

# ROV Dive Summary

## EX2301, Dive 01, April 15, 2023

### General Location Map



### Dive Information

Site Name	Tillamook Flats (Shakedown)
General Area Descriptor	Relatively flat bottom, likely sedimented area around 600m
Science Team Leads	Alexis Weinnig, Paige Koenig
Expedition Coordinator	Thomas Morrow

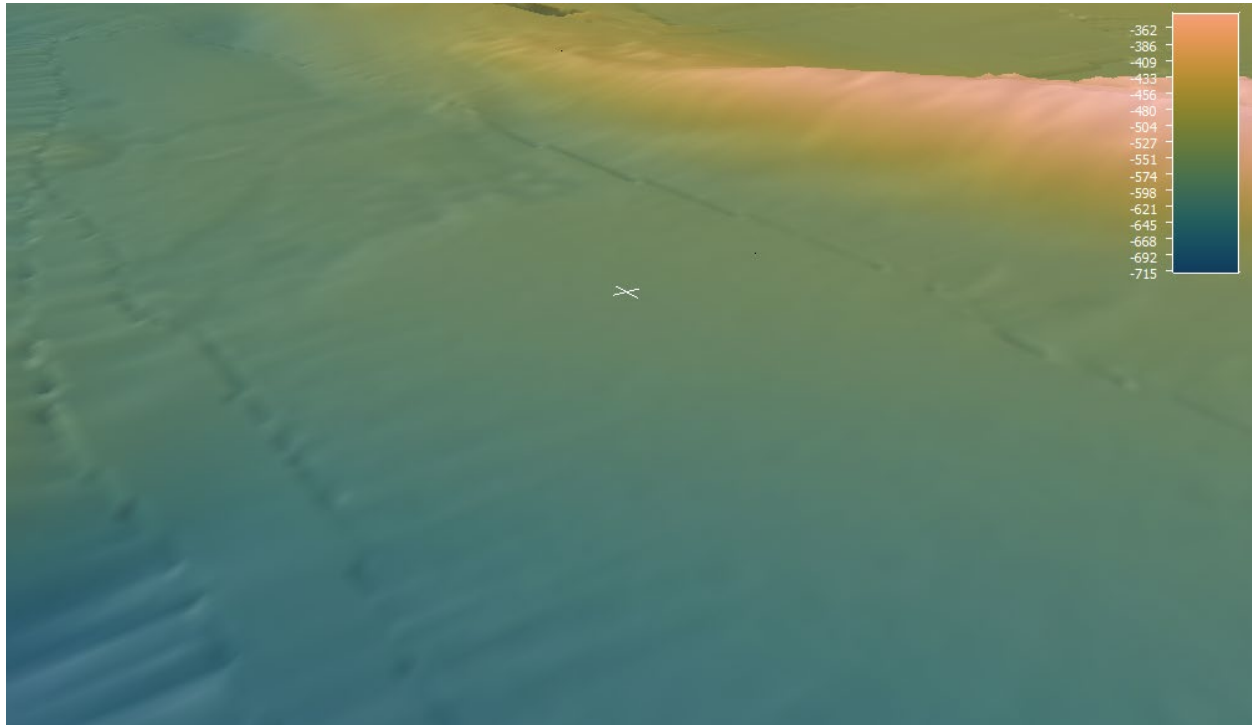
ROV Dive Supervisor	Chris Ritter
Sample Data Manager	Caitlin Ruby, Ashley Marranzino
Mapping Lead	N/A
Dive Purpose	ROV Engineering Shakedown
Maritime Heritage Restrictions	No
ROV Dive Summary Data	<p>Dive Summary: EX2301_DIVE01            ^^^</p> <p>Dive Type: Normal</p> <p>In Water: 2023-04-15T15:32:14.962443            45.46916750588289 ; -124.75487815294107</p> <p>On Bottom: 2023-04-15T16:03:01.585619            45.468238914563365 ; -124.75657591080105</p> <p>Off Bottom: 2023-04-15T23:26:29.224040            45.46337140569854 ; -124.75399747088548</p> <p>Out Water: 2023-04-15T23:37:57.094805            45.46133801357202 ; -124.75389987619788</p> <p>Dive Duration: 8:05:42</p> <p>Bottom Time: 7:23:27</p> <p>Max Vehicle Depth: 657.4 m</p> <p>Min Seafloor Depth: 555.0 m</p> <p>Distance Traveled: 540.5 m</p>
Dive Description	<p>This was the first ROV engineering shakedown dive on silty, unconsolidated sediment bottom with a constant spattering of brittle stars (likely a few different genera; <i>Ophiosuma</i>, possibly <i>Stegorphiura</i>, possibly <i>Amphiophiura</i>) and fragile sea urchins (<i>Strongylocentrotus fragilis</i>) and a few <i>solasteridae</i> sea stars (one in a feeding posture). Many sablefish (<i>Anoplopoma fimbria</i>) along the bottom and a few flounder (<i>Pleuronectiformes</i>). We saw a strawberry squid (<i>Stigmatoteuthis dofleini</i>) at the beginning of the dive. The ground site is level with little to no relief at approximately ~600m depth.</p>
Notable Observations	Strawberry squid ( <i>Stigmatoteuthis dofleini</i> ), a lot of sablefish

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)	<a href="https://data.oceannetworks.ca/SeaTubeV3?resourceTypeId=600&amp;resourceId=2753">https://data.oceannetworks.ca/SeaTubeV3?resourceTypeId=600&amp;resourceId=2753</a>

## Equipment Deployed

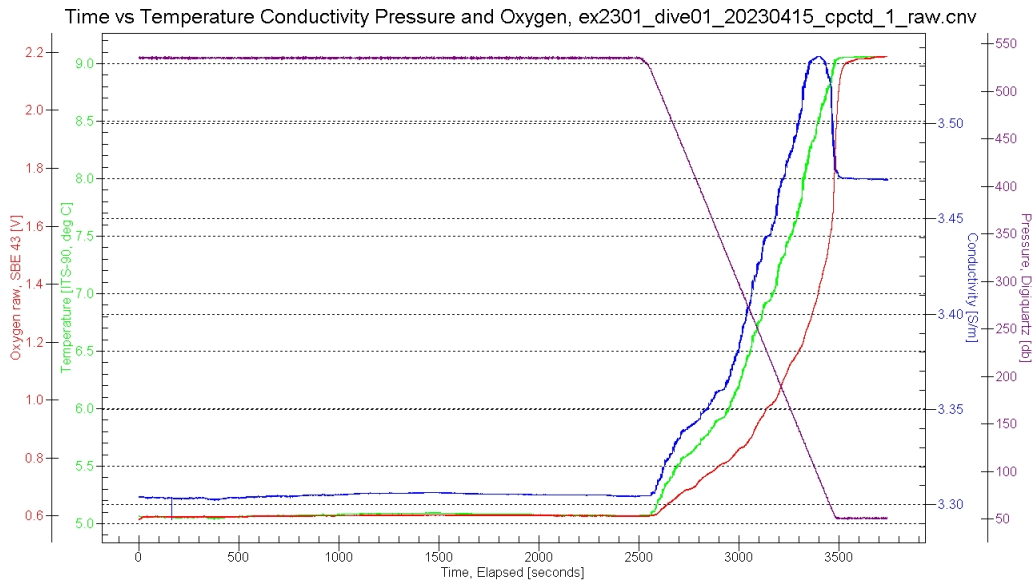
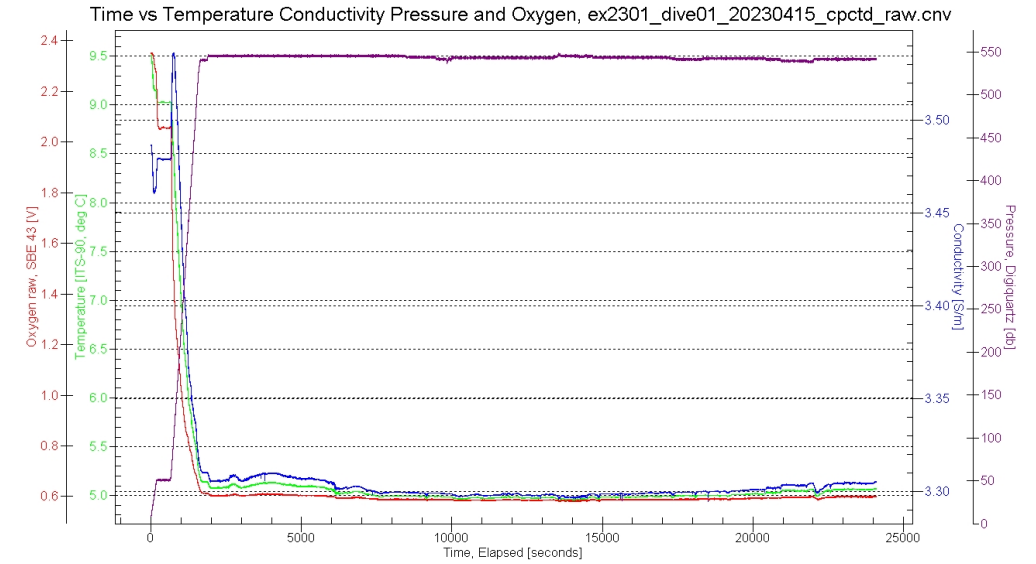
ROV	<i>Deep Discoverer</i>
Camera Platform	<i>Seirios</i>
ROV Measurements	The following ROV measurements, data streams and equipment are used on each ROV deployment: CTD, depth, scanning sonar, USBL position, altitude, heading, attitude, high-resolution cameras, low resolution cameras, manipulator arms,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

## Close-Up Map of Main Dive Site



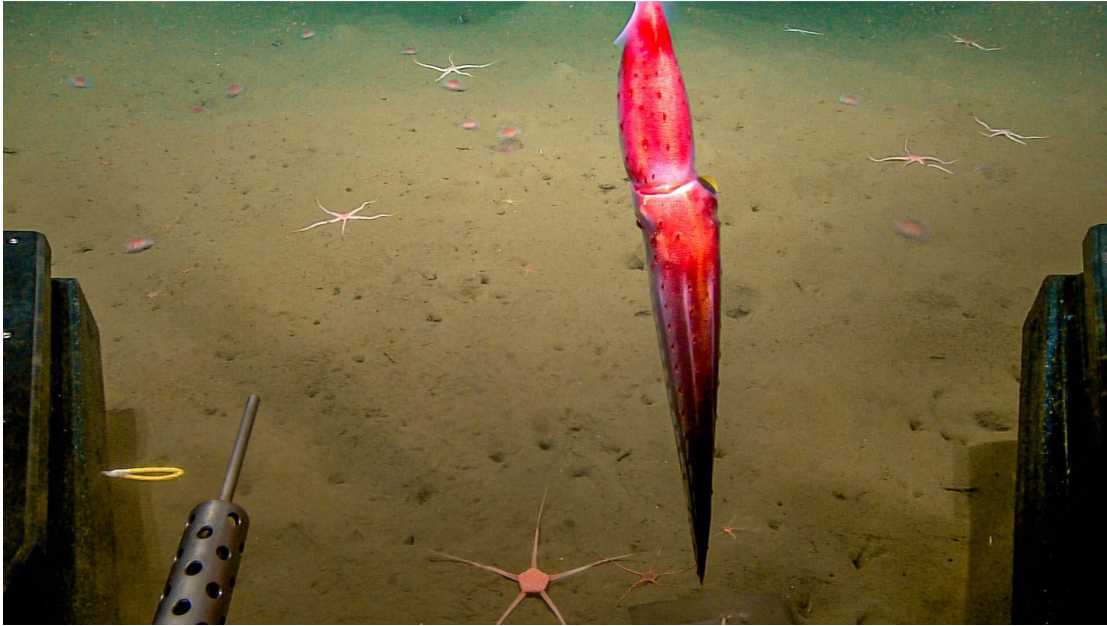
Main dive site for ROV shakedown on 25m bathymetry, depth in meters.

# Sound Speed Manager Image of ROV CTD Profile

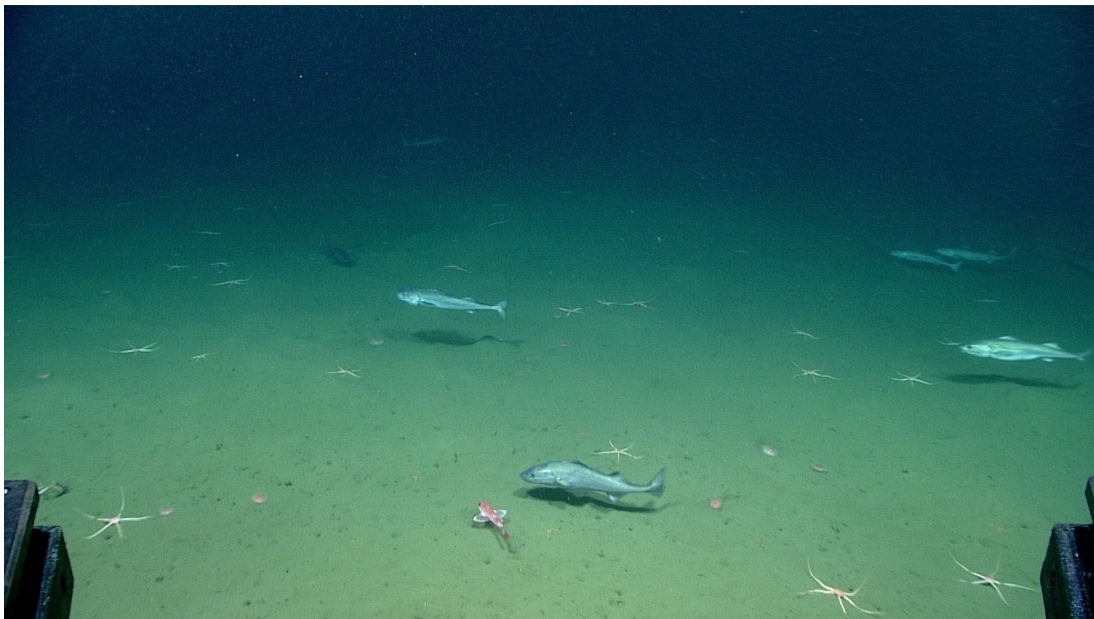


ROV CTD profiles for Dive 01. A file split generated two plots.

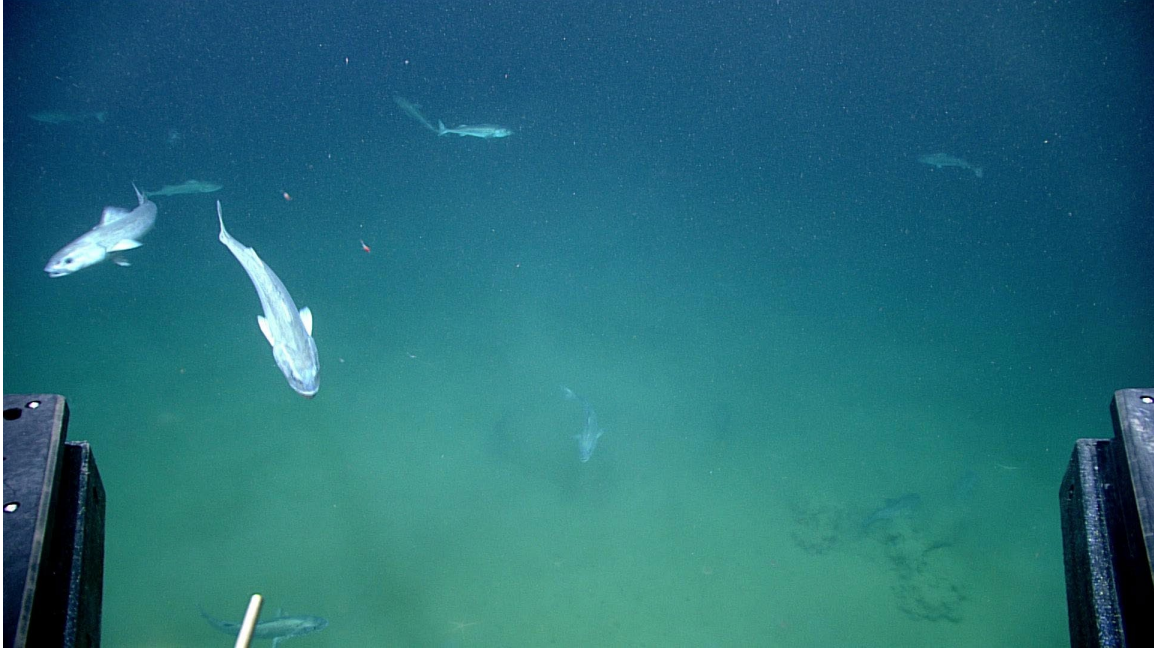
## Representative Photos of the Dive



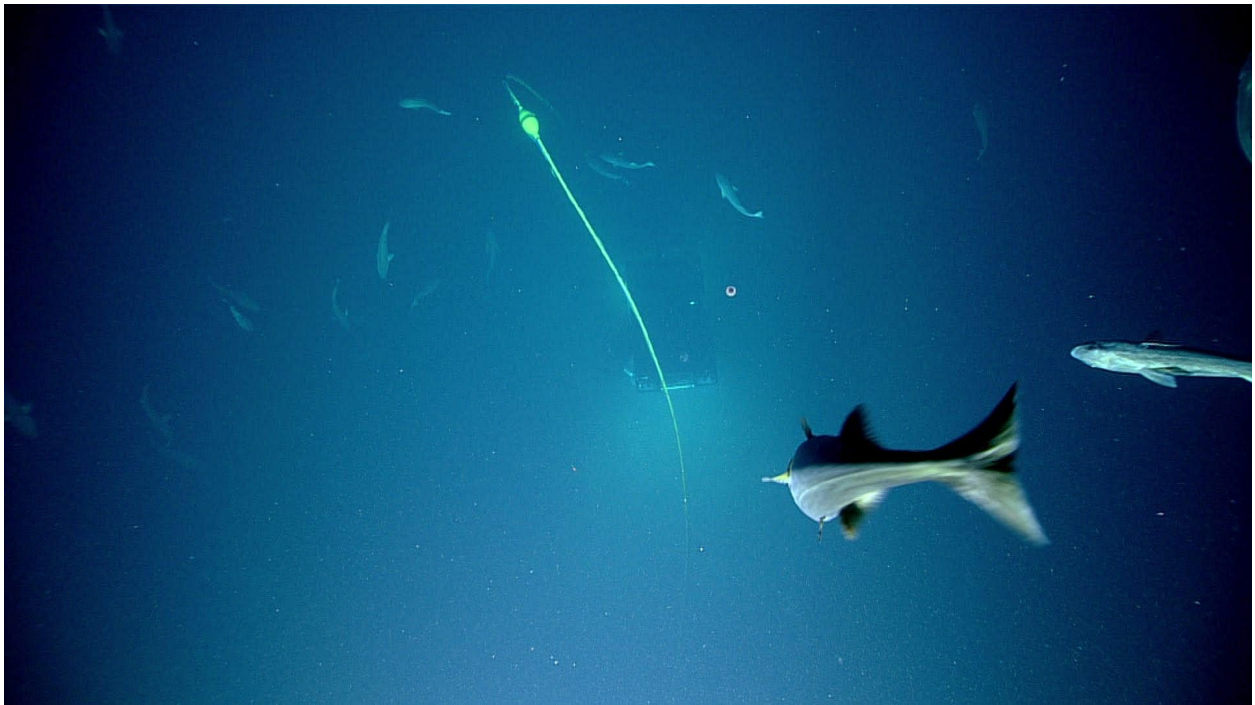
Strawberry squid encounter upon arriving on bottom.



Sable fish, thorny heads, and brittle stars scattered along the muddy bottom.



Sablefish kicking up sediment, obscuring the ROV video.



A mass of sablefish surrounding D2 as viewed from Serios.

# Samples Collected

## Niskin Sampling Summary

Sample ID	EX2301_D01_01W
Date (UTC)	20230415
Time (UTC)	18:10:05
Depth (m)	558.154
Latitude (decimal degrees)	45.46655273
Longitude (decimal degrees)	-124.7556
Bottle Number	NISKIN 1
Temperature (°C)	4.941999912
Dissolved Oxygen (ml/L)	0.606000006
Treatment	1.75 L collected, 1 L filtered through 0.22µm filter. Filter stored in freezer.

Sample ID	EX2301_D01_02W
Date (UTC)	20230415
Time (UTC)	18:11:45
Depth (m)	554.641
Latitude (decimal degrees)	45.46650696
Longitude (decimal degrees)	-124.7556763
Bottle Number	NISKIN 2
Temperature (°C)	4.941999912
Dissolved Oxygen (ml/L)	0.60799998
Treatment	1.75 L collected, 1 L filtered through 0.22µm filter. Filter stored in freezer.

Sample ID	EX2301_D01_03W
Date (UTC)	20230415
Time (UTC)	18:14:31
Depth (m)	558.418



Latitude (decimal degrees)	45.466362
Longitude (decimal degrees)	-124.7556
Bottle Number	NISKIN 3
Temperature (°C)	4.941999912
Dissolved Oxygen (ml/L)	0.572000027
Treatment	1.75 L collected, 1 L filtered through 0.22µm filter. Filter stored in freezer.

Sample ID	EX2301_D01_04W
Date (UTC)	20230415
Time (UTC)	18:17:29
Depth (m)	553.306
Latitude (decimal degrees)	45.4662170410156
Longitude (decimal degrees)	-124.7554016
Bottle Number	NISKIN 4
Temperature (°C)	4.943999767
Dissolved Oxygen (ml/L)	0.552999973
Treatment	1.75 L collected, 1 L filtered through 0.22µm filter. Filter stored in freezer.

Sample ID	EX2301_D01_05W
Date (UTC)	20230415
Time (UTC)	18:19:31
Depth (m)	556.764
Latitude (decimal degrees)	45.46608353
Longitude (decimal degrees)	-124.7554855
Bottle Number	NISKIN 3
Temperature (°C)	4.940999985
Dissolved Oxygen (ml/L)	0.61500001
Treatment	1.75 L collected, 1 L filtered through 0.22µm filter. Filter stored in freezer.

Sample ID	EX2301_D01_BLW
Date (UTC)	20230415
Treatment	500 mL of distilled water filtered through 0.22µm filter. Filter stored in freezer.

## Scientists Involved

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