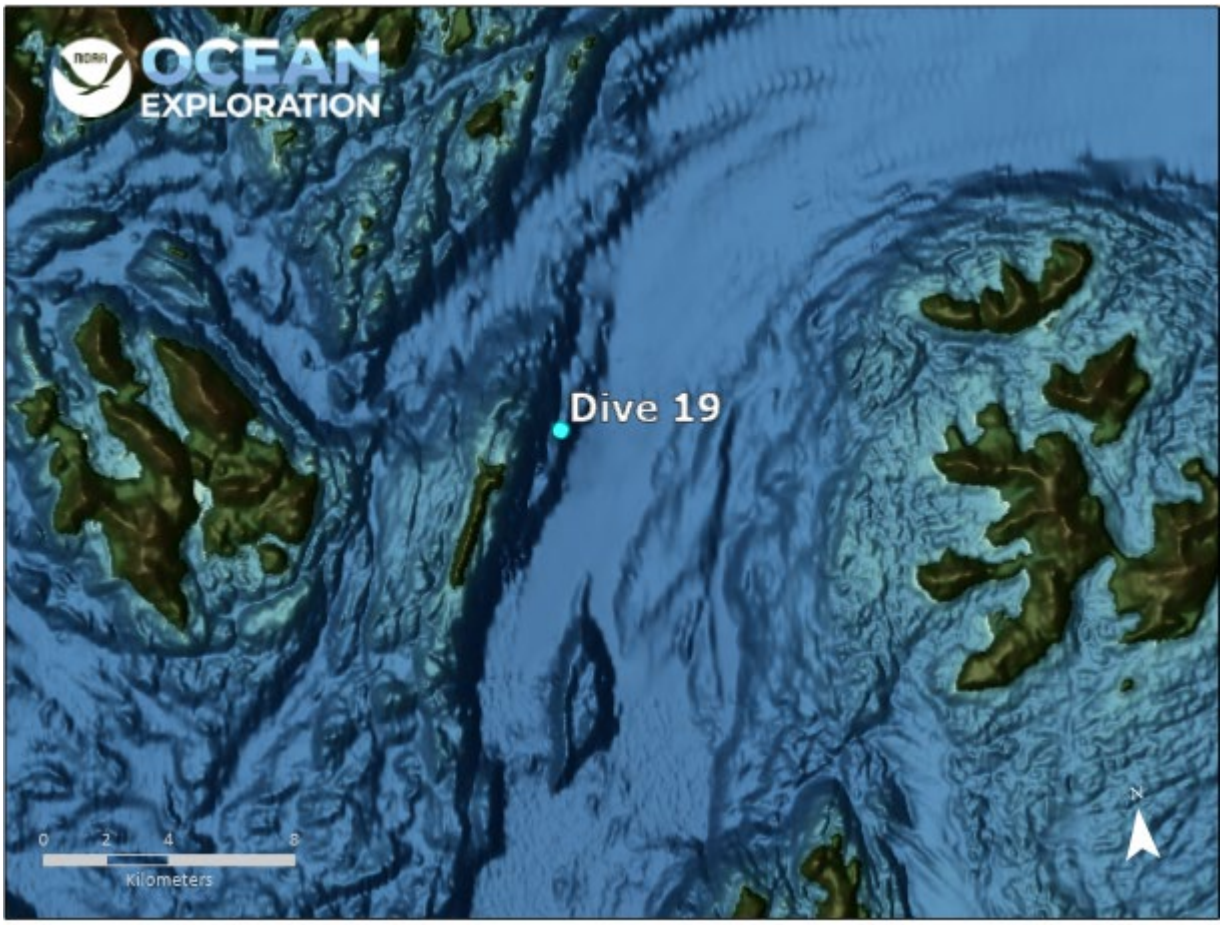
ROV Dive Summary
EX2306, Dive 19, September 13, 2023

General Location Map



Dive Information

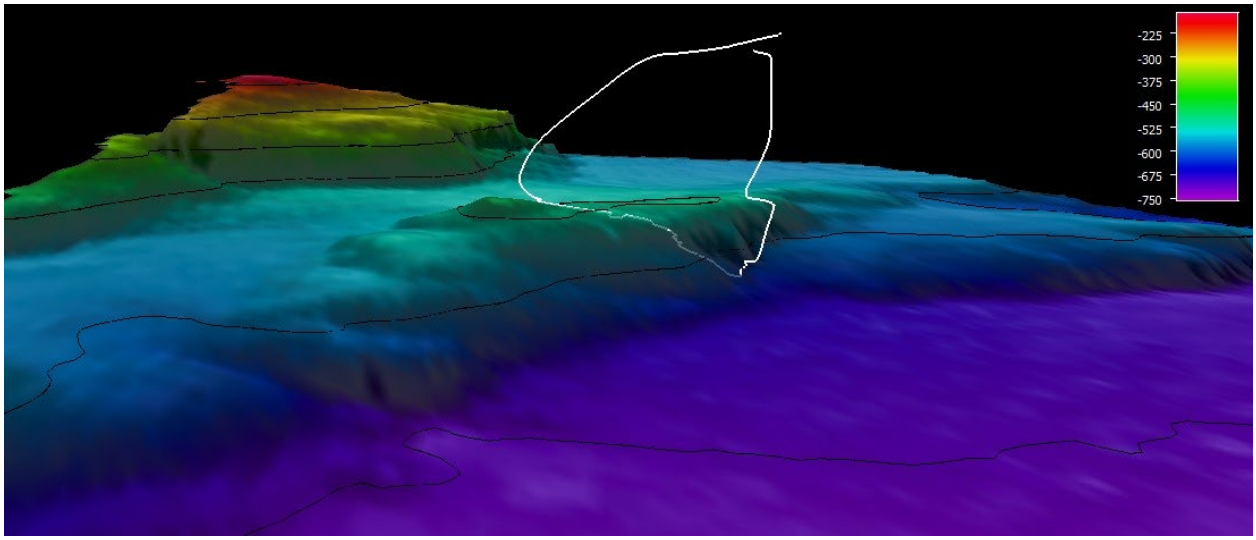
Site Name	Lone Island
General Area Descriptor	Prince William Sound
Science Team Leads	Merlin Best (Bio); Jamie Conrad (Geo)
Expedition Coordinator	Sam Candio
ROV Dive Supervisor	Lars Murphy
Dive Purpose	To explore rocky exposures in Prince William Sound at depths of 250-650 m east of Lone Island in Knight Island Passage. Bedrock exposures are expected to be Eocene and Paleocene volcanic rocks of the Orca Group. There is very little data on the benthic fauna found deeper than 100 m in this area, so we will aim to fill in this data gap with observations and collections.
Maritime Heritage Restrictions	No
ROV Dive Summary Data	Dive Type: Normal In Water: 2023-09-13T18:14:25.442585 60.703191769583135 ; -147.69829007306274 On Bottom: 2023-09-13T19:18:47.207302 60.70202270676181 ; -147.6983935112697 Off Bottom: 2023-09-14T00:06:47.966673 60.70250630401783 ; -147.703452 Out Water: 2023-09-14T00:34:09.105241 60.70354442208925 ; -147.69807717993572 Dive Duration: 6:19:43 Bottom Time: 4:48:00 Max Vehicle Depth: 645.5 m Min Seafloor Depth: 476.7 m Distance Traveled: 324.1 m

Dive Description	***Geology*** This dive was on rocky substrate in Prince William Sound about 2-3 km northeast of Lone Island at depths of about 475-650 m. Lone Island is underlain by volcanic rocks of the Eocene to Paleocene Orca Group and the dive area was likely the same unit. Rock exposures were mostly covered by biota and a relatively thick accumulation of fine sediment, but their appearance was consistent with medium- to thick-bedded basalt flows, possibly with some intervals of interbedded sedimentary rocks. Two rock samples were collected, both were fine-grained aphanitic basalt, one with black patches of iron sulfide coating. ***Biology*** The soft sediment provided habitat for multiple different fish species like northern smooth tongue, halibut, poacher, arrowtooth flounder, sculpins, and rockfish. The rocky features were generally completely covered with zoanthid anemones, with a variety of sea slugs and nudibranchs, as well as abundant cup corals (Caryoplyllia sp.) and sponges.
Notable Observations	Potential oil residue on rock sample
Community and Habitat Observations	Corals and Sponges — Present Chemosynthetic Community — Absent High biodiversity Community — Present Active Seep or Vent — Absent Extinct Seep or Vent — Absent Hydrates — Absent
CMECS Feature Type(s)	Ledge Outcrop/Rock Outcrop Shelf Valley Slope Submarine Canyon
SeaTube Link (science annotations)	https://data.oceannetworks.ca/SeaTubeV3?resourceTypeId=600&resourceId=6830

Equipment Deployed

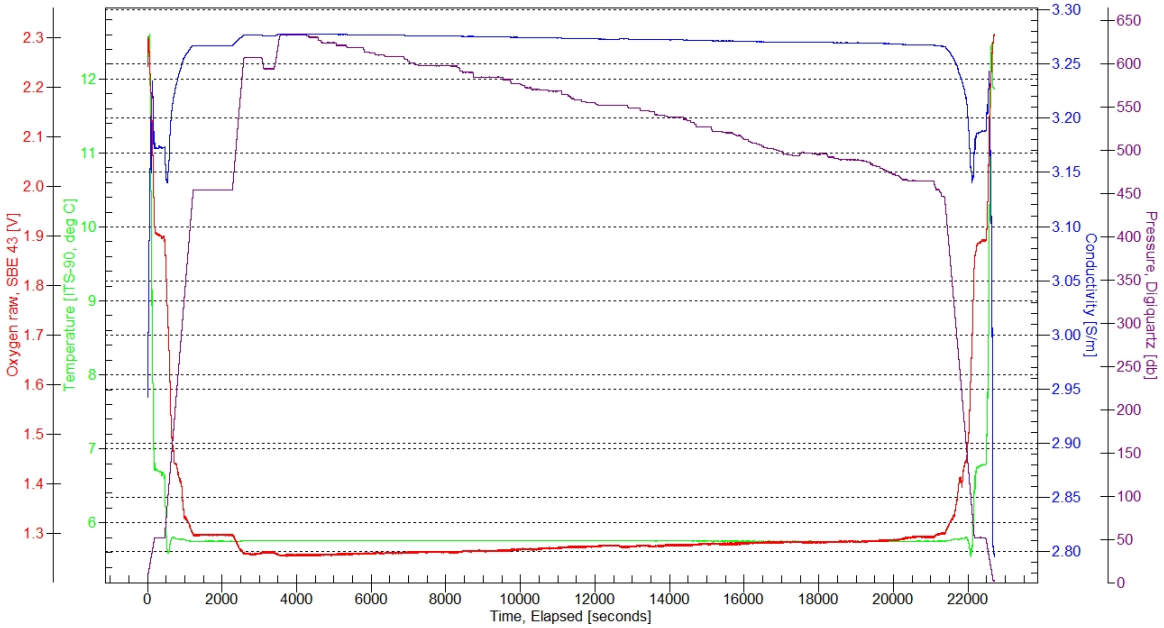
ROV	*Deep Discoverer*
Camera Platform	*Seirios*
ROV Measurements	The following ROV measurements, data streams and equipment are used on each ROV deployment: CTD, depth, scanning sonar, USBL position, altitude, heading, attitude, high-resolution cameras, low resolution cameras, manipulator arms, suction sampler, sample drawers and thrusters. The following row notes if any of these sensors were malfunctioning or not operational
Equipment Malfunctions	None.

Close-Up Map of Main Dive Site



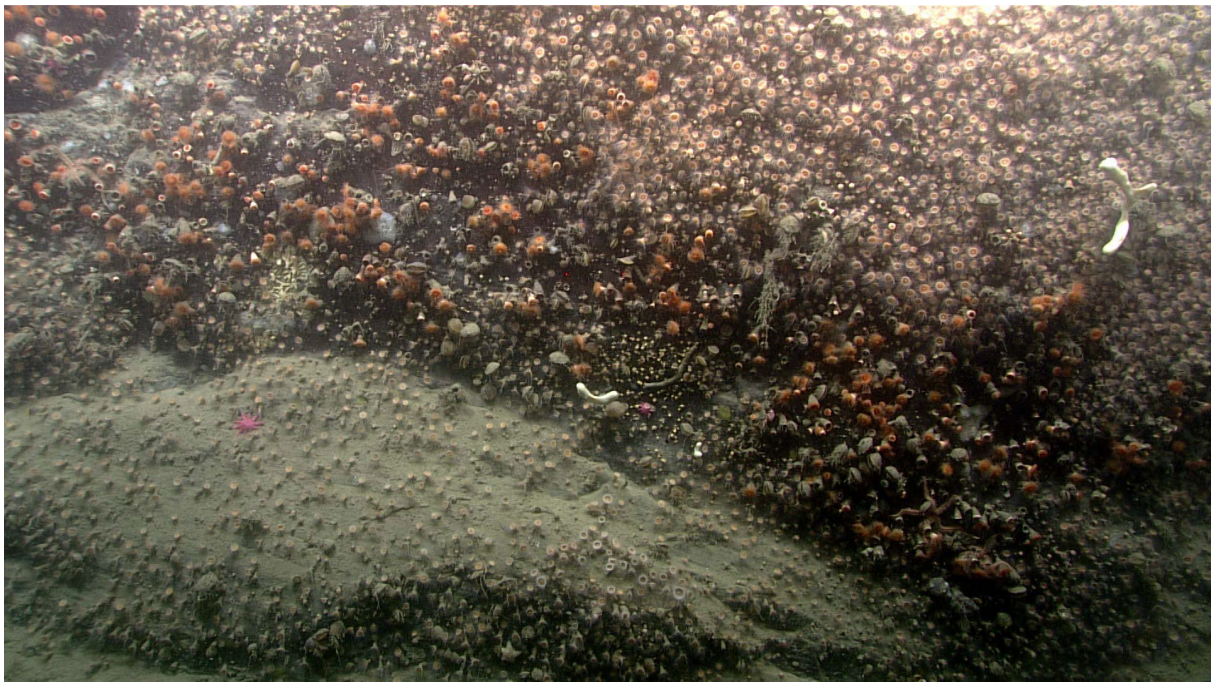
Smoothed ROV dive track in white on 30x30 cell size bathymetry, 1x vertical exaggeration, depth in meters, 100 meter contours.

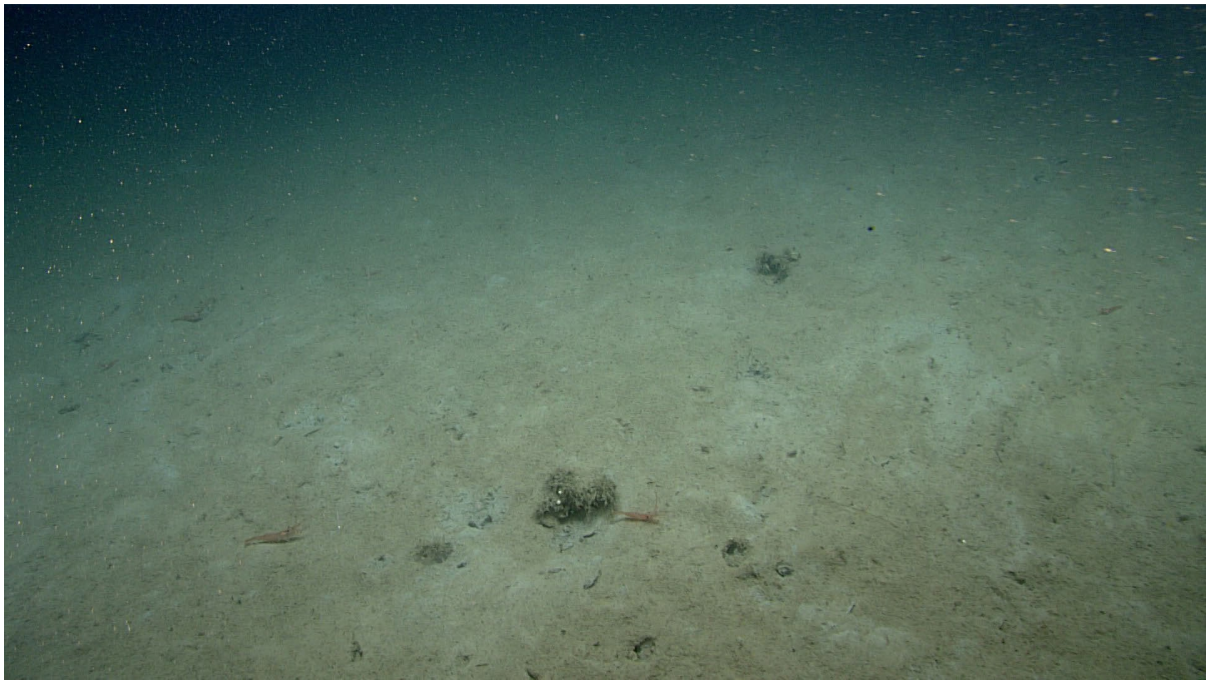
ROV CTD Profile



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

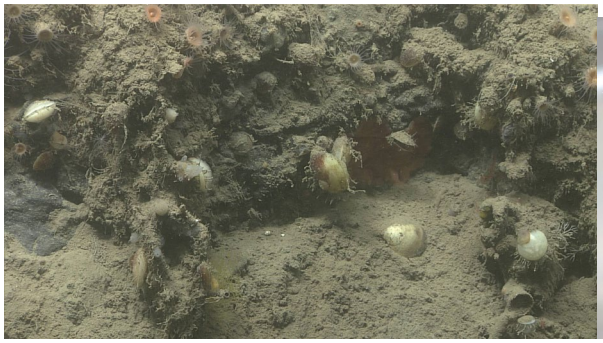
Representative Photos of the Dive





Top: zoanthids, demosponges, and Crossaster sp. associated with hard substrate; Bottom: soft sediment with sparse fauna

Samples Collected



Sample ID	EX2306_D19_03B
Date (UTC)	20230913
Time (UTC)	202912
Depth (m)	608.909973144531
Latitude (decimal degrees)	60.7021713256836
Longitude (decimal degrees)	-147.699111938477
Temp. (°C)	5.76100015640259
Field ID(s)	Ptychogastria

Associates Sample ID:	EX2306_D19_03B_A01B
Field Identification:	Polynoidae
Count:	1

Sample ID	EX2306_D19_04B
Date (UTC)	20230913
Time (UTC)	205008
Depth (m)	593.700012207031
Latitude (decimal degrees)	60.7021751403809
Longitude (decimal degrees)	-147.699401855469
Temp. (°C)	5.75799989700317
Field ID(s)	Demospongiae

Associates Sample ID:	EX2306_D19_04B_A01B
Field Identification:	gastropoda
Count:	1

Sample ID	EX2306_D19_05G
Date (UTC)	20230913
Time (UTC)	211201
Depth (m)	579.866027832031
Latitude (decimal degrees)	60.7023658752441
Longitude (decimal degrees)	-147.699783325195
Temp. (°C)	5.76000022888184
Field ID(s)	Basalt
Comments	Dark gray aphanitic basalt with cemented conglomeratic sediment. Several patches of black iron sulfide coated this sample.

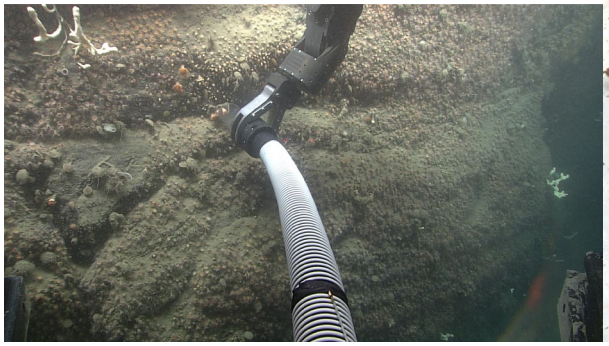
Associates Sample ID:	EX2306_D19_05G_A01B
Field Identification:	Brachiopoda
Count:	13

Associates Sample ID:	EX2306_D19_05G_A02B
Field Identification:	Polychaeta
Count:	1

Associates Sample ID:	EX2306_D19_05G_A03B
Field Identification:	Corallimorpharia
Count:	1

Associates Sample ID:	EX2306_D19_05G_A04B
Field Identification:	Hydrozoa
Count:	1

Associates Sample ID:	EX2306_D19_05G_A06B
Field Identification:	Caprellidea
Count:	1



Sample ID	EX2306_D19_06B
Date (UTC)	20230913
Time (UTC)	214246
Depth (m)	561.023010253906
Latitude (decimal degrees)	60.702335357666
Longitude (decimal degrees)	-147.69987487793
Temp. (°C)	5.76300001144409
Field ID(s)	Caryophyllia

Associates Sample ID:	EX2306_D19_06B_A01B
Field Identification:	Brachiopoda
Count:	1

Associates Sample ID:	EX2306_D19_06B_A02B
Field Identification:	Decapoda
Count:	1

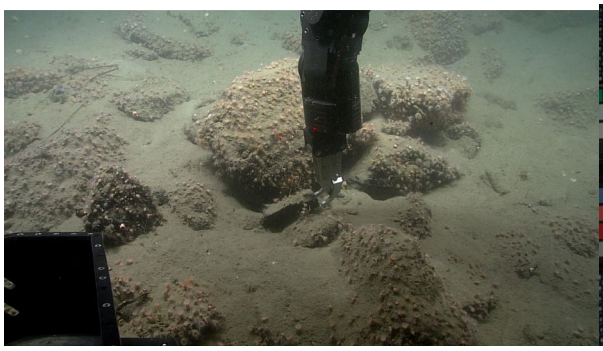
Associates Sample ID:	EX2306_D19_06B_A03B
Field Identification:	Hiatellidae
Count:	1

Associates Sample ID:	EX2306_D19_06B_A04B

Field Identification:	Serpulidae
Count:	1

Associates Sample ID:	EX2306_D19_06B_A05B
Field Identification:	chaetognatha
Count:	1

Associates Sample ID:	EX2306_D19_06B_A06B
Field Identification:	Isopoda
Count:	2



Sample ID	EX2306_D19_08G
Date (UTC)	20230914
Time (UTC)	000307
Depth (m)	478.151000976563
Latitude (decimal degrees)	60.7025833129883
Longitude (decimal degrees)	-147.703506469727
Temp. (°C)	5.90500020980835
Field ID(s)	Basalt
Comments	angular medium- to dark-gray aphanitic basalt with brown- to dark-brown iron stain

Associates Sample ID:	EX2306_D19_08G_A01B
Field Identification:	Epizoanthus
Count:	20

Associates Sample ID:	EX2306_D19_08G_A02B
Field Identification:	Pectinidae
Count:	1

Associates Sample ID:	EX2306_D19_08G_A03B
Field Identification:	Trichobranchidae
Count:	1

Niskin Sampling Summary

Sample ID	EX2306_D19_01W
Date (UTC)	20230913
Time (UTC)	192032
Depth (m)	643.35400390625
Latitude (decimal degrees)	60.7020721435547
Longitude (decimal degrees)	-147.698425292969
Bottle Number	Niskin Bottle 1
Temperature	5.7649998664856
Dissolved Oxygen (mg/L)	4.65500020980835
Treatment	DNA/RNA Shield

Sample ID	EX2306_D19_02W
Date (UTC)	20230913
Time (UTC)	200035
Depth (m)	618.156005859375
Latitude (decimal degrees)	60.7021026611328
Longitude (decimal degrees)	-147.698974609375
Bottle Number	Niskin Bottle 2
Temperature	5.76000022888184
Dissolved Oxygen (mg/L)	4.67500019073486
Treatment	DNA/RNA Shield

Sample ID	EX2306_D19_07W
Date (UTC)	20230913

Time (UTC)	225559
Depth (m)	512.122985839844
Latitude (decimal degrees)	60.7025680541992
Longitude (decimal degrees)	-147.700729370117
Bottle Number	Niskin Bottle 3
Temperature	5.76100015640259
Dissolved Oxygen (mg/L)	4.74599981307983
Treatment	DNA/RNA Shield

Sample ID	EX2306_D19_09W
Date (UTC)	20230914
Time (UTC)	002112
Depth (m)	176.511001586914
Latitude (decimal degrees)	60.7027549743652
Longitude (decimal degrees)	-147.702301025391
Bottle Number	Niskin Bottle 5
Temperature	5.79400014877319
Dissolved Oxygen (mg/L)	5.45599985122681
Treatment	DNA/RNA Shield

Scientists Involved

Name	Affiliation
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Arvind Shantharam	NCEI
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Christina Conrath	NOAA
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Emily Ashe	NOAA
Emily Crum	NOAA
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