collected, 1 L filtered through 0.22μm filter. Filter stored in freezer. |

| Sample ID | EX2301_D02_BLW |
|------------|---|
| Date (UTC) | 20230417 |
| Treatment | 500 mL of distilled water filtered through 0.22µm filter. Filter stored in freezer. |

Scientists Involved

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