



Okeanos Explorer ROV Dive Summary

Dive Information

<p>General Location Map</p>	
<p>General Area Descriptor</p>	<p>U.S. Southeast, Blake Plateau</p>
<p>Site Name</p>	<p>Canaveral Deep</p>
<p>Science Team Leads</p>	<p>Amy Wagner (CSUS) and Alexis Weinnig (Temple)</p>
<p>Expedition Coordinator</p>	<p>Kasey Cantwell (NOAA-OER)</p>
<p>ROV Dive Supervisor</p>	<p>Chris Ritter (GFOE)</p>
<p>Mapping Lead</p>	<p>Shannon Hoy (NOAA-OER)</p>

ROV Dive Name

<p>Cruise</p>	<p>EX1903L2</p>
<p>Dive Number</p>	<p>DIVE01</p>

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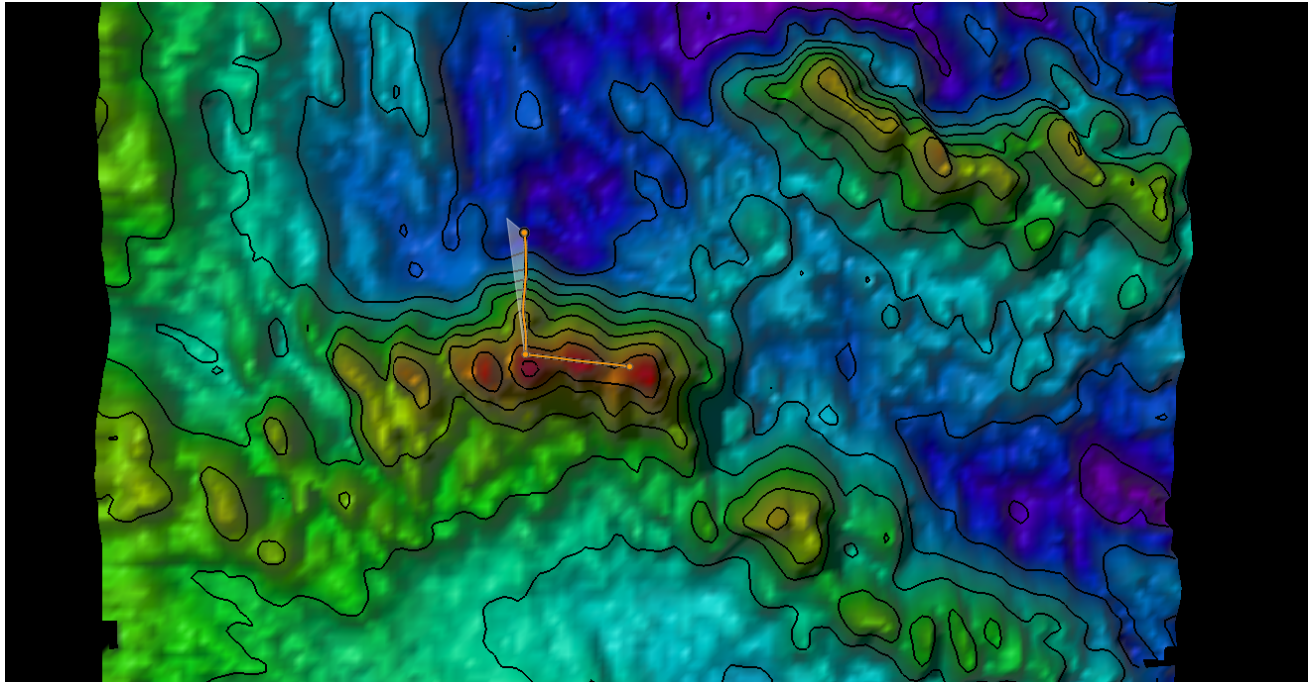
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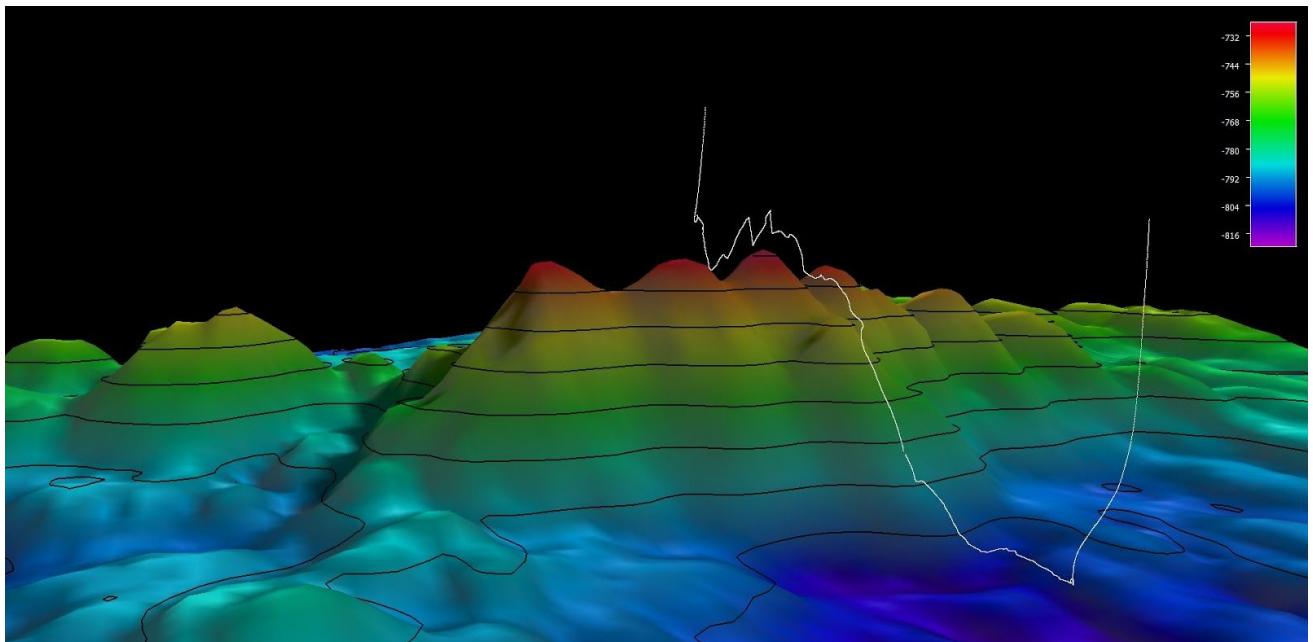
Dive Purpose	A primary purpose of this dive is to explore the southern extent of the “Million Mounds” region of the Stetson Miami Terrace Deepwater Coral HAPC and investigate the possible influence of the Gulf Stream on deepwater habitats. The dive will target one of the east-west lateral trending mounds that are common throughout the area and could potentially be biogenic habitat for corals and associated fauna.
Dive Description	Due to increased current and winds, the ROV was north of the dive site target after launch and we proceeded to descend at a slow pace that was optimal for towing the ROV to the planned dive target. Once on the bottom at the Canaveral Deep dive target, which was around 805 meters, we first observed soft sediment that quickly transitioned into coral rubble as we approached the base of the first mound. Around the base of the mound there was more scleractinian coral rubble than live coral coverage. The live scleractinian corals around the depths of 805 - 750 meters appeared to be mostly <i>Enallopsammia rostrata</i> . The dead coral rubble also fostered a high diversity of associated species including sponges (Hexactinellids, Demospongidea), fishes (Synphobranchid eels, <i>Nezumia macrourid</i> , and <i>Merluccius hake</i> , Congridae eel, cusk eels, Lophiodies anglerfish), octocorals (<i>Pseudoanthomastus/Anthomastus</i> , Primnoids (possibly <i>Plumarella</i>), Plexauridae, Isididae, Stoloniferous octocorals, Nephtheidae), small Stylastrids, brittle stars, crinoids, and urchins. As we traversed up the mound we observed a shift in the dominant scleractinian coral type from <i>Enallopsammia rostrata</i> to <i>Lophelia pertusa</i> . Live <i>Lophelia</i> coverage increased as we continued up the mound and there was the most live coral coverage at the top of the mound at a depth of around 725 meters. The diversity of associated organisms persisted throughout the dive and a few other scleractinians (<i>Enallopsammia rostrata</i> , <i>Madrepora oculata</i>) were observed in small patches. Between the mounds there was very current swept sediment, indicative of the strong currents that might be in reaching these depths from surface driven currents such as the Gulf Stream. As we started up the second mound of the dive we saw a similar, characteristic transition from mostly coral rubble at the base of the mound into more live coral coverage as we approached the top of the mound. We ended the dive at a local high at the top of the second coral mound, in between WPT1 and WPT2. Throughout the dive we had relatively consistent temperature (~7 C), oxygen (~4 mg/l), and salinity (~35 PSU) measurements. We completed four biological samples including live <i>Lophelia pertusa</i> , a soft coral (<i>Nephtheidae</i>), a bamboo coral (<i>Isididae</i>), and a <i>Gastroptychus</i> squat lobster.
Notable Observations	Three chimaeras - most of the dive consisted of either dead or live scleractinian cold-water coral coverage - many anthomastus octocorals amongst dead coral framework
Community Presence/Absence (community is defined as more than two species)	<ul style="list-style-type: none"> ✓ Corals and Sponges ✓ Chemosynthetic Community ✓ High biodiversity Community ✓ Active Seep or Vent ✓ Extinct Seep or Vent ✓ Hydrates
Feature Type	Deep-water/Cold-water stony coral reef (cold-water coral mound)
SeaTube Link (Annotation Program)	https://data.oceannetworks.ca/SeaTubeV2?resourceTypeId=1000&resourceId=23621&divId=2400



Overall Map of the ROV Dive Area



Close-up Map of Main Dive Site and Track

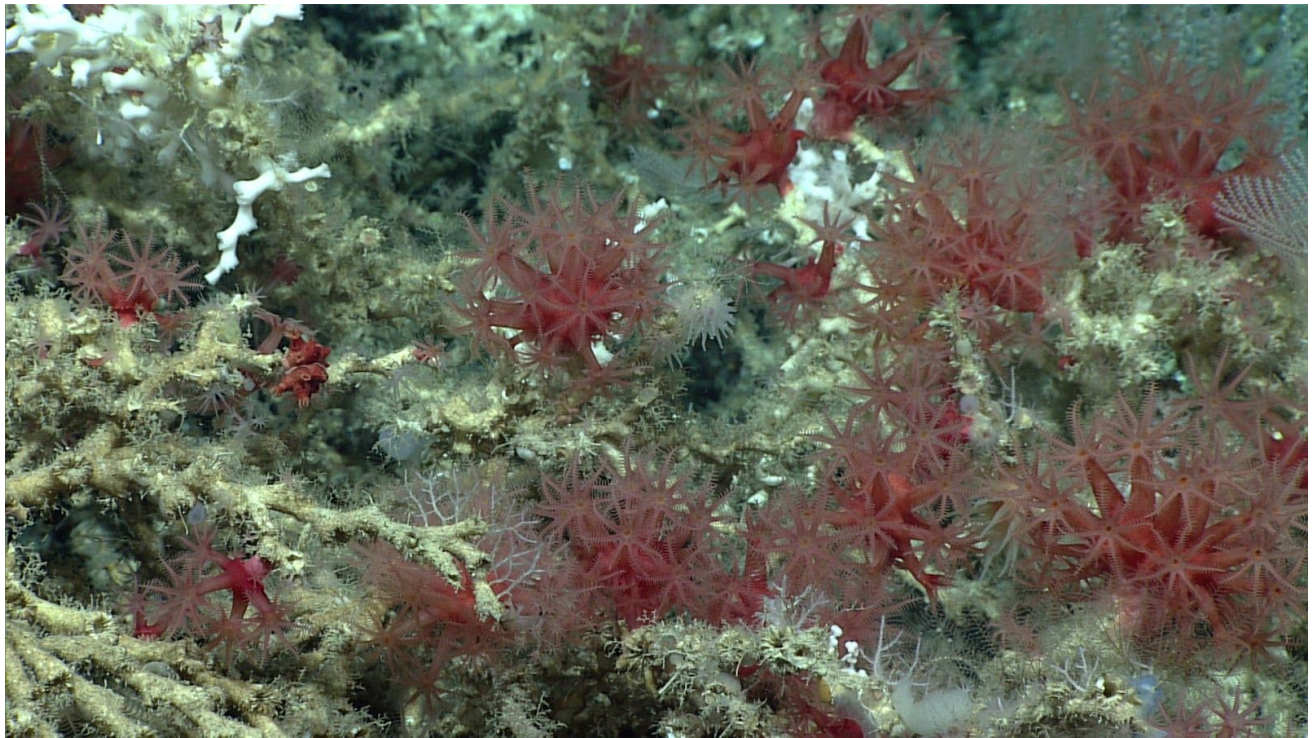


Representative Photos of the Dive



Dense live *Lophelia pertusa* thickets with associated fauna.

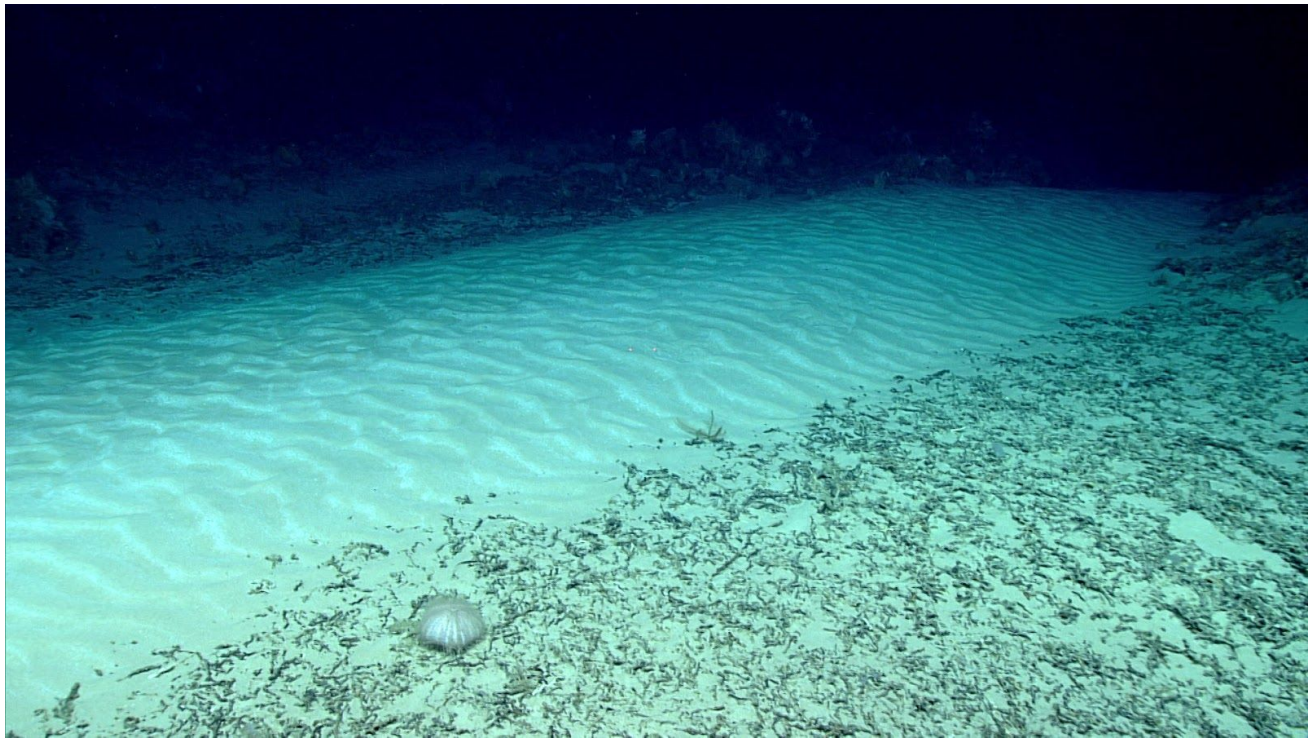




Aggregation of pink *Anthomastus* sp. soft corals growing on dead *Lophelia pertusa* framework.

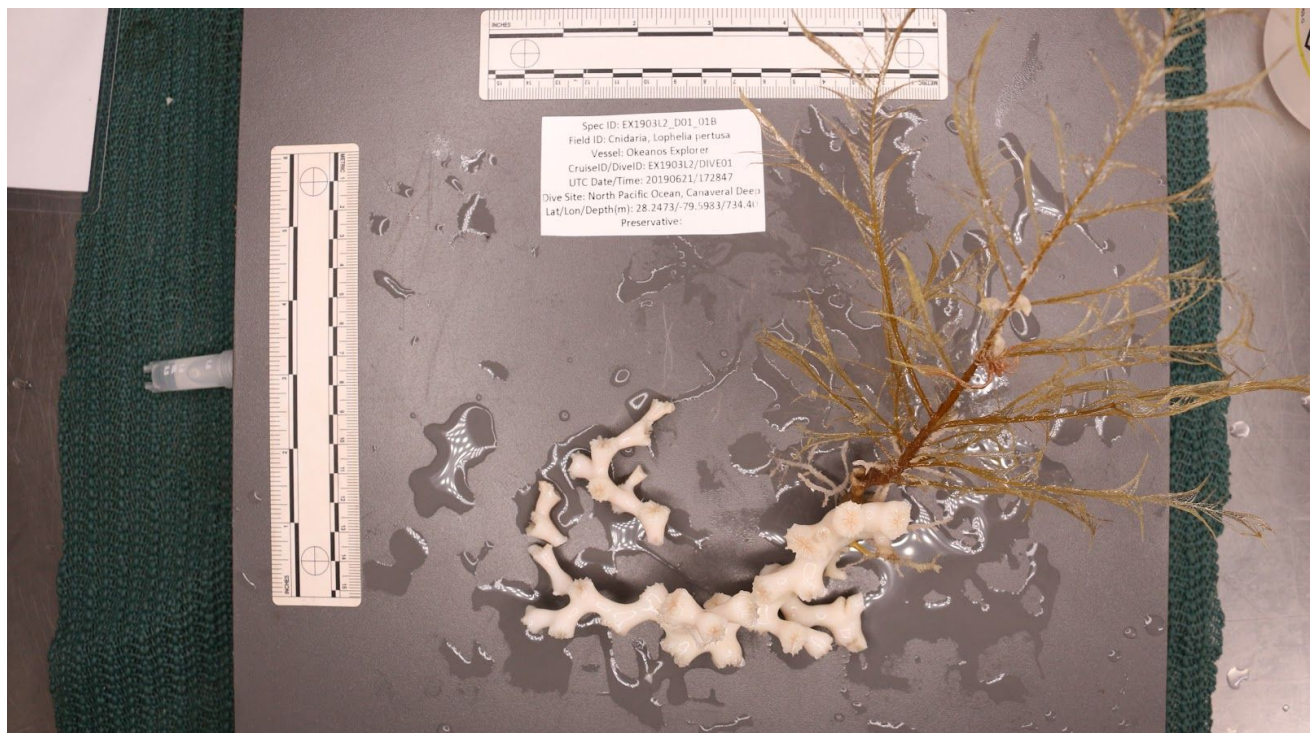


Angler fish (*Sladenia*) perched on coral rubble



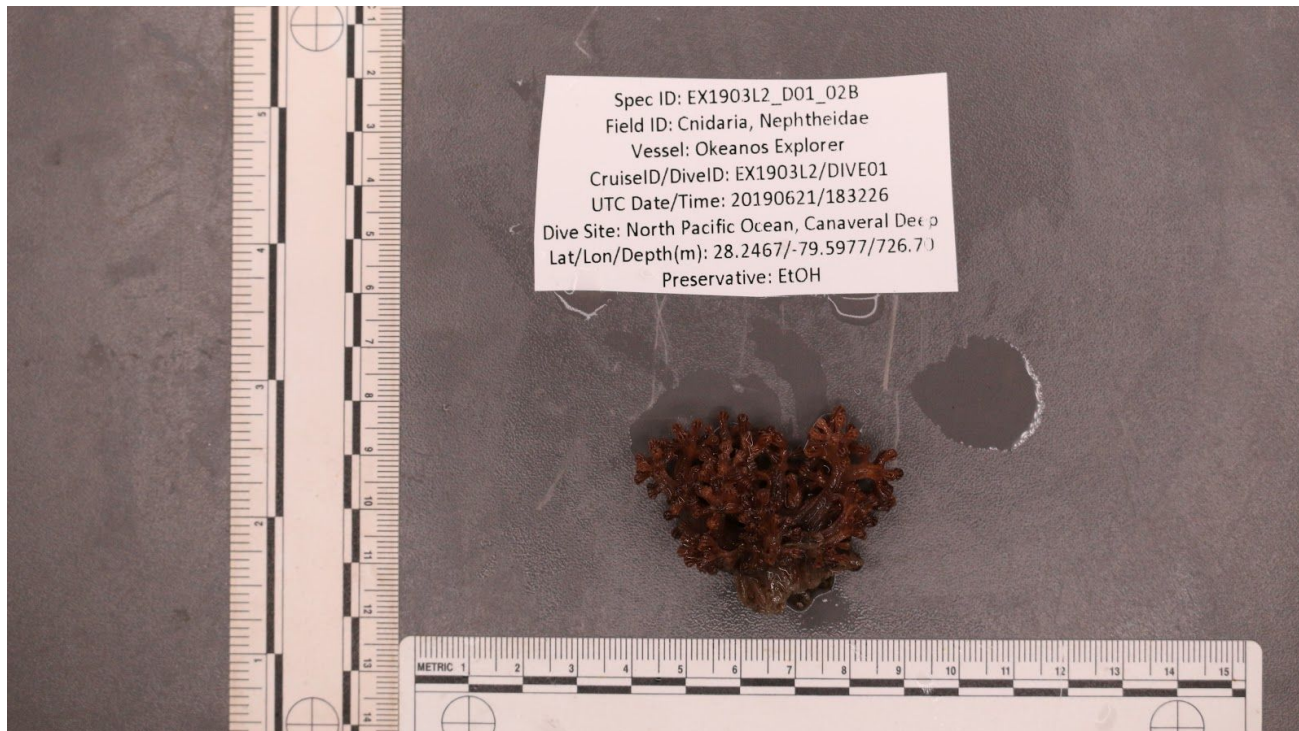
Sand ripples in the soft sediment surrounded by coral rubble in between two cold-water coral mounds

Samples Collected

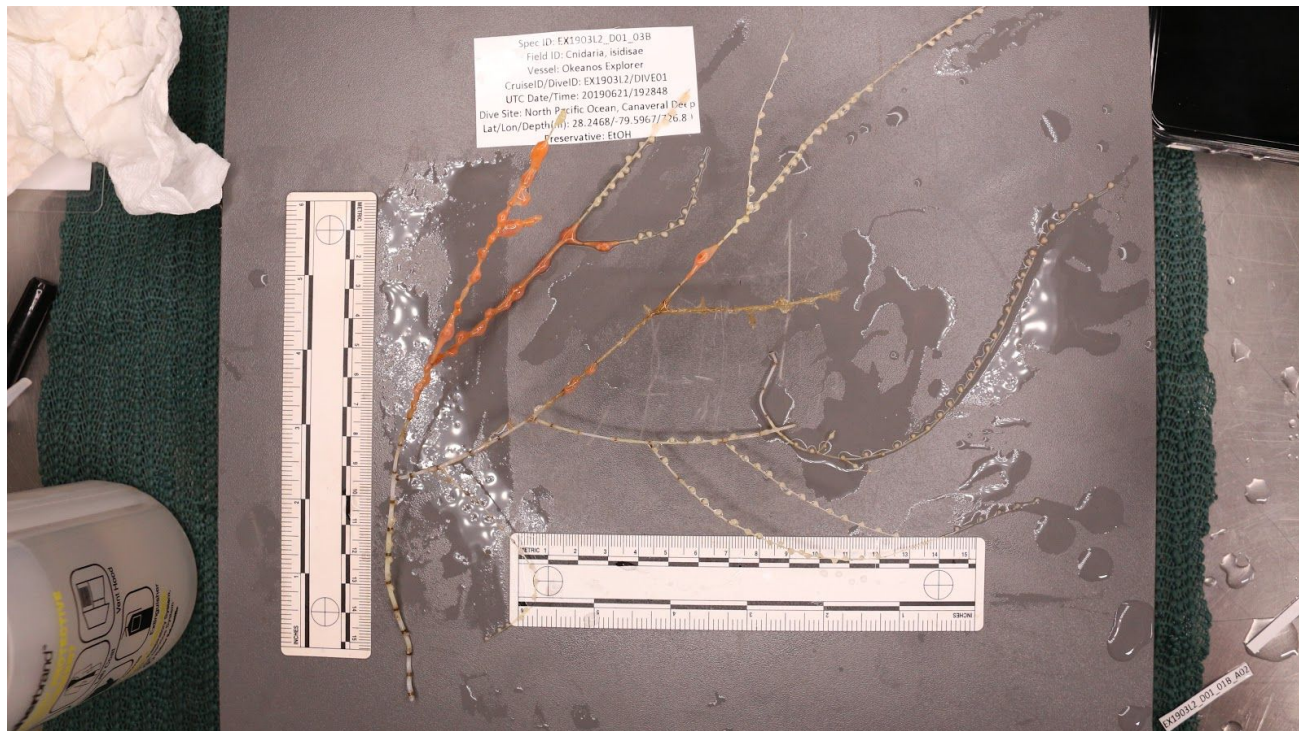


Sample ID	EX1903L2_D01_01B	
Date (UTC)	20190621	
Time (UTC)	172847	
Depth (m)	734.4	
Temp. (°C)	7.108	
Field ID(s)	<i>Lophelia pertusa</i>	
Associates	Associates Sample ID	Field Identification
	EX1903L2_D01_01B_A01	Porifera
	EX1903L2_D01_01B_A02	Hydrozoa
	EX1903L2_D01_01B_A03	Crinoidea
	EX1903L2_D01_01B_A04	Ophiuroidea
	EX1903L2_D01_01B_A05	Polychaeta
	EX1903L2_D01_01B_A06	Cirripedia (Barnacles)
	EX1903L2_D01_01B_A07	Anemone
	EX1903L2_D01_01B_A08	Primnoidae
	EX1903L2_D01_01B_A09	Nephtheidae
	EX1903L2_D01_01B_A10	Porifera
	EX1903L2_D01_01B_A11	Anthomastus ps.
	EX1903L2_D01_01B_A12	<i>Clavularia grandiflora</i>
	Comments	Labels stored with samples are correct. Labels in pics for Dive 1 erroneously state Pacific Ocean

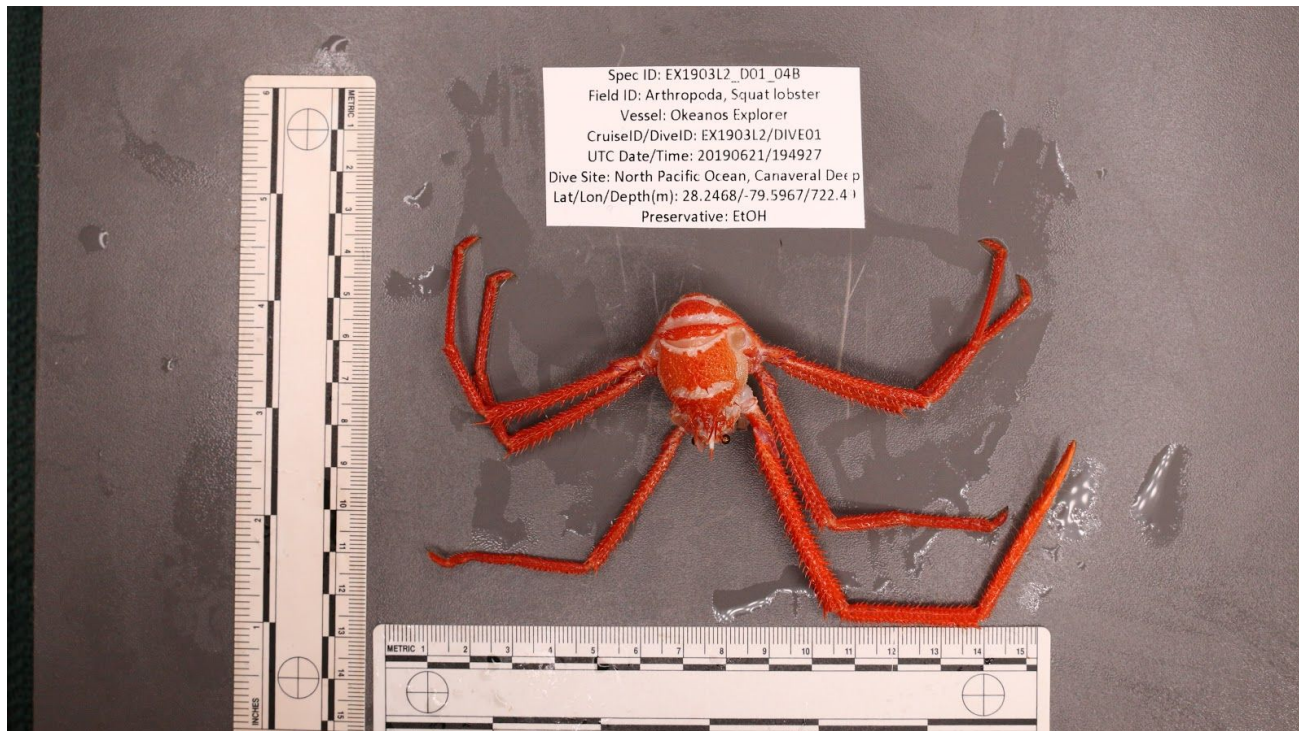




Sample ID	EX1903L2_D01_02B	
Date (UTC)	20190621	
Time (UTC)	183226	
Depth (m)	726.7	
Temp. (°C)	7.119	
Field ID(s)	Nephtheidae	
Associates	Associates Sample ID	Field Identification
	EX1903L2_D01_02B_A01	Hexactinellida
	EX1903L2_D01_02B_A02	Amphipoda
	EX1903L2_D01_02B_A03	<i>Lophelia pertusa</i> skeleton
	EX1903L2_D01_02B_A04	Hydroidolina
	EX1903L2_D01_02B_A05	Actiniaria
	EX1903L2_D01_02B_A06	Porifera (blue encrusting sponge)
Comments	Labels stored with samples are correct. Labels in pics for Dive 1 erroneously state Pacific Ocean	



Sample ID	EX1903L2_D01_03B	
Date (UTC)	20190621	
Time (UTC)	192848	
Depth (m)	726.9	
Temp. (°C)	7.131	
Field ID(s)	Isididae	
Associates	Associates Sample ID	Field Identification
	EX1903L2_D01_03B_A01	Actiniaria
	EX1903L2_D01_03B_A02	Hydroidolina
Comments	Labels stored with samples are correct. Labels in pics for Dive 1 erroneously state Pacific Ocean	



Sample ID	EX1903L2_D01_04B							
Date (UTC)	20190621							
Time (UTC)	194927							
Depth (m)	722.5							
Temp. (°C)	7.139							
Field ID(s)	Chirostyloidea							
Associates	<table border="1"> <thead> <tr> <th>Associates Sample ID</th> <th>Field Identification</th> </tr> </thead> <tbody> <tr> <td>EX1903L2_D01_04B_A01</td> <td>Isididae</td> </tr> <tr> <td> </td> <td> </td> </tr> </tbody> </table>		Associates Sample ID	Field Identification	EX1903L2_D01_04B_A01	Isididae		
	Associates Sample ID	Field Identification						
	EX1903L2_D01_04B_A01	Isididae						
Comments	Labels stored with samples are correct. Labels in pics for Dive 1 erroneously state Pacific Ocean							

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