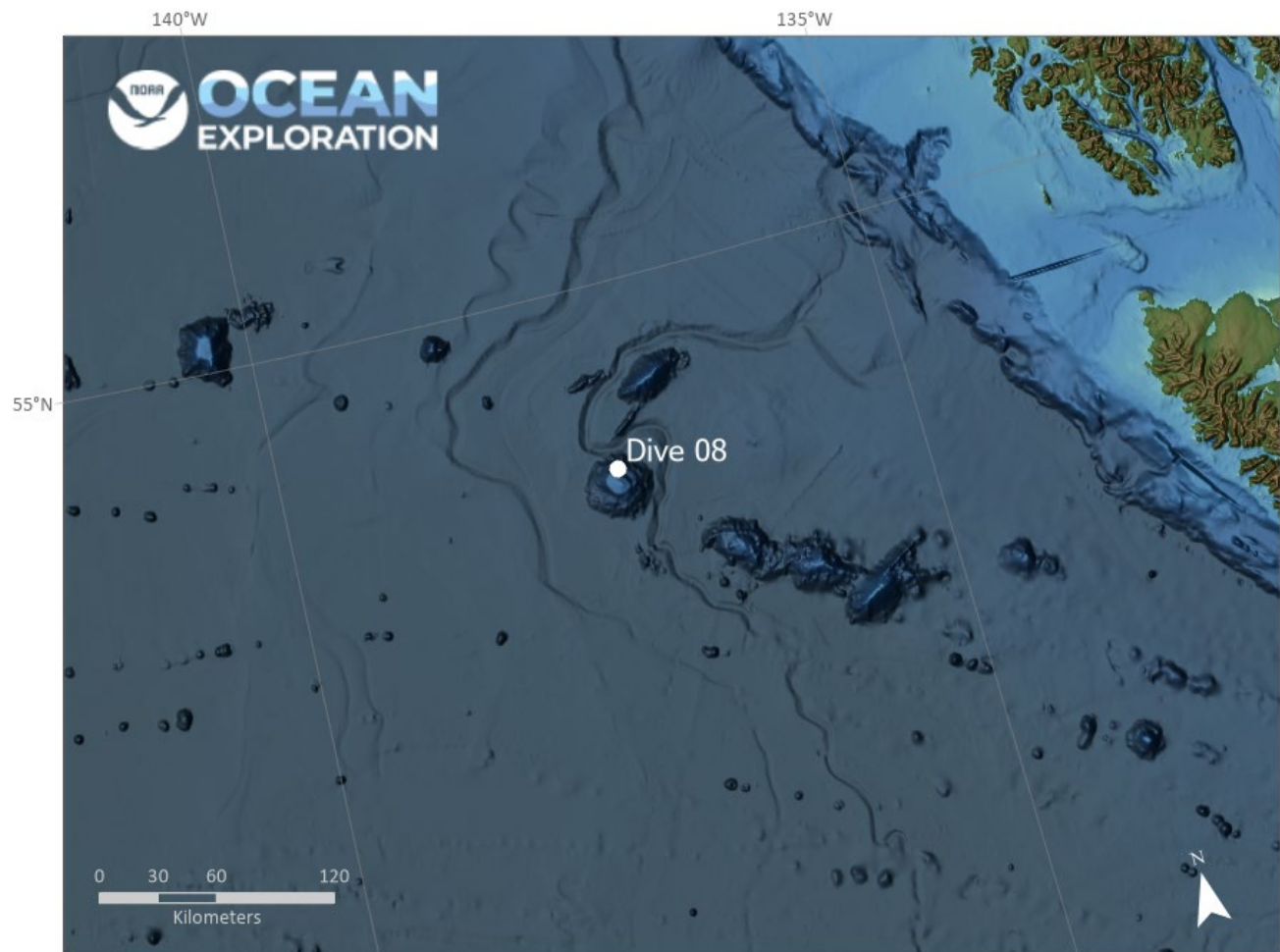


ROV Dive Summary

EX2306, Dive 08, August 31, 2023

General Location Map



Dive Information

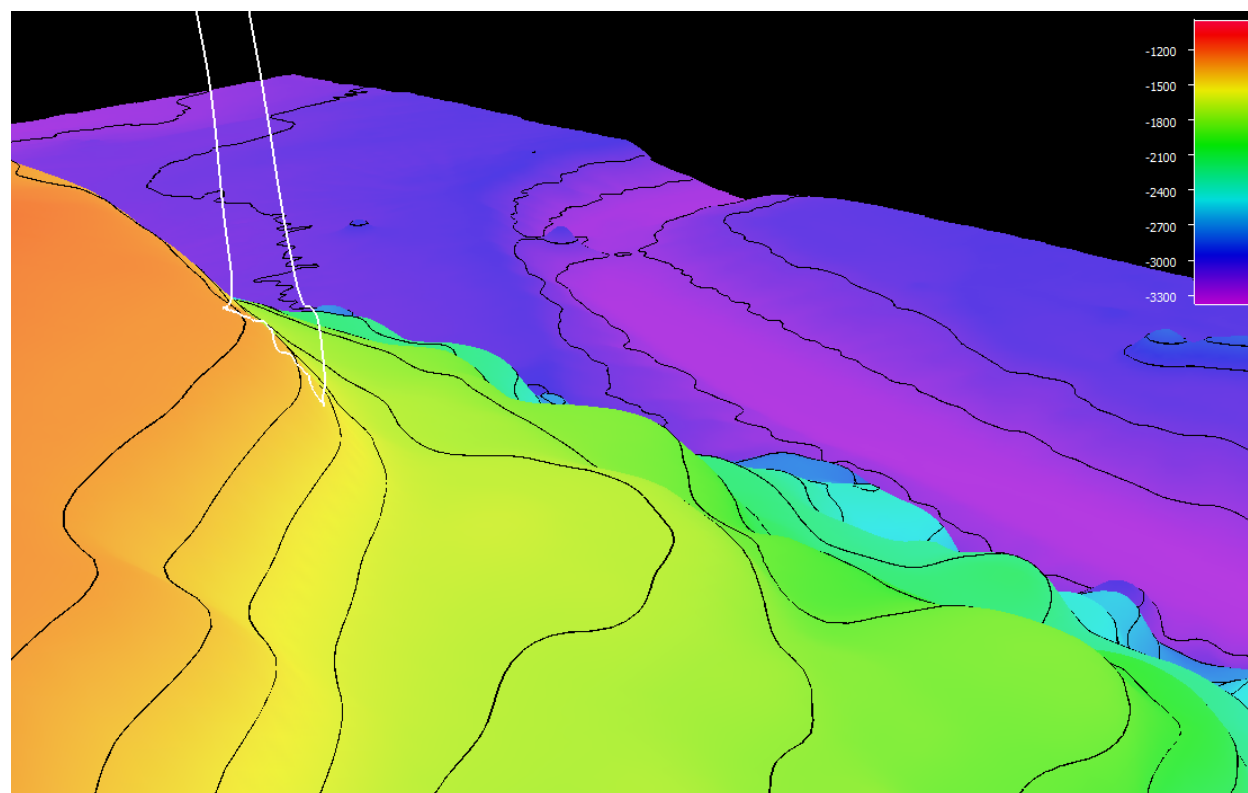
Site Name	Denson Seamount
General Area Descriptor	Gulf of Alaska
Science Team Leads	Merlin Best (Bio); Jamie Conrad (Geo)
Expedition Coordinator	Sam Candio
ROV Dive Supervisor	Lars Murphy
Dive Purpose	To dive on the northern side of Denson seamount, starting at a depth of about 1300 meters and working up to the summit plateau.
Maritime Heritage Restrictions	No
ROV Dive Summary Data	<p>Dive Type: Normal</p> <p>In Water: 2023-08-31T16:22:42.612741 54.13716246726281 ; -137.38142566603915</p> <p>On Bottom: 2023-08-31T17:25:56.128356 54.13828656919763 ; -137.37943685773632</p> <p>Off Bottom: 2023-08-31T23:48:08.836989 54.13563269979146 ; -137.38496512656752</p> <p>Out Water: 2023-09-01T00:36:58.695178 54.13606106472619 ; -137.38543837008882</p> <p>Dive Duration: 8:14:16</p> <p>Bottom Time: 6:22:12</p> <p>Max Vehicle Depth: 1458.1 m</p> <p>Min Seafloor Depth: 1272.0 m</p> <p>Distance Traveled: 467.2 m</p>

Dive Description	<p>Geology</p> <p>This dive was on the upper flank and edge of the summit plateau of Denson Seamount, another of the seamounts in the Kodak-Bowie chain. The flanks of the seamount were composed of basalt flows that cascaded down the sides of the edifice, showing well-exposed examples of flow lobes, lava tubes, and pillow structures. In places these flows were weathered into cobble- and boulder-sized blocks. On the edge of the summit plateau the flows were interspersed with sandy, pebbly, and cobbly unconsolidated sediment. Two samples of the basalt and two samples of pebbly sandy sediment were collected. In addition, a rock recovered as an associate of a biology sample turned out to be a light green metavolcanic or metasedimentary rock with an Fe-Mn crust, likely an ice-rafted dropstone.</p> <p>Biology</p> <p>The dive showcased a wide variety of Hexactinellida, as well as the first really abundant large demosponge (<i>Poecillastra</i> sp.). There was a high abundance of <i>Liponema</i> sp. in the deeper half of the dive. A wide variety of samples were collected for further study.</p>
Notable Observations	Lithodidae and Pleurobranchia both seen in possible mating pairs; Hertwigia sp. sampled for microbial study
Community and Habitat Observations	<p>Corals and Sponges — Present</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)	<p>Boulder Field</p> <p>Flat</p> <p>Ledge</p> <p>Outcrop/Rock Outcrop</p> <p>Seamount</p> <p>Slope</p>
SeaTube Link (science annotations)	https://data.oceannetworks.ca/SeaTubeV3?resourceTypeld=600&resourceId=6720

Equipment Deployed

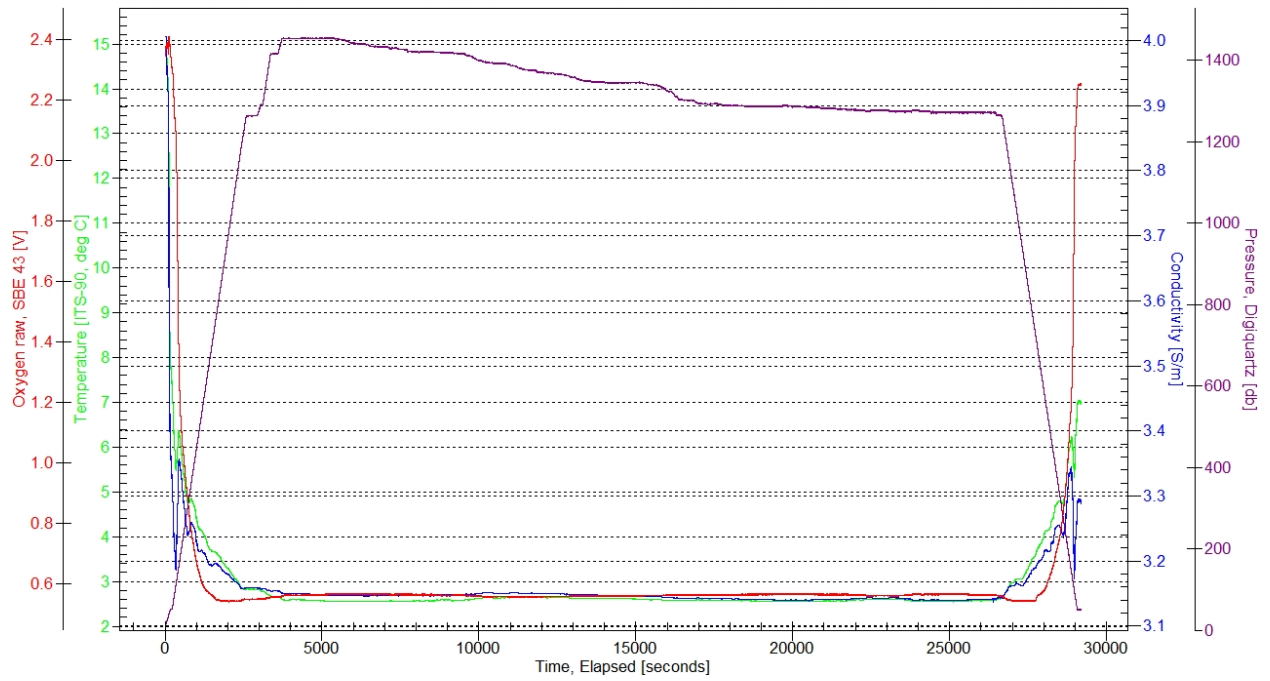
ROV	<i>Deep Discoverer</i>
Camera Platform	<i>Seirios</i>
ROV Measurements	The following ROV measurements, data streams and equipment are used on each ROV deployment: CTD, depth, scanning sonar, USBL position, altitude, heading, attitude, high-resolution cameras, low resolution cameras, manipulator arms,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

Close-Up Map of Main Dive Site



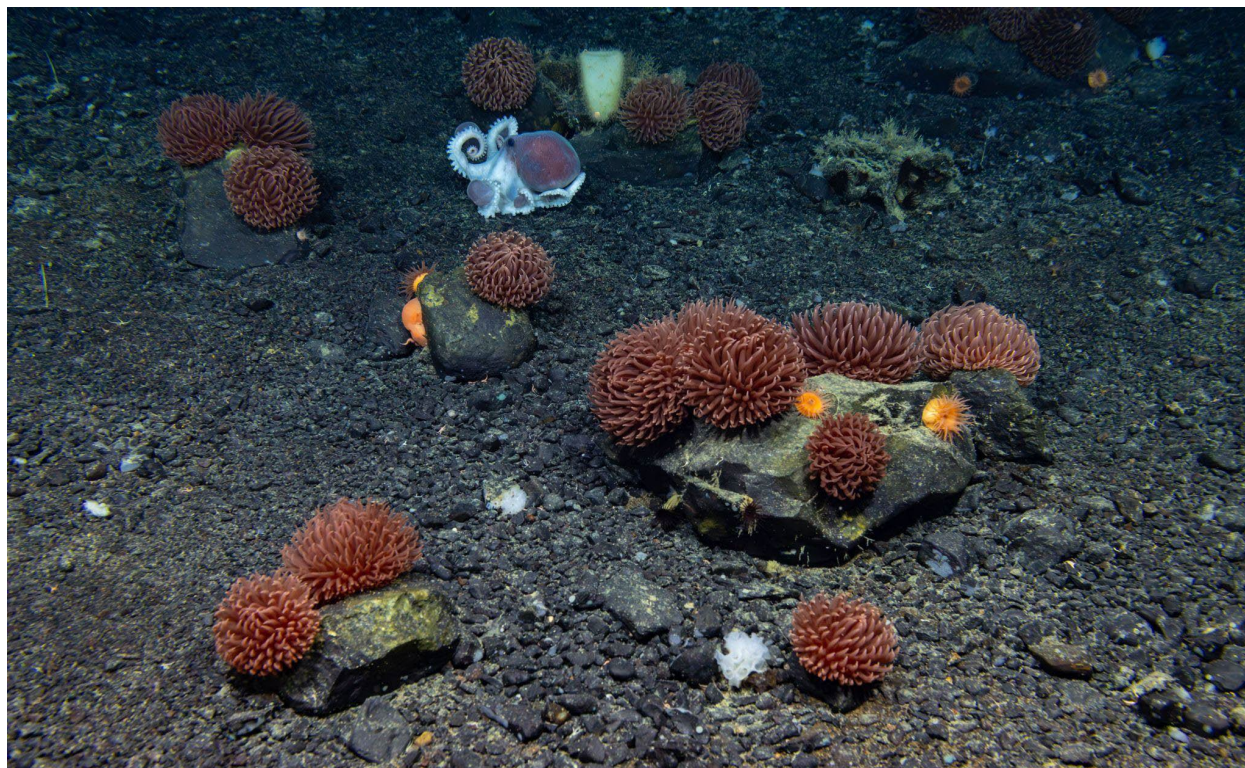
Smoothed ROV dive track in white on 30x30 m cell size bathymetry, 3x vertical exaggeration, depth in meters, 100 meter contours.

Sound Speed Manager Image of ROV CTD Profile



Plot of ROV CTD profile, showing temperature, conductivity, pressure, and dissolved oxygen over time.

Representative Photos of the Dive



Liponema sp., Farrea sp. and unknown anemones encrusting on a cobble, with *Graneledone boreopacifica* in the background.

Samples Collected

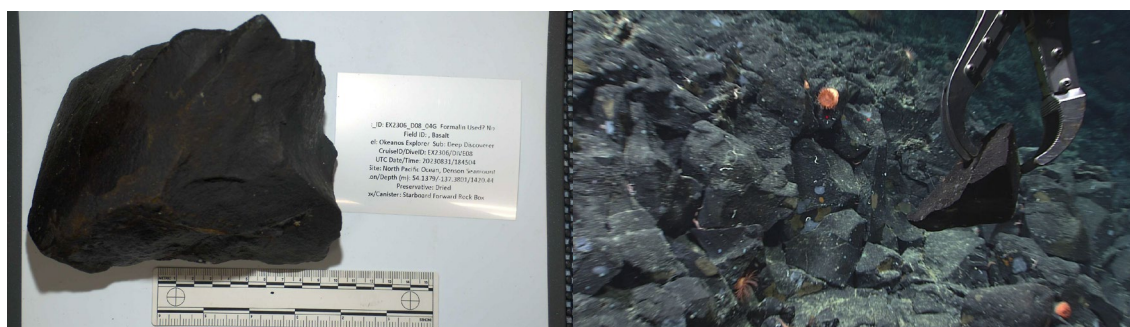


Sample ID	EX2306_D08_02B
Date (UTC)	20230831
Time (UTC)	174345
Depth (m)	1456.2900390625
Latitude (decimal degrees)	54.1383171081543
Longitude (decimal degrees)	-137.379516601563
Temp. (°C)	2.56399989128113
Field ID(s)	Poecillastra



Sample ID	EX2306_D08_03B
Date (UTC)	20230831
Time (UTC)	180930

Depth (m)	1442.5400390625
Latitude (decimal degrees)	54.1380805969238
Longitude (decimal degrees)	-137.379745483398
Temp. (°C)	2.55299997329712
Field ID(s)	Hexactinellida



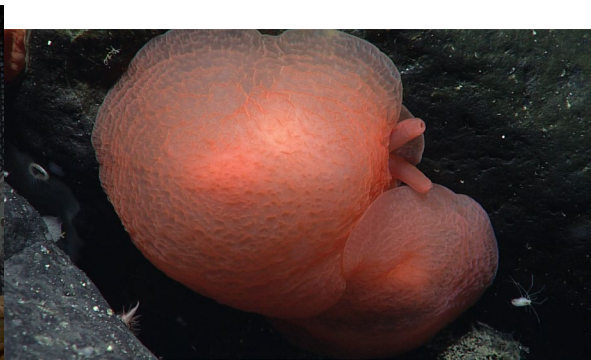
Sample ID	EX2306_D08_04G
Date (UTC)	20230831
Time (UTC)	184504
Depth (m)	1420.43505859375
Latitude (decimal degrees)	54.1379241943359
Longitude (decimal degrees)	-137.380111694336
Temp. (°C)	2.56200003623962
Field ID(s)	Basalt
Comments	aphanitic basalt w/ thin Fe-Mn crust

Associates Sample ID:	EX2306_D08_04G_A01B
Field Identification:	Other

Count:	1
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Sample ID	EX2306_D08_05B
Date (UTC)	20230831
Time (UTC)	185734
Depth (m)	1417.48400878906
Latitude (decimal degrees)	54.1378898620605
Longitude (decimal degrees)	-137.380081176758
Temp. (°C)	2.54399991035461
Field ID(s)	Pedicellasteridae



Sample ID	EX2306_D08_06B
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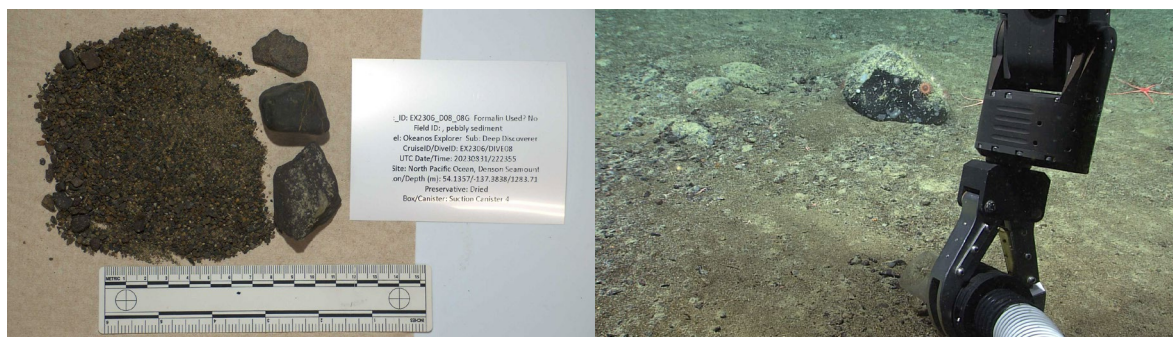
Date (UTC)	20230831
Time (UTC)	203409
Depth (m)	1344.79699707031
Latitude (decimal degrees)	54.1367454528809
Longitude (decimal degrees)	-137.381454467773
Temp. (°C)	2.6159999370575
Field ID(s)	Berthella



Sample ID	EX2306_D08_07B
Date (UTC)	20230831
Time (UTC)	214213
Depth (m)	1290.91394042969
Latitude (decimal degrees)	54.1361503601074
Longitude (decimal degrees)	-137.3828125
Temp. (°C)	2.56500005722046
Field ID(s)	Ophiuroidea

Associates Sample ID:	EX2306_D08_07B_A01G
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Field Identification:	basalt cobbles
Count:	1



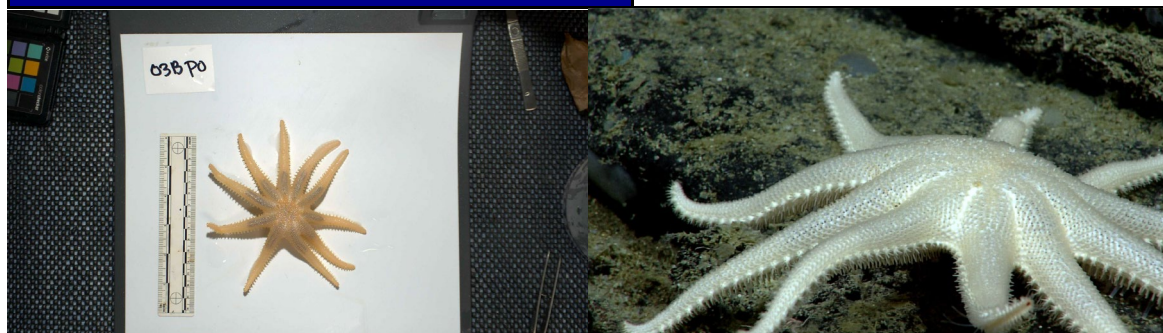
Sample ID	EX2306_D08_08G
Date (UTC)	20230831
Time (UTC)	222355
Depth (m)	1283.7060546875
Latitude (decimal degrees)	54.1357040405273
Longitude (decimal degrees)	-137.383819580078
Temp. (°C)	2.53699994087219
Field ID(s)	pebbly sediment
Comments	subrounded to subangular basaltic cobbles and pebbles with sand

Associates Sample ID:	EX2306_D08_08G_A01B
Field Identification:	Mysidacea
Count:	1

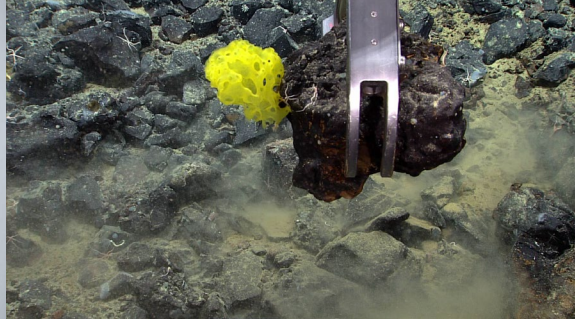
Associates Sample ID:	EX2306_D08_08G_A02B
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Field Identification:	Ophiuroidea
Count:	1

Associates Sample ID:	EX2306_D08_08G_A03B
Field Identification:	Polychaeta
Count:	1



Sample ID	EX2306_D08_09B
Date (UTC)	20230831
Time (UTC)	225615
Depth (m)	1276.29797363281
Latitude (decimal degrees)	54.1354675292969
Longitude (decimal degrees)	-137.384643554688
Temp. (°C)	2.54500007629395
Field ID(s)	solaster



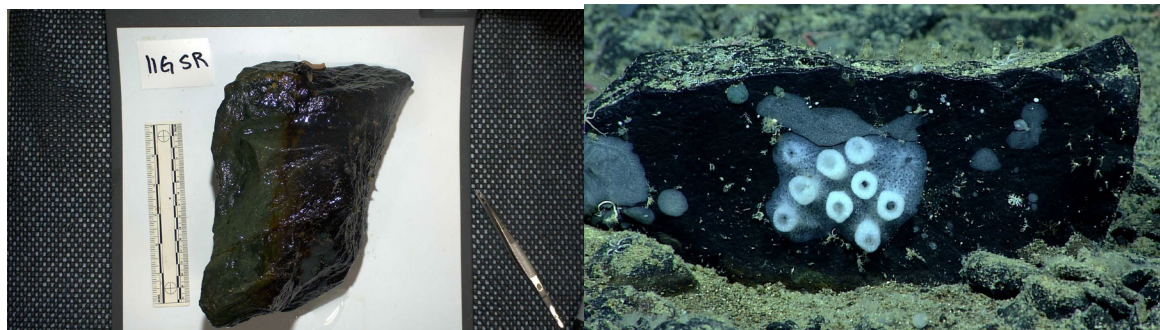
Sample ID	EX2306_D08_10B
Date (UTC)	20230831
Time (UTC)	232500
Depth (m)	1274.25305175781
Latitude (decimal degrees)	54.1352424621582
Longitude (decimal degrees)	-137.385314941406
Temp. (°C)	2.53399991989136
Field ID(s)	Hertwigia
Comments	Collected for taxonomy with a subsample for microbial/chemical research (Scripps)

Associates Sample ID:	EX2306_D08_10B_A01B
Field Identification:	Ophiuroidea
Count:	2

Associates Sample ID:	EX2306_D08_10B_A02B
Field Identification:	Hexactinellida
Count:	1

Associates Sample ID:	EX2306_D08_10B_A03G
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Field Identification:	basalt
Count:	N/A



Sample ID	EX2306_D08_11G
Date (UTC)	20230831
Time (UTC)	233336
Depth (m)	1273.54602050781
Latitude (decimal degrees)	54.1352996826172
Longitude (decimal degrees)	-137.385177612305
Temp. (°C)	2.56299996376038
Field ID(s)	Mn crust on basalt with sponge +
Comments	light green sheared metavolcanic rock with Fe-Mn veneer on half

Associates Sample ID:	EX2306_D08_11G_A01B
Field Identification:	Onuphidae
Count:	1

Associates Sample ID:	EX2306_D08_11G_A02B
Field Identification:	Porifera

Count:	1
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Associates Sample ID:	EX2306_D08_11G_A03B
Field Identification:	Porifera
Count:	1

Niskin Sampling Summary

Sample ID	EX2306_D08_01W
Date (UTC)	20230831
Time (UTC)	172845
Depth (m)	1456.40002441406
Latitude (decimal degrees)	54.138298034668
Longitude (decimal degrees)	-137.379608154297
Bottle Number	Niskin Bottle 1
Temperature	2.51999998092651
Dissolved Oxygen (mg/L)	0.689999997615814
Treatment	DNA/RNA Shield

Sample ID	EX2306_D08_12W
Date (UTC)	20230831
Time (UTC)	234041
Depth (m)	1272.42004394531
Latitude (decimal degrees)	54.1350517272949
Longitude (decimal degrees)	-137.385482788086

Bottle Number	Niskin Bottle 2
Temperature	2.54299998283386
Dissolved Oxygen (mg/L)	0.657999992370605
Treatment	DNA/RNA Shield

Sample ID	EX2306_D08_13W
Date (UTC)	20230901
Time (UTC)	001516
Depth (m)	452.046997070313
Latitude (decimal degrees)	54.1352043151855
Longitude (decimal degrees)	-137.38459777832
Bottle Number	Niskin Bottle 3
Temperature	4.38800001144409
Dissolved Oxygen (mg/L)	1.05200004577637
Treatment	DNA/RNA Shield

Scientists Involved

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Amanda Maxon	NOAA
Arvind Shantharam	NCEI
Asako Matsumoto	Chiba Institute of Technology
Ashley Marranzino	NOAA
Caitlin Zant	NOAA
Carolyn Ruppel	USGS
Cherisse Dupreez	Fisheries and Oceans Canada
Christa Rabenold	NOAA
Christina Conrath	NOAA
Christopher Kelley	University of Hawaii
Christopher Mah	National Museum of Natural History, Smithsonian Institution
Cindy Van Dover	Duke University
Dhugal Lindsay	JAMSTEC
Elaina Jorgensen	NOAA
Emily Ashe	NOAA
Emily Crum	NOAA
Erica Burton	NOAA
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Kelly Markello	California Academy of Sciences
Kenneth Sulak	USGS
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