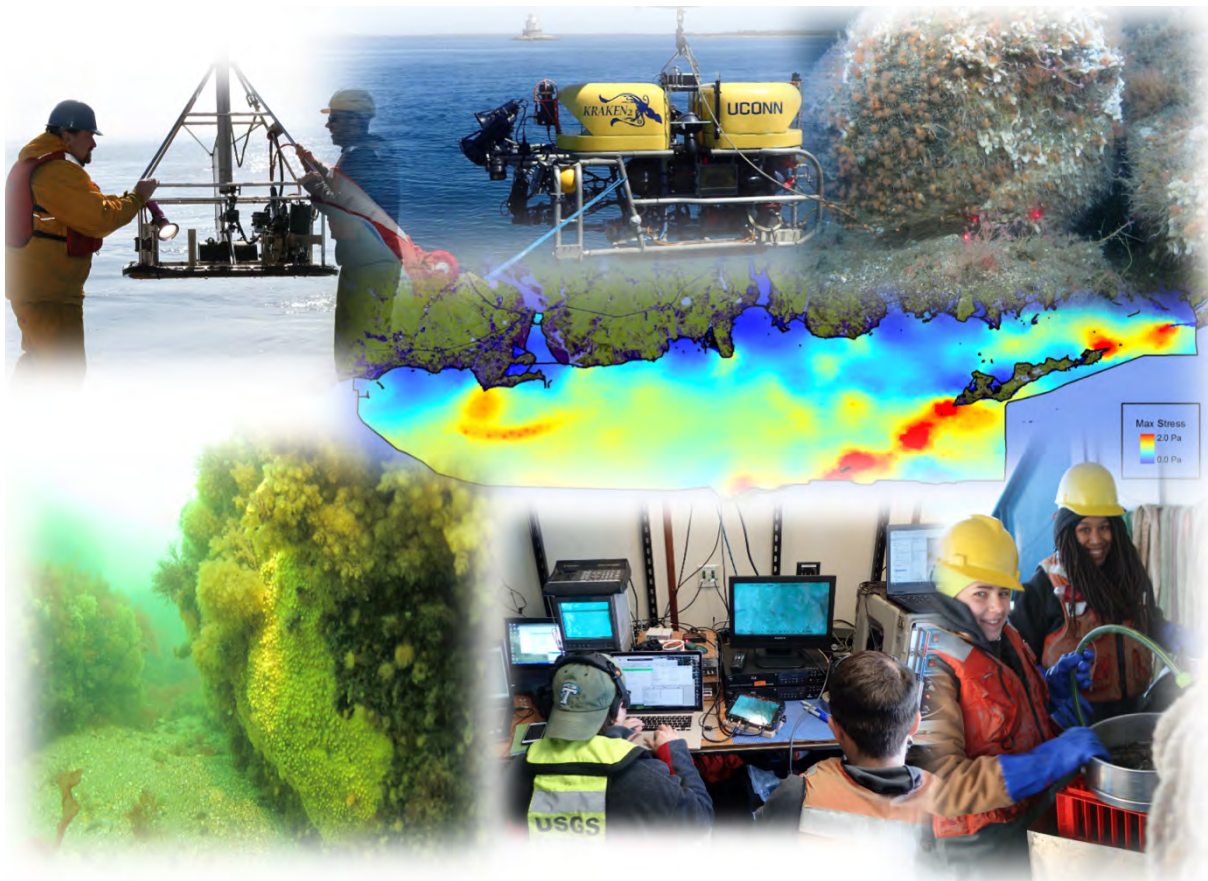


The Long Island Sound Habitat Mapping Initiative Phase II – Eastern Long Island Sound



Final Report: Appendices

Submitted by:
The Long Island Sound Mapping and Research Collaborative
(LISMaRC)

August 27, 2021
Revised June 10, 2022



TABLE OF CONTENTS

<i>Long Island Sound Cable Fund Steering Committee Organizations and Members</i>	<i>1</i>
<i>Collaborative Project Mapping Teams and Members</i>	<i>1</i>
<i>General Acknowledgements</i>	<i>2</i>
<i>LISMaRC Acknowledgements</i>	<i>3</i>
<i>Citations</i>	<i>3</i>
<i>APPENDIX 1 – MAP PRODUCTS</i>	<i>4</i>
Appendix 1-1: Shallow Water Acoustic Mapping	5
Appendix 1-2: Sediment Texture and Grain Size Distribution	8
Appendix 1-3: Sea Floor/Habitat Characterization	12
Appendix 1-4: Ecological Characterization	14
Appendix 1-4-1 Maps depicting infaunal community characteristics, community types, and the 10 most abundant taxa found are presented with both the backscatter mosaic and the acoustic patch types.	14
Appendix 1-4-2 Maps depicting epifaunal sample locations, diversity, community types, and abundance of notable taxa and biogenic features are presented with both the backscatter mosaic and the acoustic patch types.	14
Appendix 1-5: Physical Oceanographic Characterization	85
Appendix 1-5-1 Bottom stress maps	86
Appendix 1-5-2 Bottom current maps	89
Appendix 1-5-3 Bottom temperature maps	93
Appendix 1-5-4 Bottom salinity maps	105
<i>APPENDIX TWO – METADATA DOCUMENTATION</i>	<i>117</i>
Appendix 2-1: Shallow Water Acoustic Mapping Metadata	118
Appendix 2-1-1 – Processed Geoswath bathymetry metadata	119
Appendix 2-1-2 – Processed Geoswath side scan sonar metadata	123
Appendix 2-1-3 – Raw Geoswath acoustic, tidal height and sound velocity profile metadata	127
Appendix 2-2: Sediment Texture and Grain Size Distribution Metadata	132
Appendix 2-3: Ecological Characterization Metadata	144
Appendix 2-3-1 - Acoustic patch type and CMECS metadata	145
Appendix 2-3-2 – Infaunal community characteristics, classification and related environmental data metadata	149
Appendix 2-3-3 – Infaunal Excel database metadata	157
Appendix 2-3-4 – Epifauna 2017-2018 SEABOSS, ROV and wet diving and CMECS metadata	159
Appendix 2-3-5 – Epifaunal 2017 SEABOSS community characteristics, classification and related environmental data metadata	164
Appendix 2-3-6 – Epifaunal 2018 SEABOSS and ROV community characteristics, classification and related environmental data metadata	168
Appendix 2-3-7 – Wet diving image metadata	173
Appendix 2-3-8 – Wet diving suction sample metadata	177
Appendix 2-3-9 – 2017 SEABOSS diversity metadata	180
Appendix 2-3-10 – 2018 SEABOSS diversity metadata	183
Appendix 2-3-11 – 2017-2018 SEABOSS select feature abundance metadata	186
Appendix 2-3-12 – 2017-2018 SEABOSS Simper cluster metadata	189
Appendix 2-3-13 – 2017-2018 SEABOSS select taxa metadata	192

Appendix 2-4: Physical Oceanographic Characterization Metadata	195
Appendix 2-4.1: CTD Profiles, Moored CTD, Moored RDI and Nortec ADCP	196
Appendix 2-4.2: Modeling for Bottom Stresses and Currents	208
Appendix 2-4.3: Modeling for Temperature and Salinity	211
<i>APPENDIX THREE – FIELD DATA COLLECTION LOGS</i>	214
Appendix 3-1: Shallow Water Acoustic Mapping Field Logs	215
Appendix 3-2: USGS SEABOSS Field Logs – 2017 and 2018	240
Appendix 3-3: Kraken2 Remotely Operated Vehicle Field Log	355
Appendix 3-4: Kraken2 Remotely Operated Vehicle Operations Summary	368
Appendix 3-5: Kraken2 Remotely Operated Vehicle Photo Log	370
Appendix 3-6: Physical Oceanographic Characterization Station Locations	416

Long Island Sound Cable Fund Steering Committee Organizations and Members

US Environmental Protection Agency, Long Island Sound Study
888 Washington Blvd, Stamford, CT 06901 (203) 977-1541

- Mark Tedesco

Connecticut Department of Energy and Environmental Protection, Land and Water Resources
Division 79 Elm St., Hartford CT 06106 (860) 424-3034

- Brian Thompson
- Kevin O'Brien
- DeAva Lambert

New York Department of Environmental Conservation, Division of Marine Resources 205
North Belle Mead Road, Suite 1, East Setauket, New York 11733 (631) 444-0430

- Dawn McReynolds
- Victoria O'Neill
- Cassandra Bauer

New York Department of State, Office of Planning and Development
One Commerce Plaza Suite 1010, 99 Washington Ave., Albany, NY 12231-0001
(518) 474-6000

- Jeff Herter

Connecticut Sea Grant, University of Connecticut - Avery Point Marine Science Building
1080 Shennecossett Rd, Groton, Connecticut 06340-6048 (860) 405-9128

- Sylvain De Guise, Ph.D.

New York Sea Grant 125 Nassau Hall, Stony Brook University, Stony Brook, NY 11794-
5001 (631) 632-6905

- Rebecca L. Shuford, Ph.D.

Collaborative Project Mapping Teams and Members

Long Island Sound Mapping and Research Collaborative (LISMARC):

University of Connecticut Avery Point, Marine Sciences Department
1080 Shennecossett Rd, Groton, Connecticut 06340-6048 (860) 405-9128.

- Ivar G. Babb, Principal Investigator
- Dennis Arbige

- Peter J. Auster, Ph.D.
- Chris W. Conroy, Ph.D.
- Todd Fake
- Kay Howard-Strobel
- Grant McCardell, Ph.D.
- Jim O'Donnell, Ph.D.

University of New Haven
300 Boston Post Rd, West Haven, CT 06516 (203) 932-7000.

- Roman N. Zajac, Ph.D.
- Chris Conroy, Ph.D.
- Nicole Govert
- Courtney Schneeburger
- Olivia Walton

U.S. Geological Survey
384 Woods Hole Rd., Woods Hole, MA 02543-1598
(508) 548-8700

- Seth Ackermann
- Dann Blackwood

Mystic Aquarium
55 Coogan Blvd.
Mystic, CT 06355

- Peter J. Auster, PhD.

General Acknowledgements

This project was made possible by the Long Island Sound Research and Restoration Fund, established by a Memorandum of Understanding among the members of the Policy Committee of the Long Island Sound Management Conference and administered by Long Island Sound Cable Fund Steering Committee.

The Steering Committee would like to thank and acknowledge the following:

- Katie Dykes: Commissioner, Connecticut Department of Energy & Environmental Protection
- Basil Seggos: Commissioner, New York Department of Environmental Conservation
- Deborah Szaro: Acting Regional Administrator, U.S. Environmental Protection Agency, New England-Region 1
- Walter Mugdan: Acting Regional Administrator, U.S. Environmental Protection Agency, New York-Region 2
- Benjamin Friedman, Acting NOAA Administrator and Under Secretary of Commerce for Oceans and Atmosphere

- Northeast Utilities Services Company
- Long Island Power Authority
- Cross Sound Cable, Inc.

LISMaRC Acknowledgements

The LISMaRC Team would like to thank the crew of the Research Vessel *Connecticut*, (Marc Liebig, Captain), the operators of the Kraken2 remotely operated vehicle (Kevin Joy, Dennis Arbige) the operators of the USGS SEABOSS (Dann Blackwood, Seth Ackerman), UConn Diving Safety Officer (Jeff Godfrey) and Research Vessel *Osprey* (Charles Woods, Captain).

We also thank the following for their assistance in the field and/or laboratory:

Nicole Adrion, Shaina Harkins, Tyler Fountain, Alexis Guitard, Annalee Mears, Marisa Thompson, and Amanda Tucker.

Citations

The recommended citations for the overall work and appendices are:

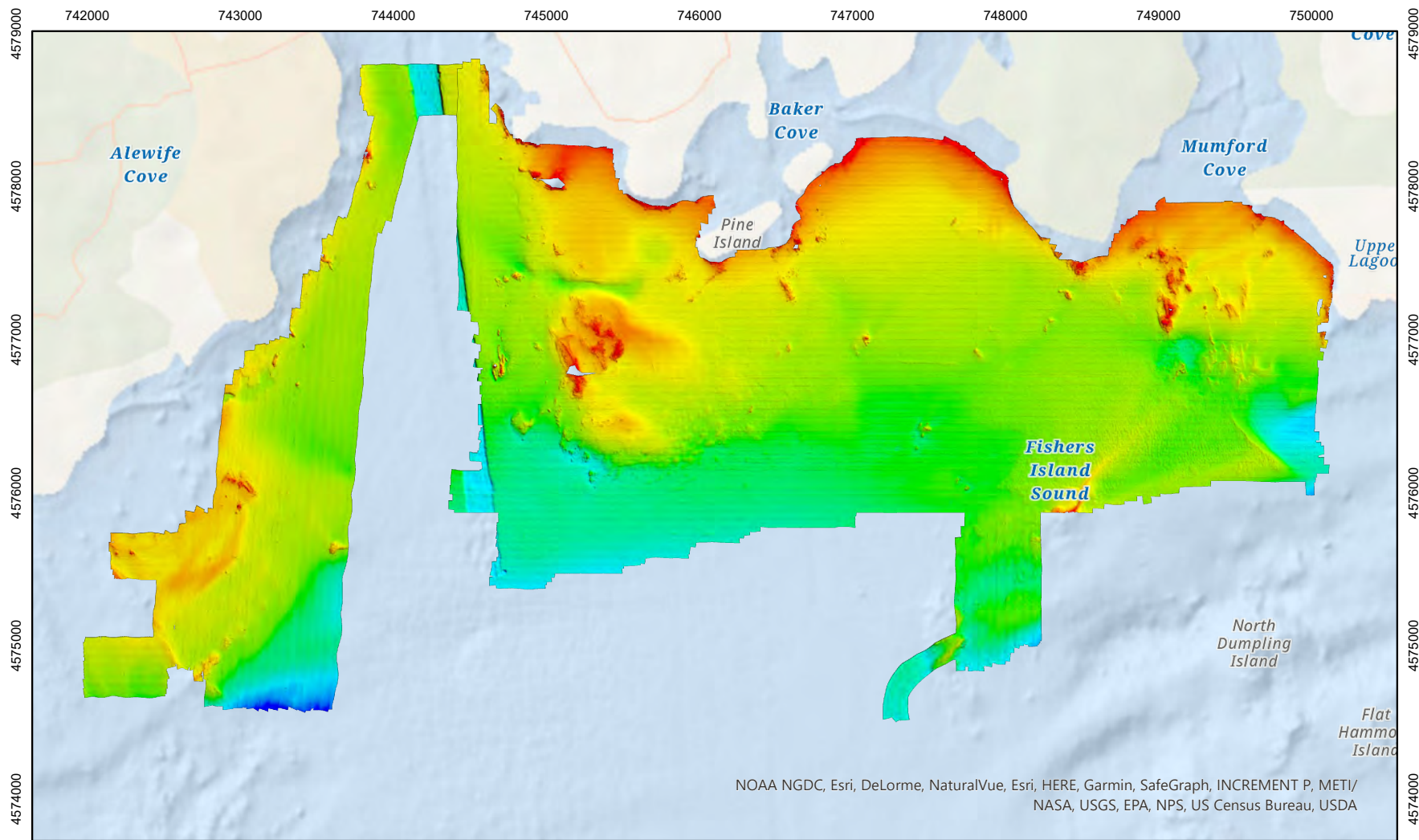
Long Island Sound Mapping and Research Collaborative (LISMaRC). (2021). “The Long Island Sound Habitat Mapping Initiative Phase II – Eastern Long Island Sound – Final Report.” (Unpublished project report).

Long Island Sound Mapping and Research Collaborative (LISMaRC). (2021). “The Long Island Sound Habitat Mapping Initiative Phase II – Eastern Long Island Sound – Appendices.” (Unpublished project report).

The recommended citations for the individual chapters that follow are provided at the beginning of each section.

APPENDIX 1 – MAP PRODUCTS

Appendix 1-1: Shallow Water Acoustic Mapping



LIS Cable Fund Mapping Phase 2: CARIS Processed Bathymetry for Blocks 23, 24 and 25

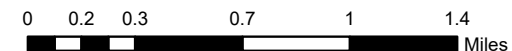
Depth (meters)

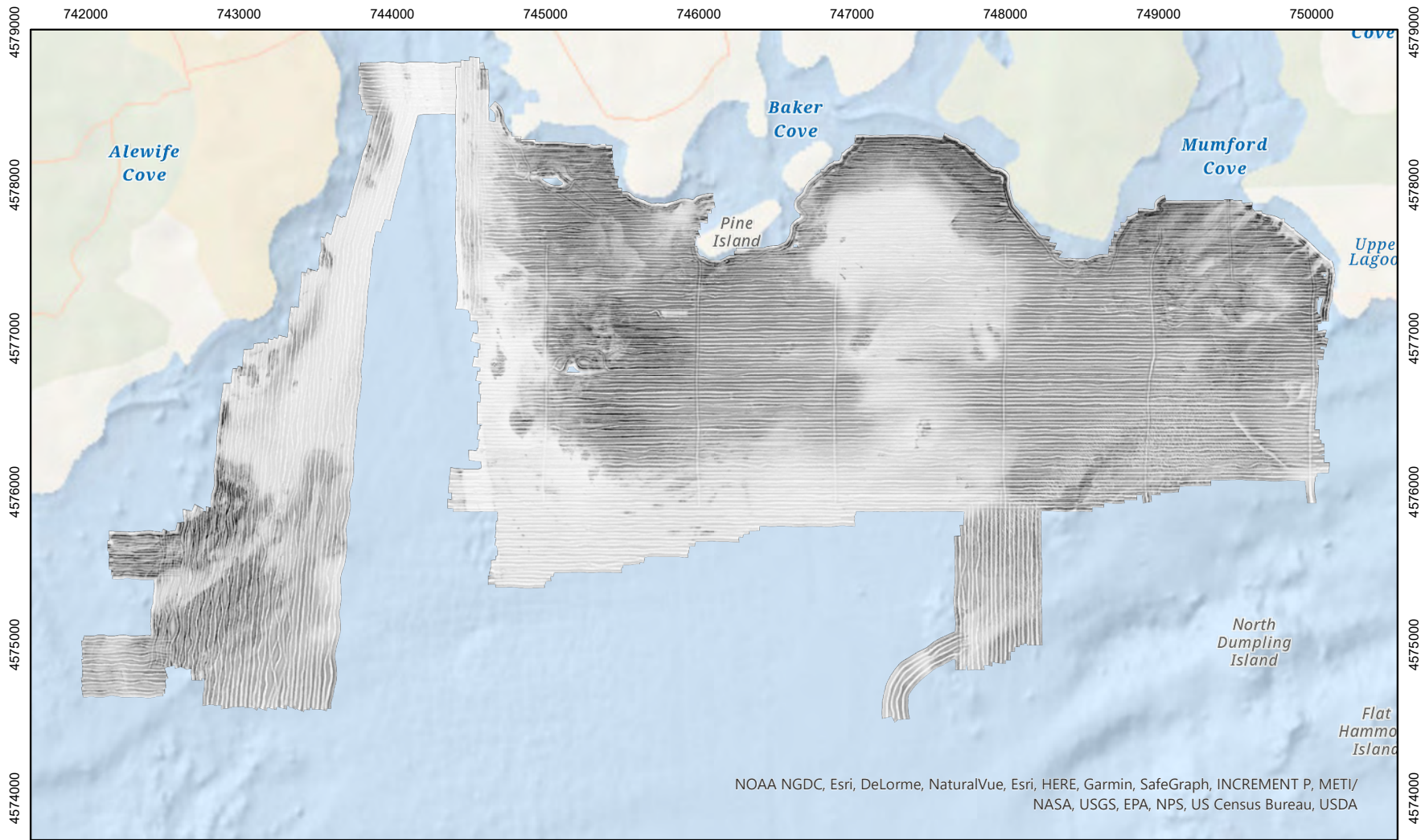


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu>

Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: CARIS Processed Backscatter for Blocks 23, 24 and 25



Reflectance Value

0
188.682
133.432
78.182
253



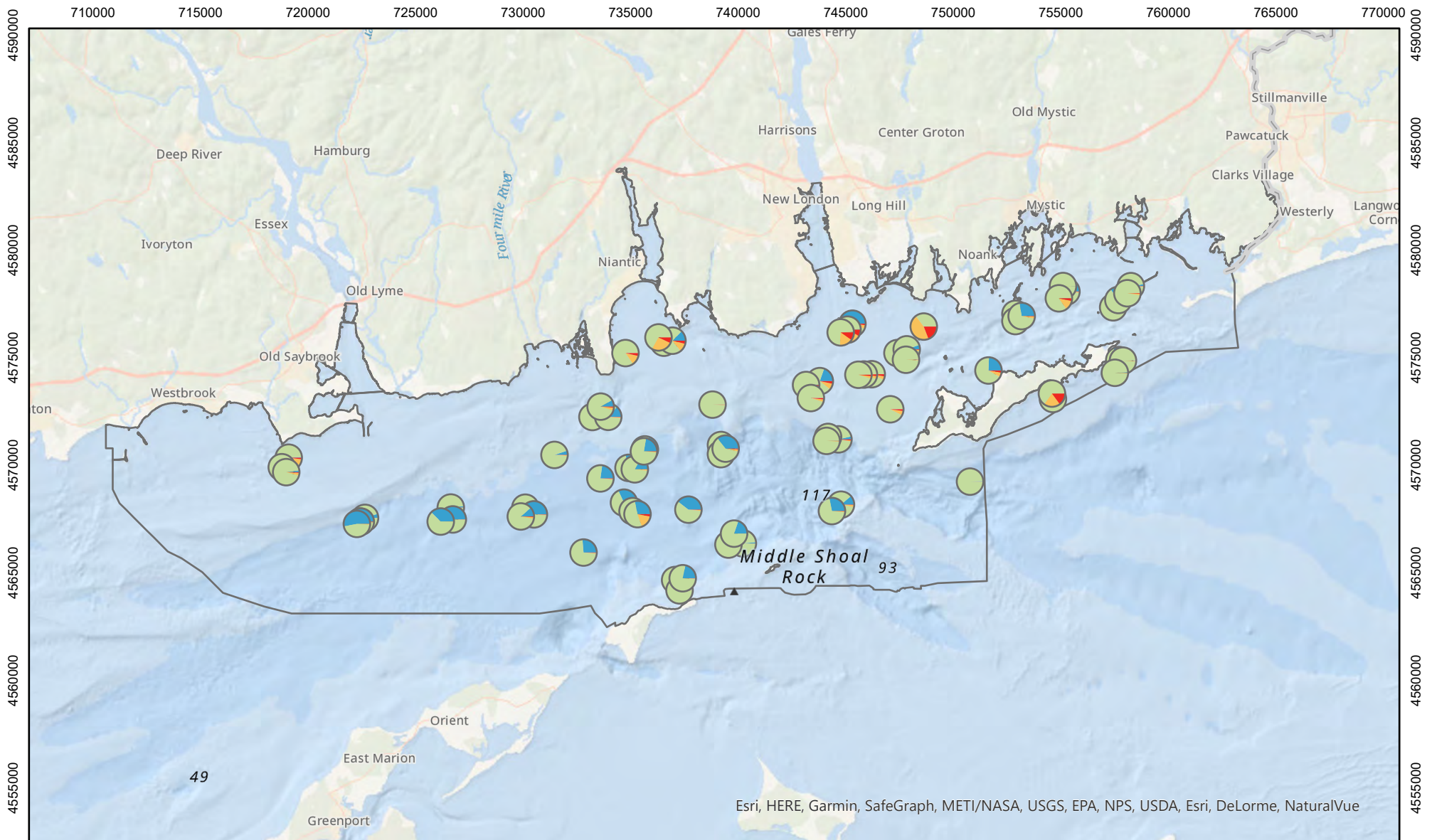
Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu>

7
Horizontal Coordinate System UTM Zone 18N, NAD 1983

0 0.2 0.3 0.7 1 1.4
Miles

Appendix 1-2: Sediment Texture and Grain Size Distribution



Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu>

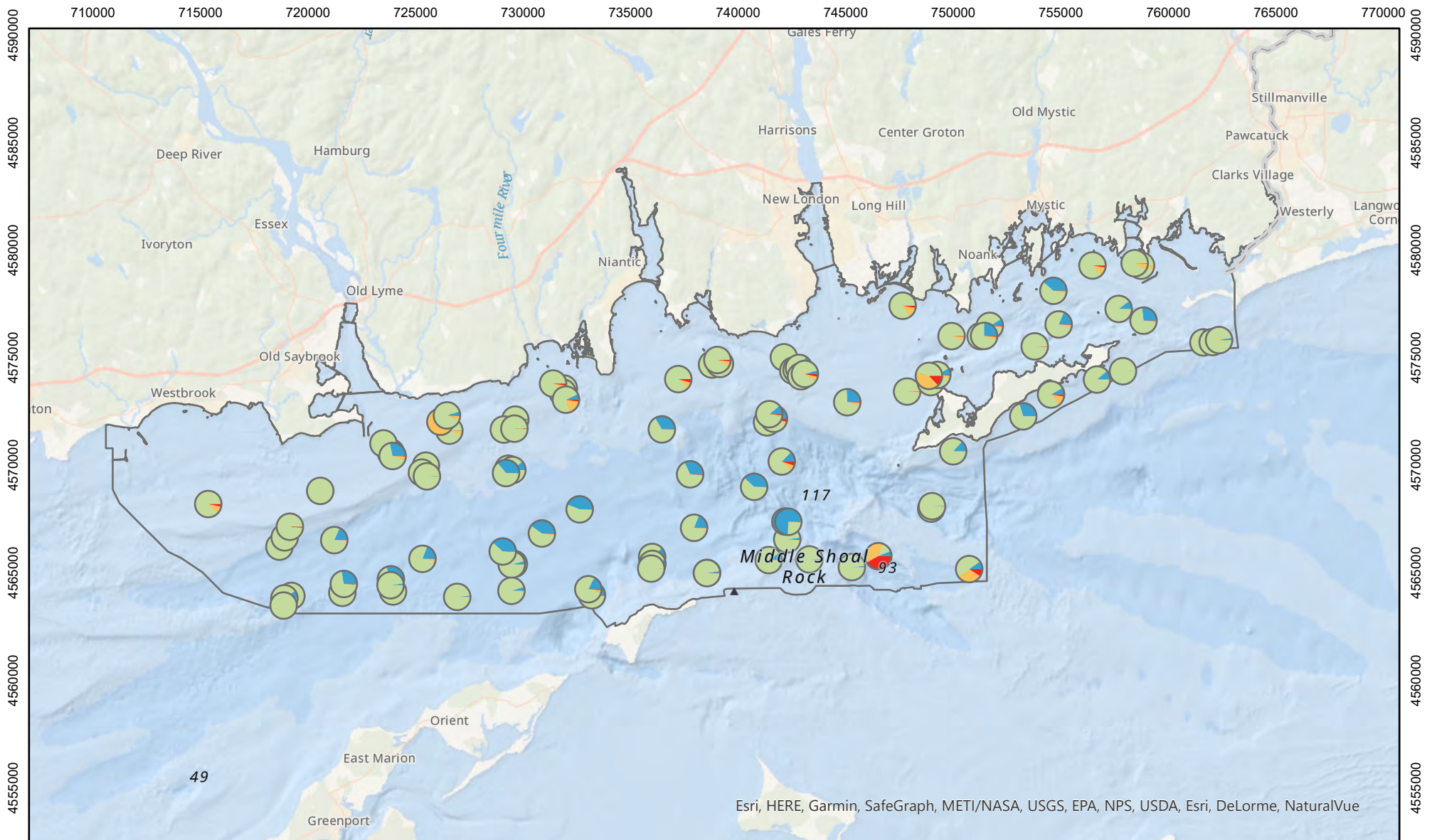
LIS Cable Fund Mapping Phase 2: Sediment Characterization - Fall 2017 Samples

Sediment Type



GRAVEL_PCT
SAND_PCT
SILT_PCT
CLAY_PCT

0 1.3 2.5 5 7.5 10 Miles



Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu>

LIS Cable Fund Mapping Phase 2: Sediment Characterization - Spring 2018 Samples



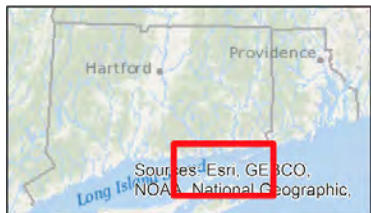
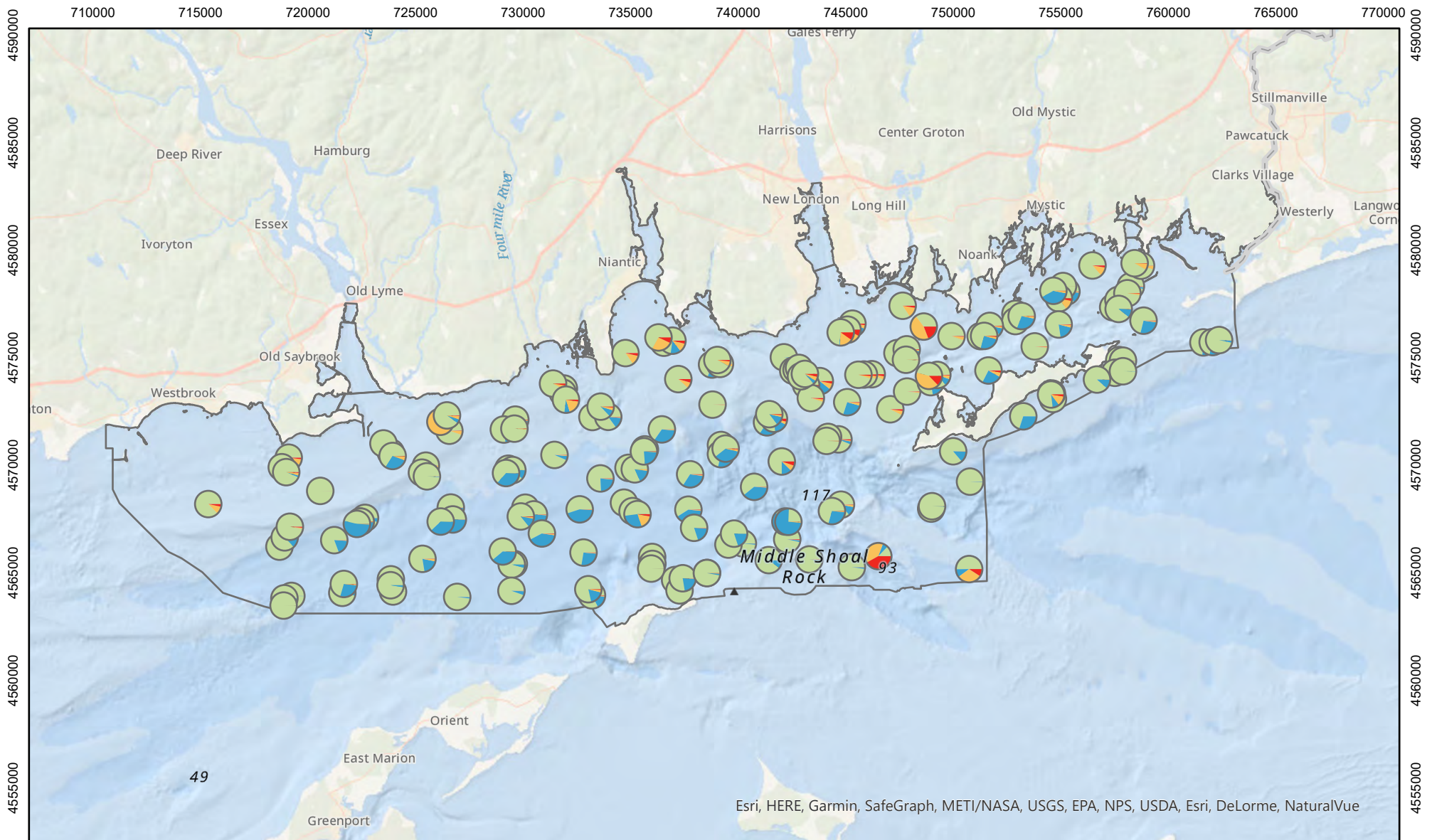
Horizontal Coordinate System UTM Zone 18N, NAD 1983

Sediment Type



GRAVEL_PCT
SAND_PCT
SILT_PCT
CLAY_PCT

0 1.3 2.5 5 7.5 10 Miles



Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu>

LIS Cable Fund Mapping Phase 2: Sediment Characterization - Fall 2017 and Spring 2018 Samples

Sediment Type

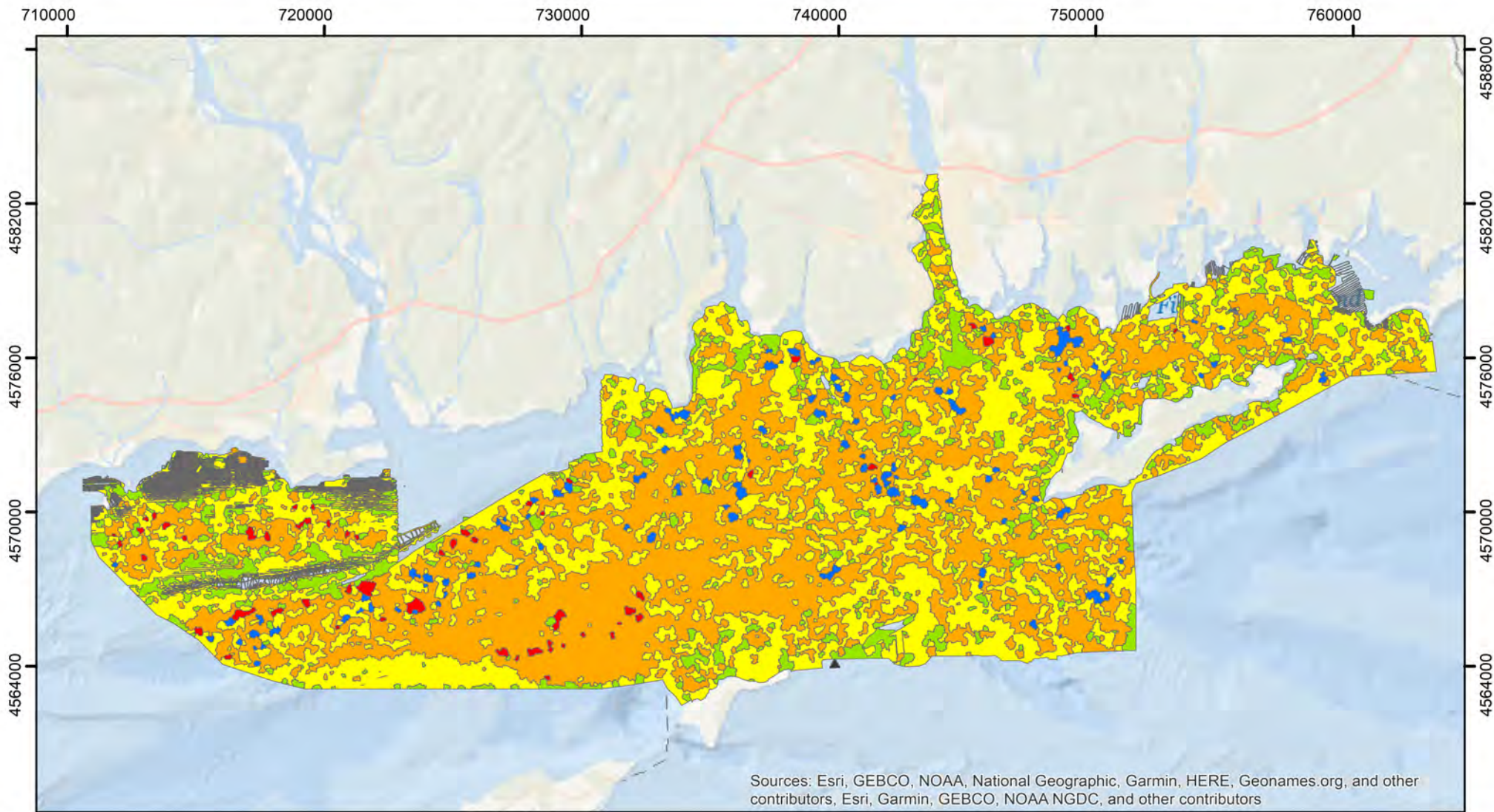


- SAND_PCT
- GRAVEL_PCT
- SILT_PCT
- CLAY_PCT

0 1.3 2.5 5 7.5 10 Miles

Horizontal Coordinate System UTM Zone 18N, NAD 1983

Appendix 1-3: Sea Floor/Habitat Characterization



LIS Cable Fund Mapping Phase 2: Acoustic Patch Type



Acoustic Patch Type

- A - Sandy Silt
- B - Silty Sand
- C - Gravel/Sand
- D - Gravelly Sand
- E - Sandy Gravel



Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

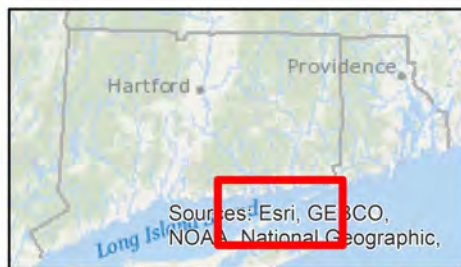
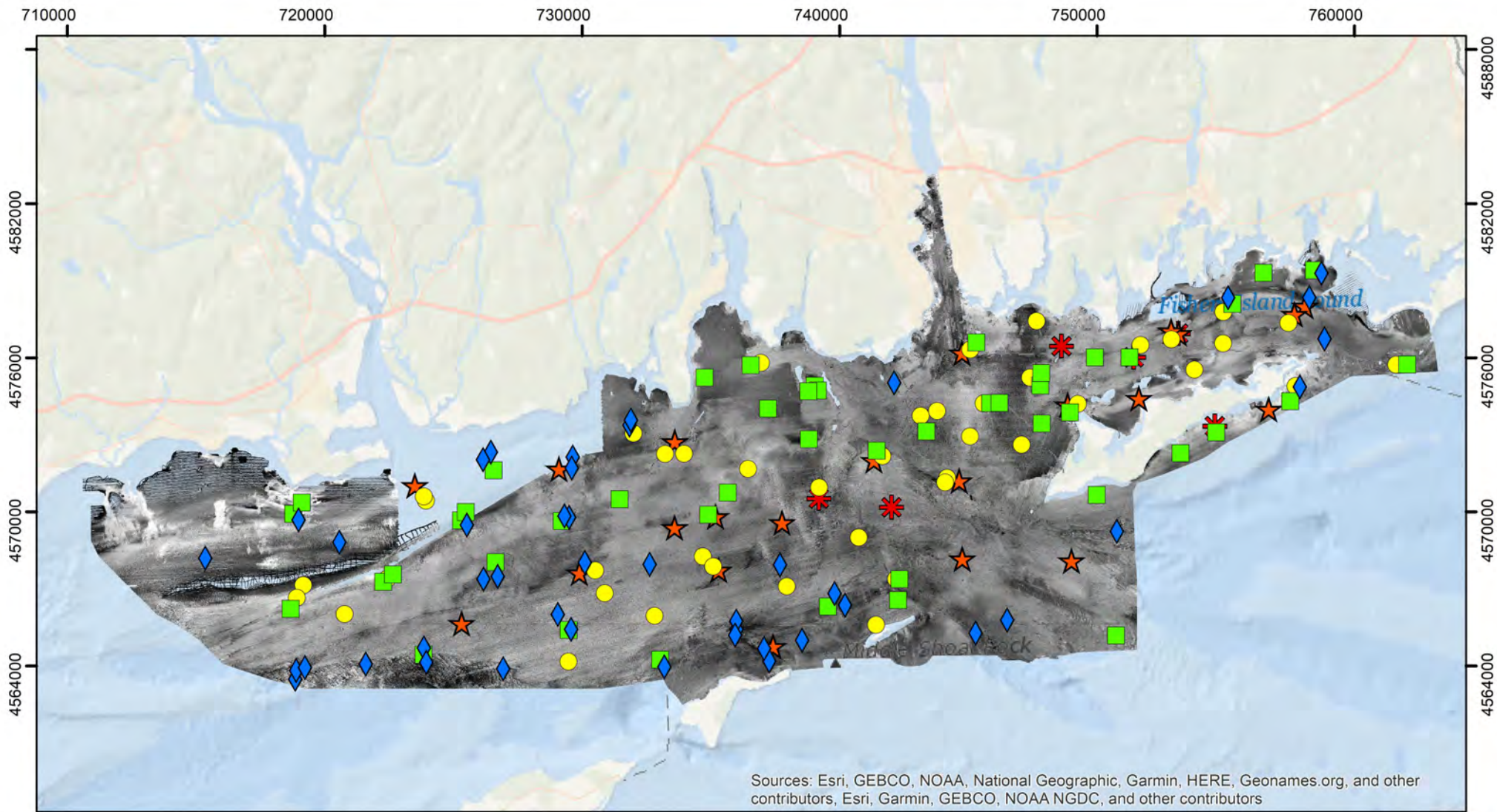
Horizontal Coordinate System UTM Zone 18N, NAD 1983

0 1 2 4 6 8 Miles

Appendix 1-4: Ecological Characterization

Appendix 1-4-1 Maps depicting infaunal community characteristics, community types, and the 10 most abundant taxa found are presented with both the backscatter mosaic and the acoustic patch types.

Appendix 1-4-2 Maps depicting epifaunal sample locations, diversity, community types, and abundance of notable taxa and biogenic features are presented with both the backscatter mosaic and the acoustic patch types.



LIS Cable Fund Mapping Phase 2: Infaunal Total Abundance



Infaunal Total Abundance

- ◆ 1 - 88
- 89 - 176
- 177 - 321
- ★ 322 - 550
- ✱ 551 - 967

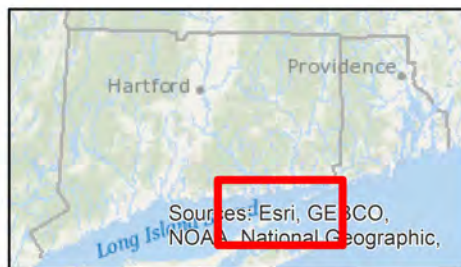
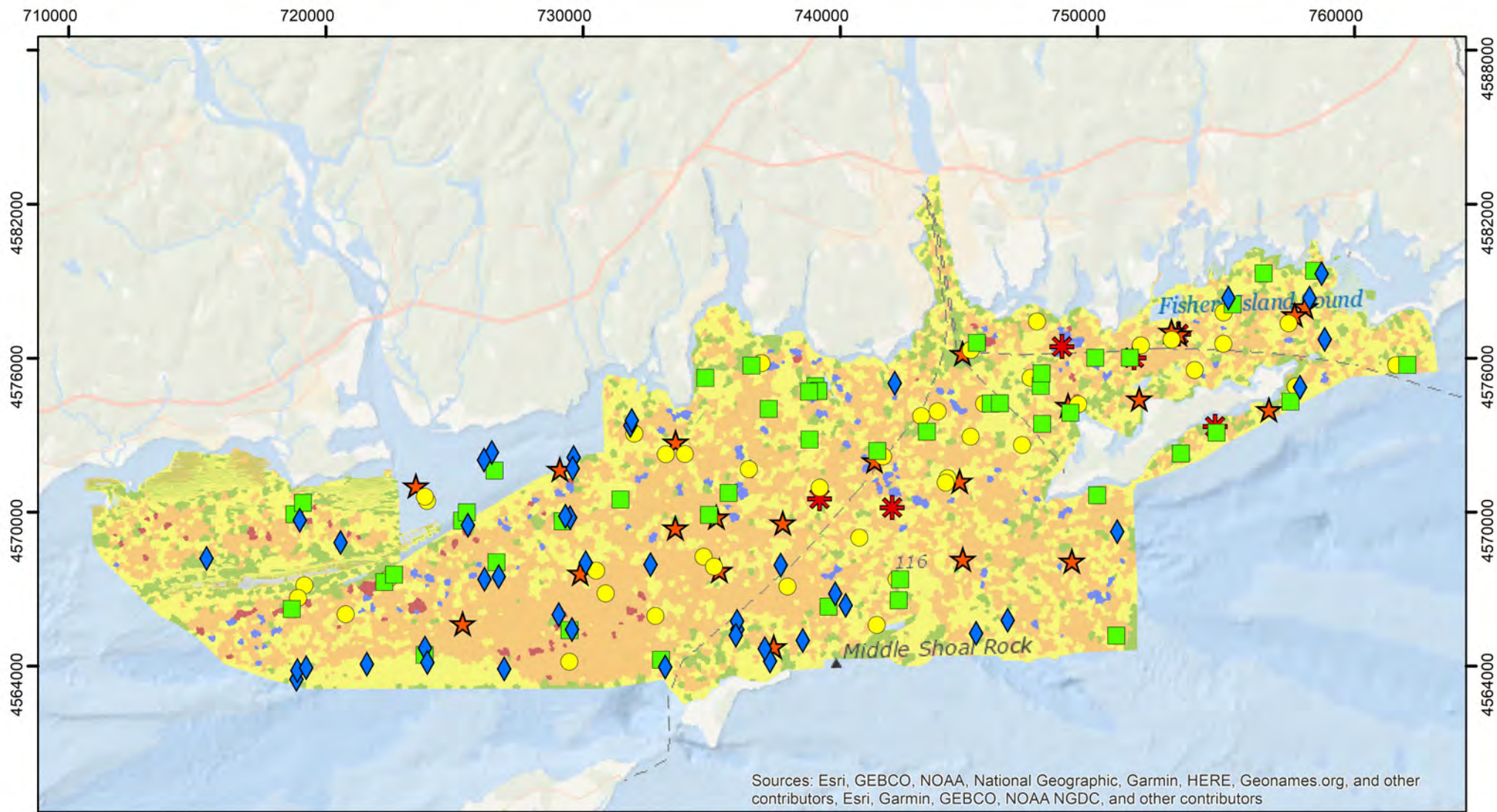


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983

0 1 2 4 6 8 Miles



LIS Cable Fund Mapping Phase 2: Infaunal Total Abundance

Infaunal Total Abundance

- ◆ 1 - 88
- 89 - 176
- 177 - 321
- ★ 322 - 550
- ✱ 551 - 967

eCognition Classification

- A - Sandy Silt
- B - Silty Sand
- C - Gravel/Sand
- D - Gravelly Sand
- E - Sandy Gravel

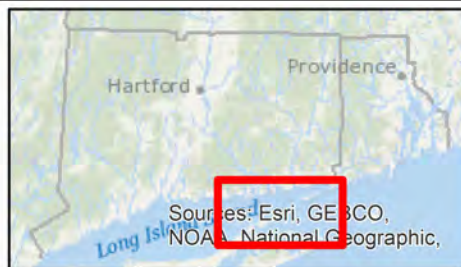
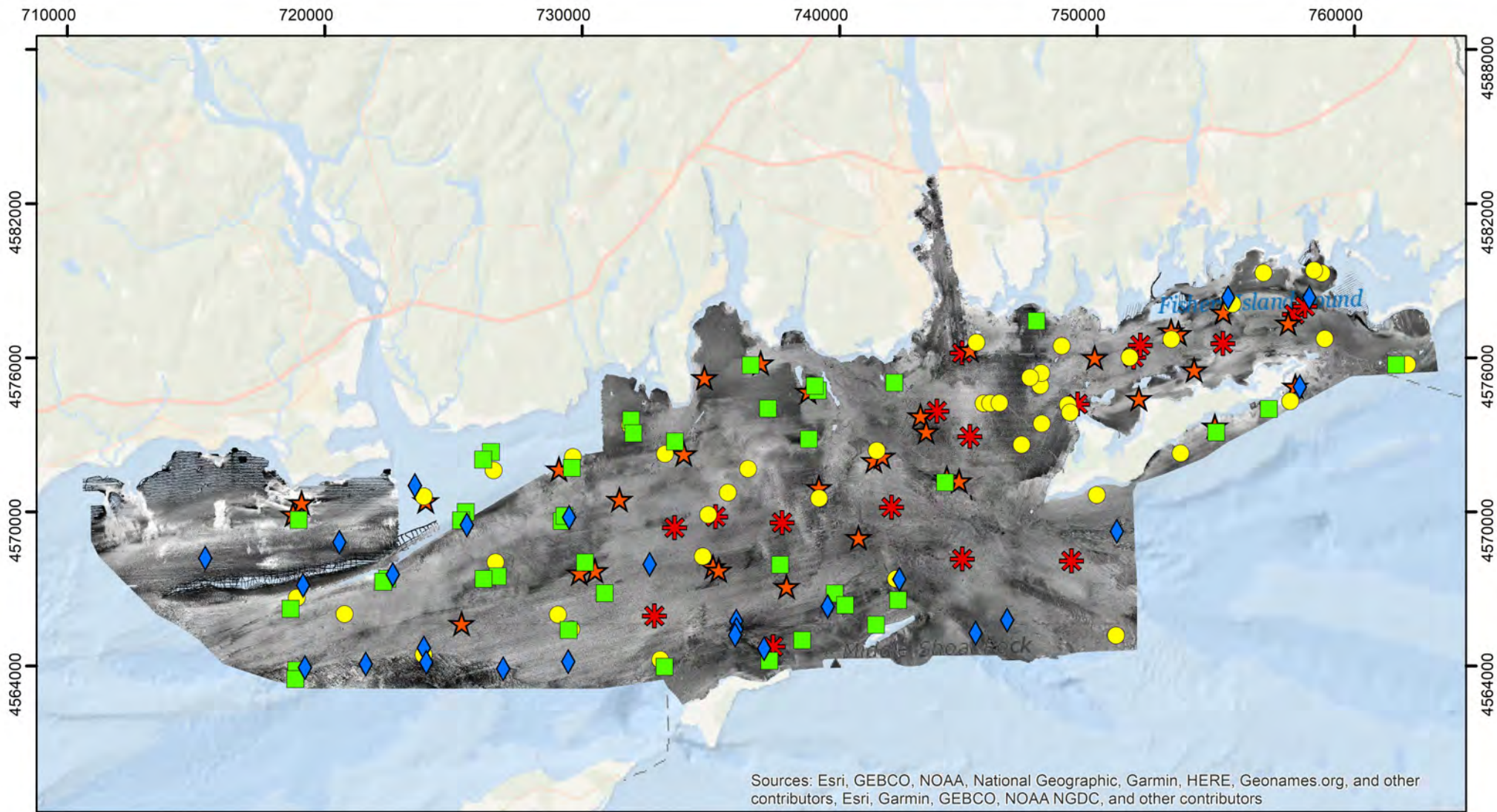


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983

0 1 2 4 6 8 Miles



LIS Cable Fund Mapping Phase 2: Infaunal Taxonomic Richness



Infaunal Taxonomic Richness

- ◆ 1 - 12
- 13 - 20
- 21 - 29
- ★ 30 - 38
- ✱ 39 - 47

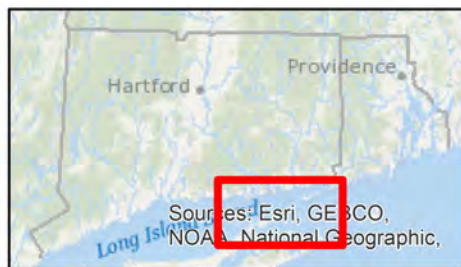
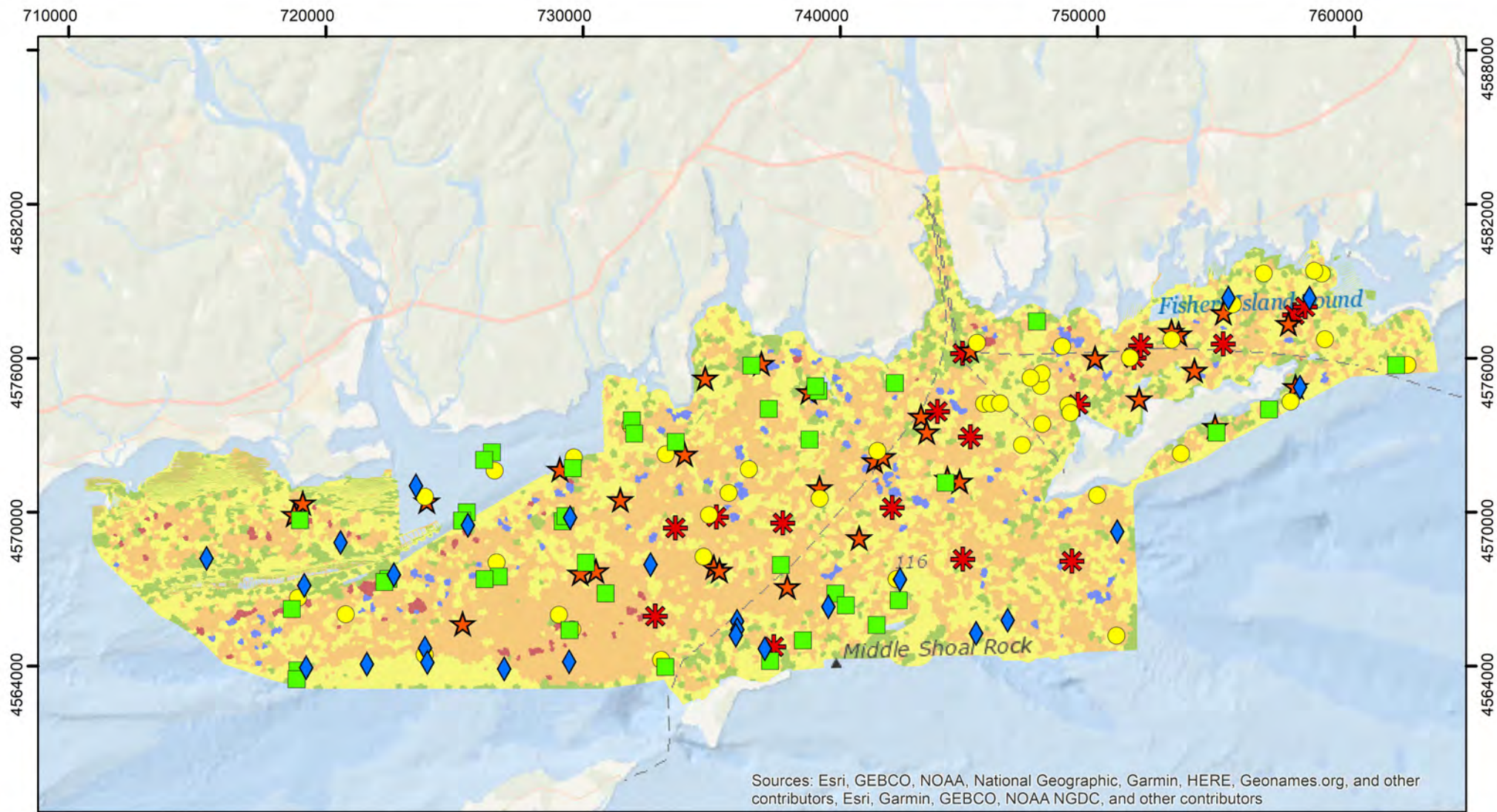


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983

0 1 2 4 6 8 Miles



LIS Cable Fund Mapping Phase 2: Infaunal Taxonomic Richness



Infaunal Taxonomic Richness

- ◆ 1 - 12
- 13 - 20
- 21 - 29
- ★ 30 - 38
- ✱ 39 - 47

eCognition Classification

- A - Sandy Silt
- B - Silty Sand
- C - Gravel/Sand
- D - Gravelly Sand
- E - Sandy Gravel

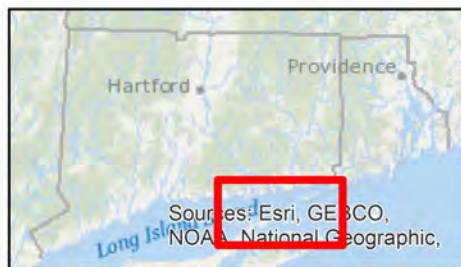
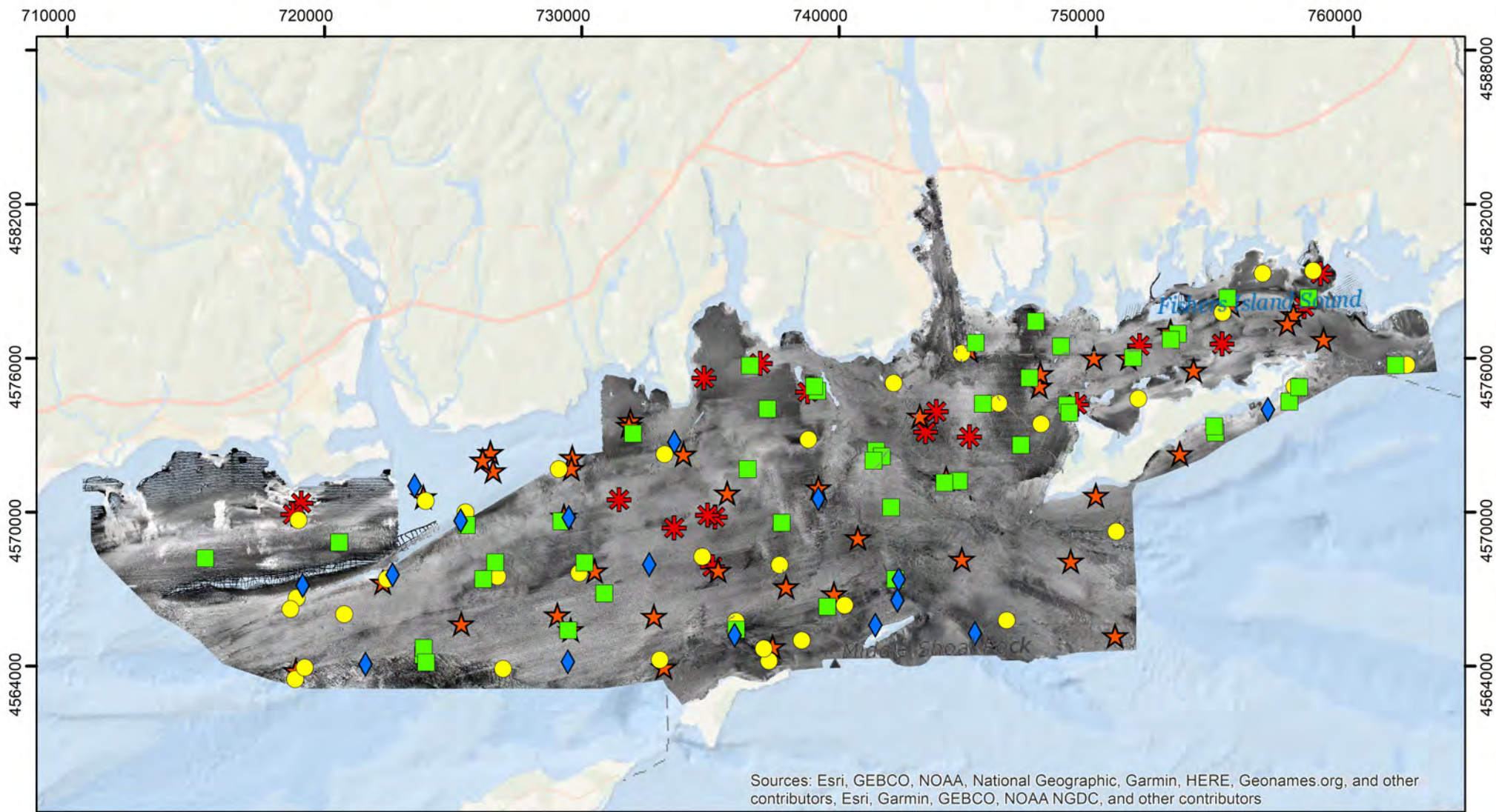


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983

0 1 2 4 6 8 Miles



LIS Cable Fund Mapping Phase 2: Infaunal Diversity (Log H)

Infaunal Diversity (Log H)

- ◆ 0.1 - 0.50
- 0.51 - 0.78
- 0.79 - 0.99
- ★ 1.00 - 1.19
- ✱ 1.20 - 1.40

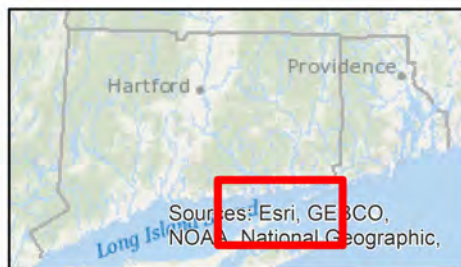
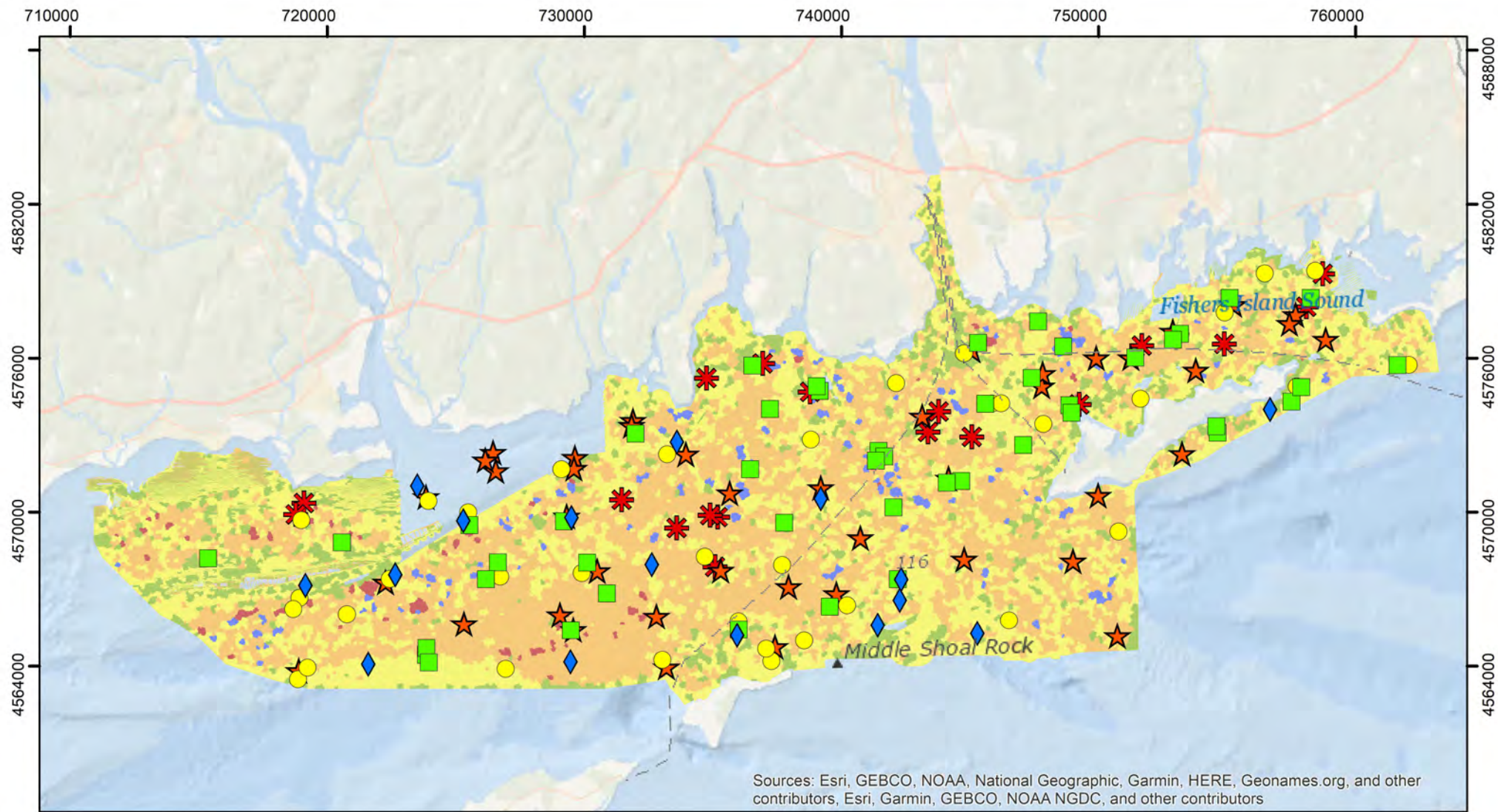


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983

0 1 2 4 6 8 Miles



LIS Cable Fund Mapping Phase 2: Infaunal Diversity (Log H)

Infaunal Diversity (Log H)

- ◆ 0.1 - 0.50
- 0.51 - 0.78
- 0.79 - 0.99
- ★ 1.00 - 1.19
- ✱ 1.20 - 1.40

eCognition Classification

- A - Sandy Silt
- B - Silty Sand
- C - Gravel/Sand
- D - Gravelly Sand
- E - Sandy Gravel

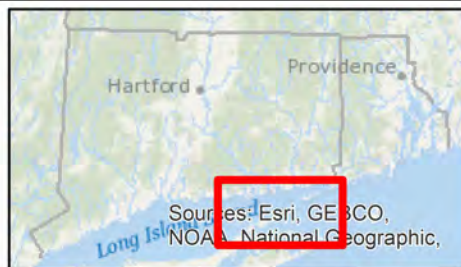
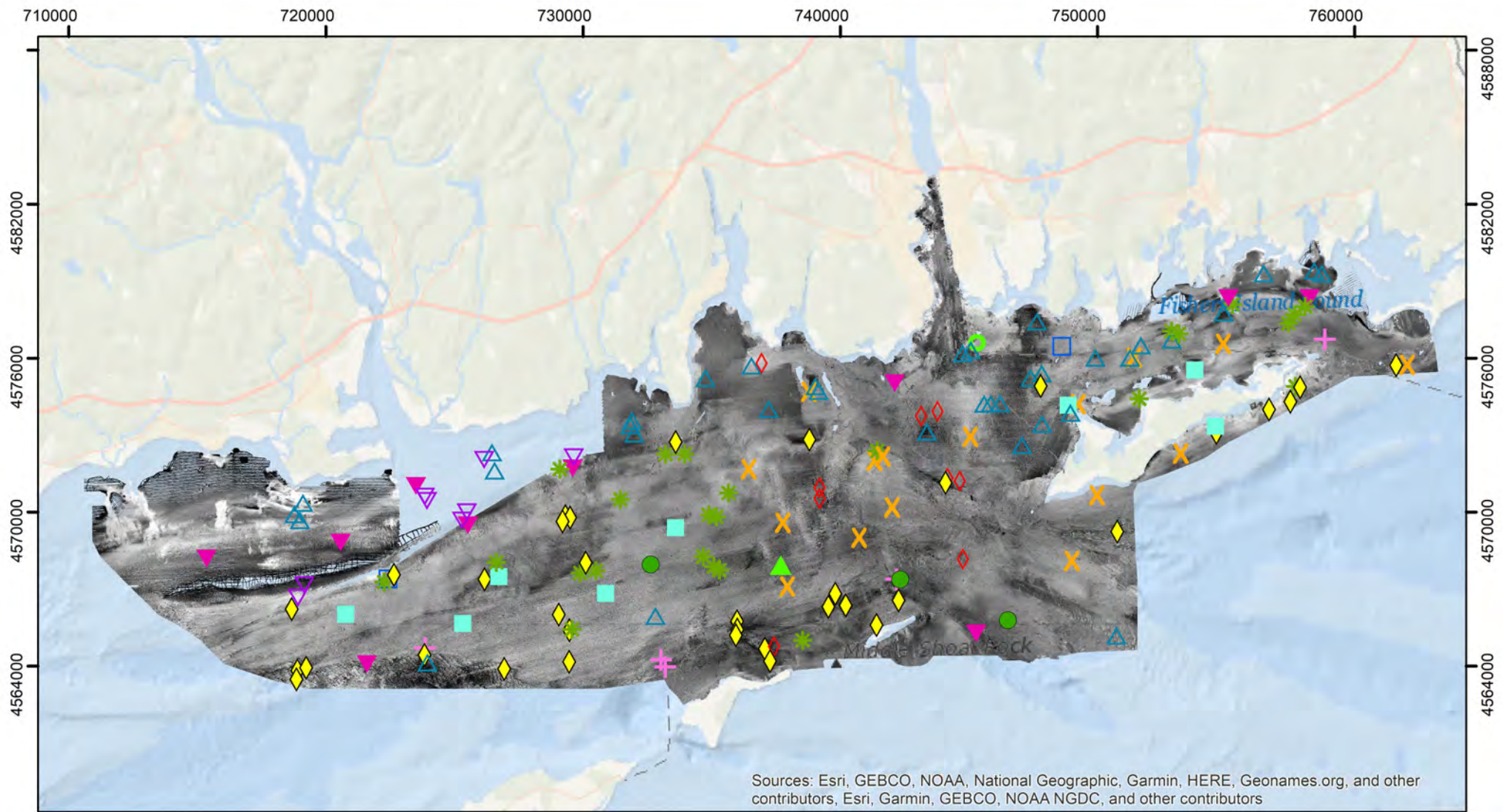


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983

0 1 2 4 6 8 Miles



LIS Cable Fund Mapping Phase 2: Infaunal Community Designation



Community Designation

- ▲ A
- B
- ◆ C
- ▽ D

- E
- F
- G
- ✚ H
- ◇ I
- ✕ J
- ✱ K
- △ L
- ▼ M

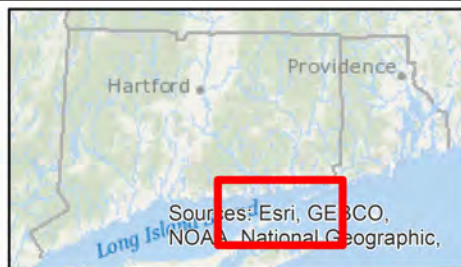
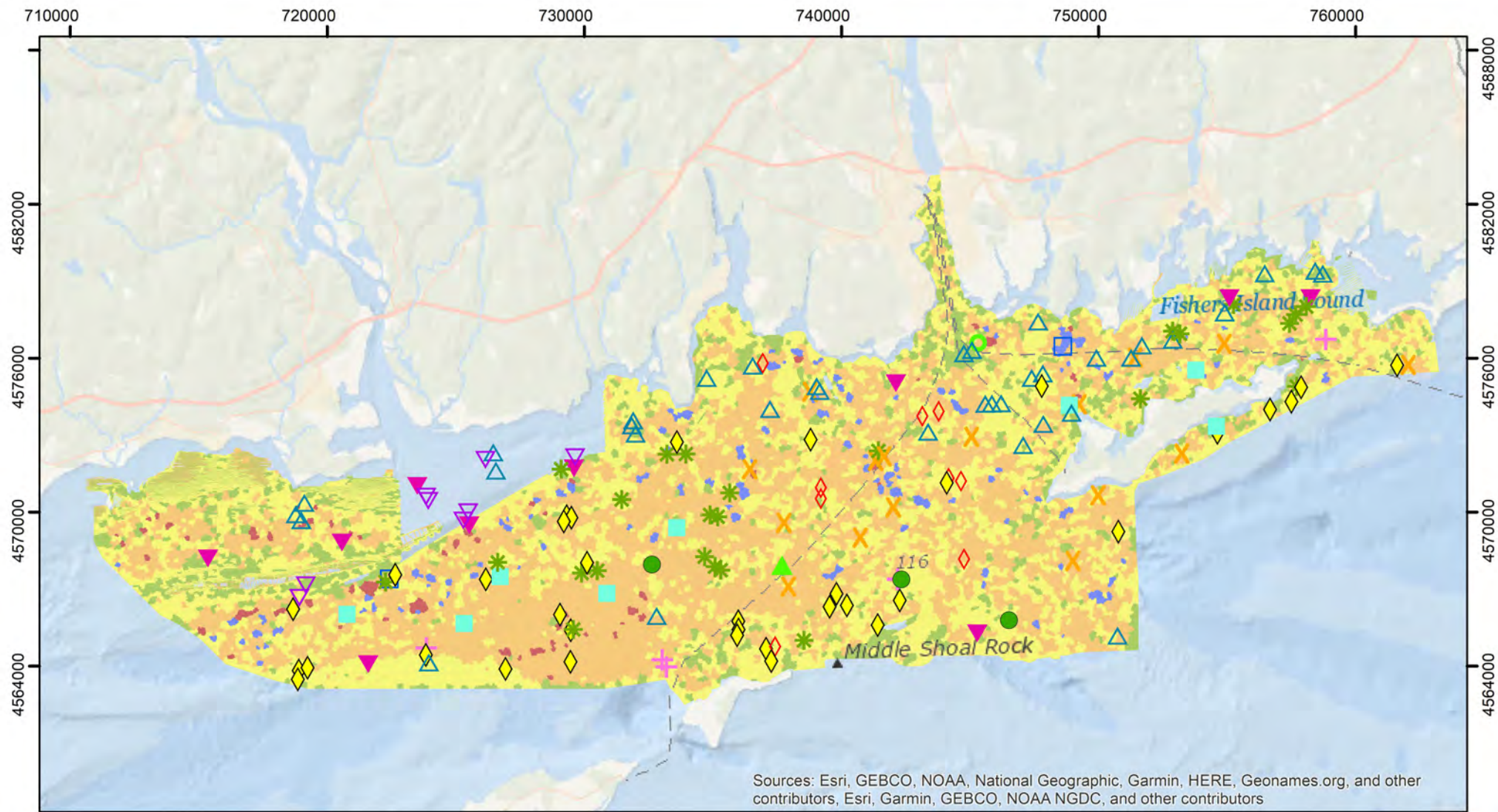


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983

0 1 2 4 6 8 Miles



LIS Cable Fund Mapping Phase 2: Infaunal Community Designation



Community Designation

- ▲ A
- B
- ◆ C
- ▽ D

- E
- F
- G
- ✦ H
- ◇ I
- ✕ J
- ✱ K
- △ L
- ▽ M

eCognition Classification

- A - Sandy Silt
- B - Silty Sand
- C - Gravel/Sand
- D - Gravelly Sand
- E - Sandy Gravel

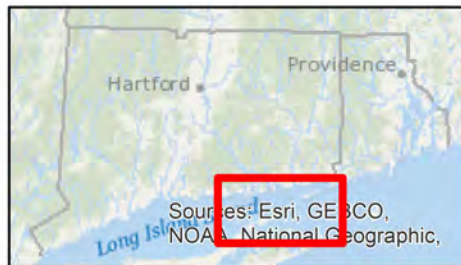
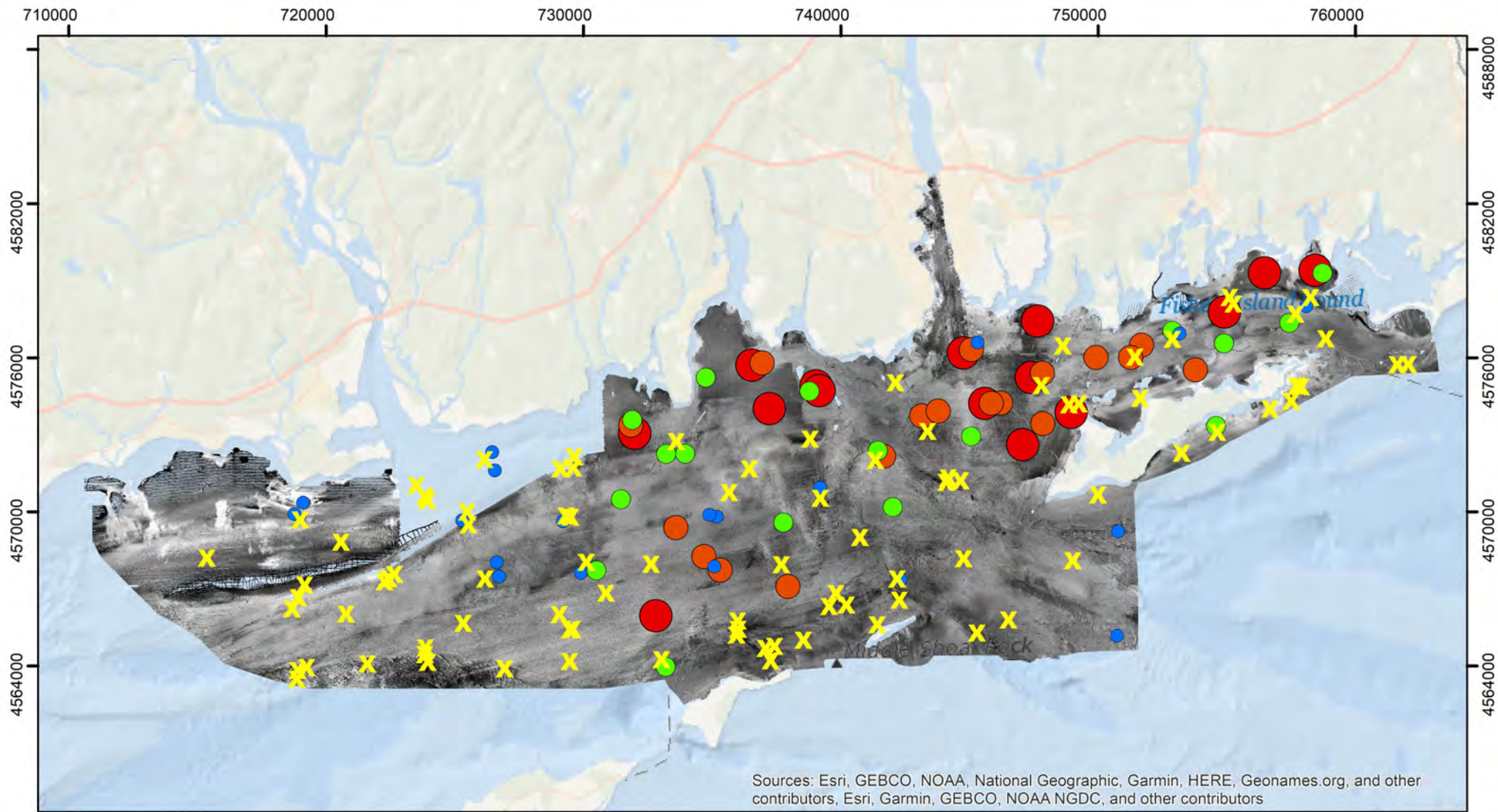


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983

0 1 2 4 6 8 Miles



LIS Cable Fund Mapping Phase 2: *Ampelisca vadorum* (Amphipod Crustacean)



Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

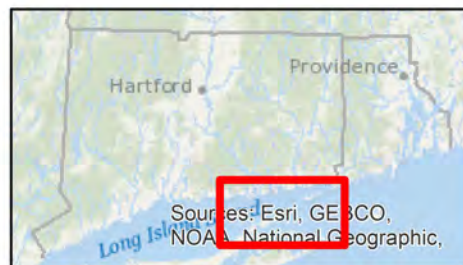
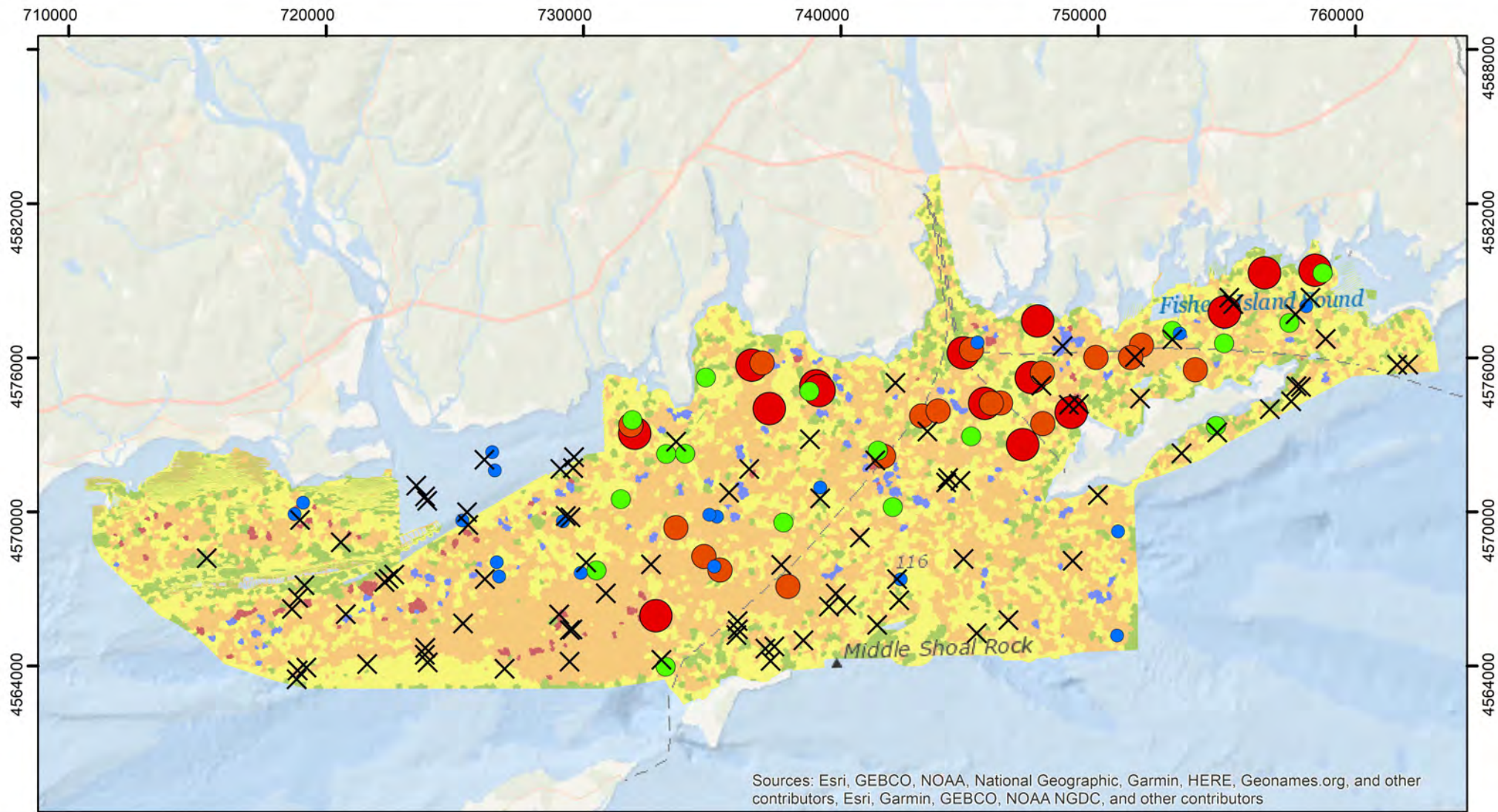


Ampelisca vadorum



Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: *Ampelisca vadorum* (Amphipod Crustacean)



Ampelisca vadorum



eCognition Classification

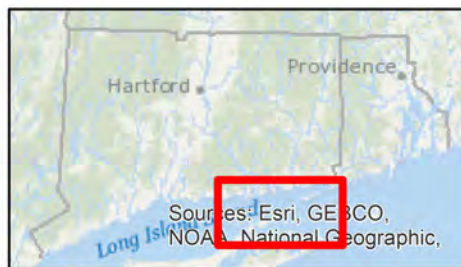
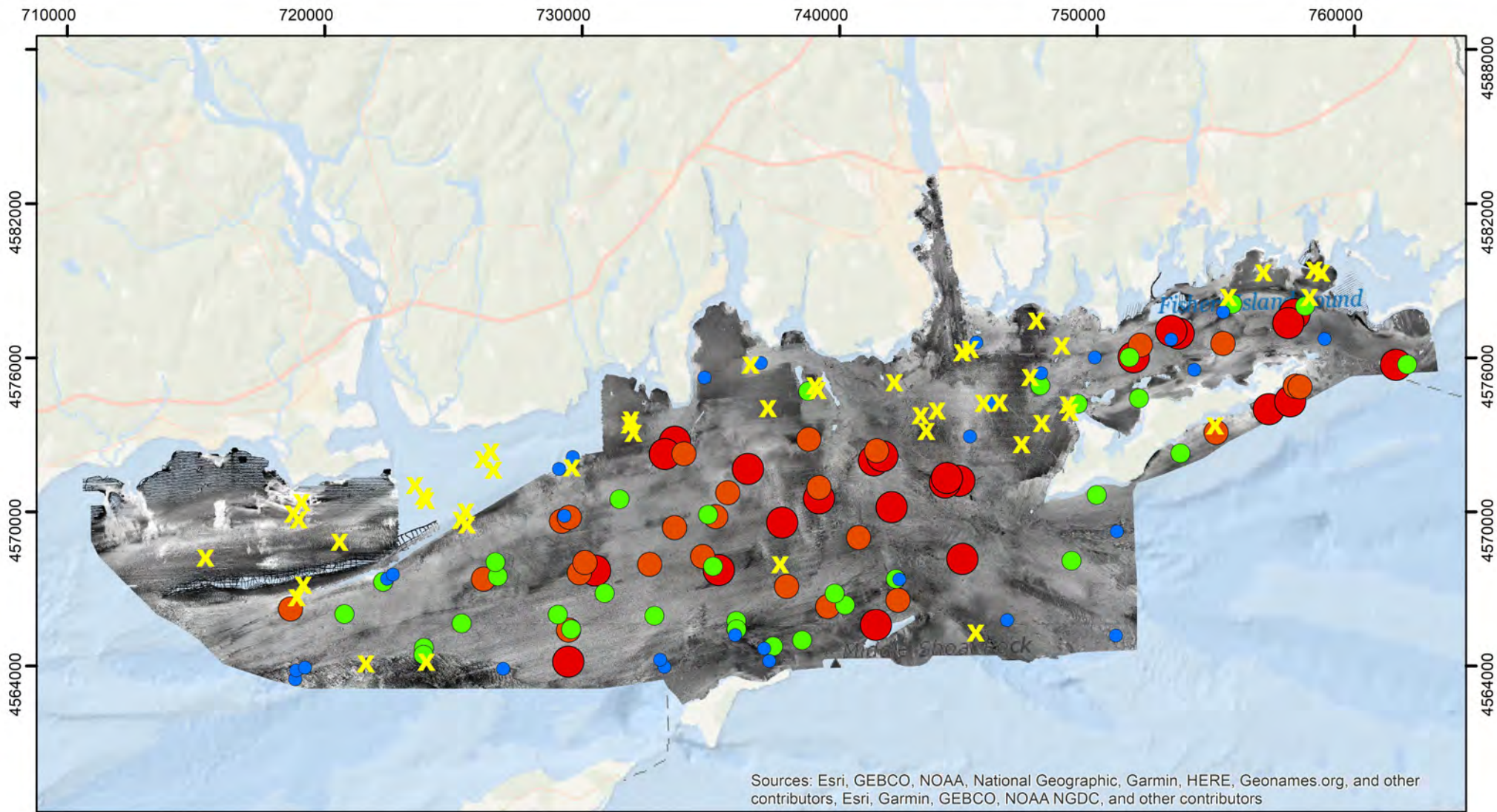


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: *Astarte* spp (Bivalve Mollusc)



Astarte spp.

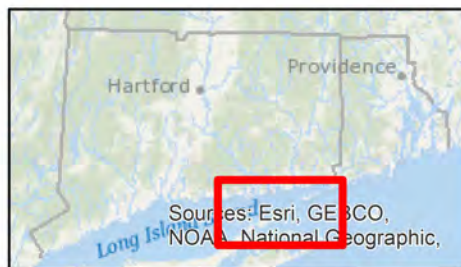
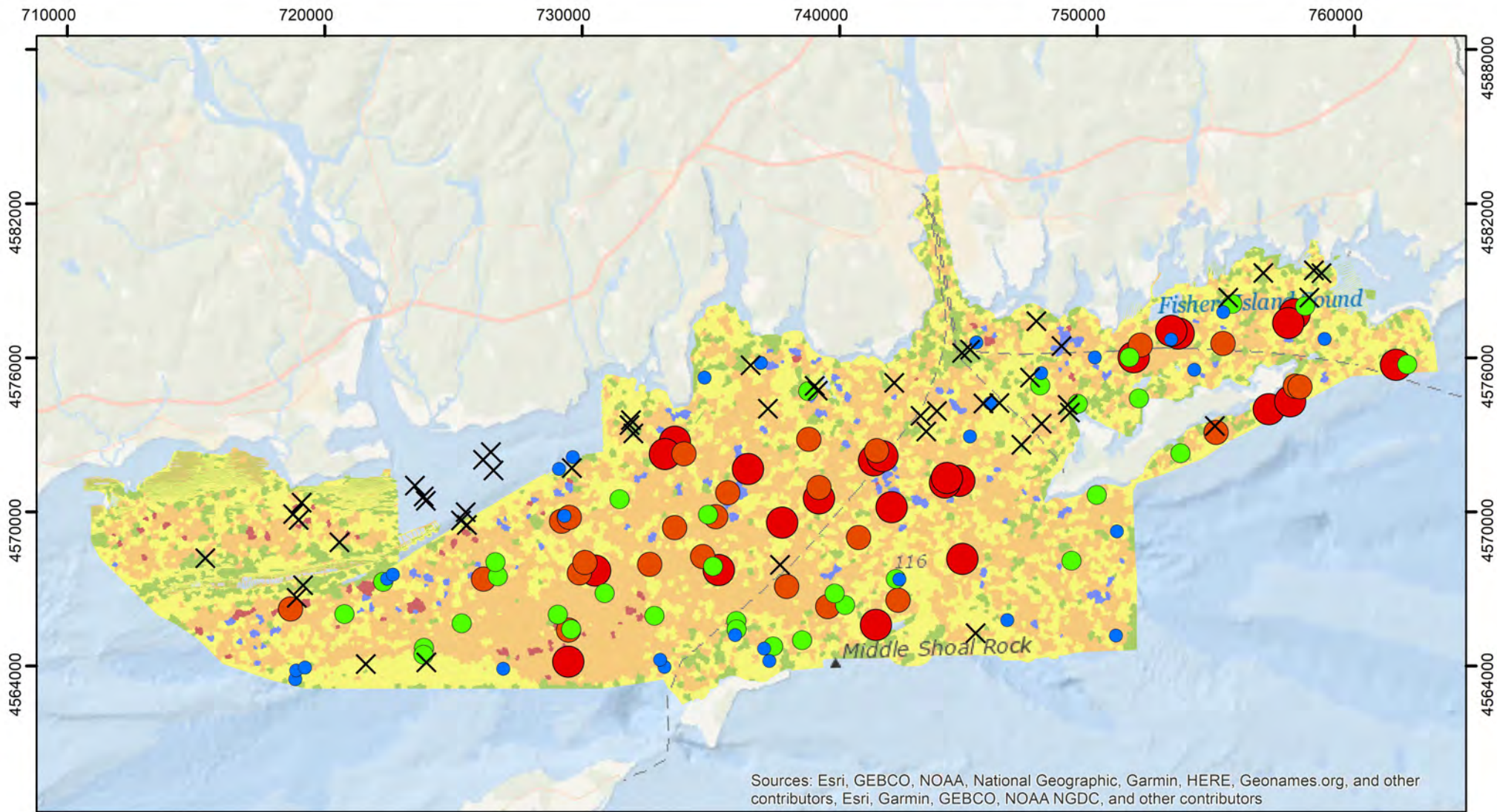


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: *Astarte* spp (Bivalve Mollusc)



Astarte spp.



eCognition Classification

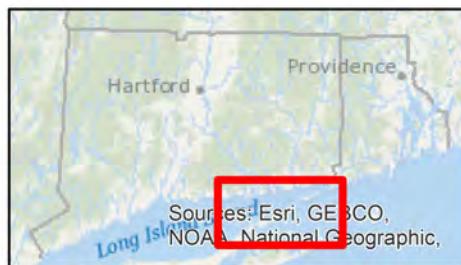
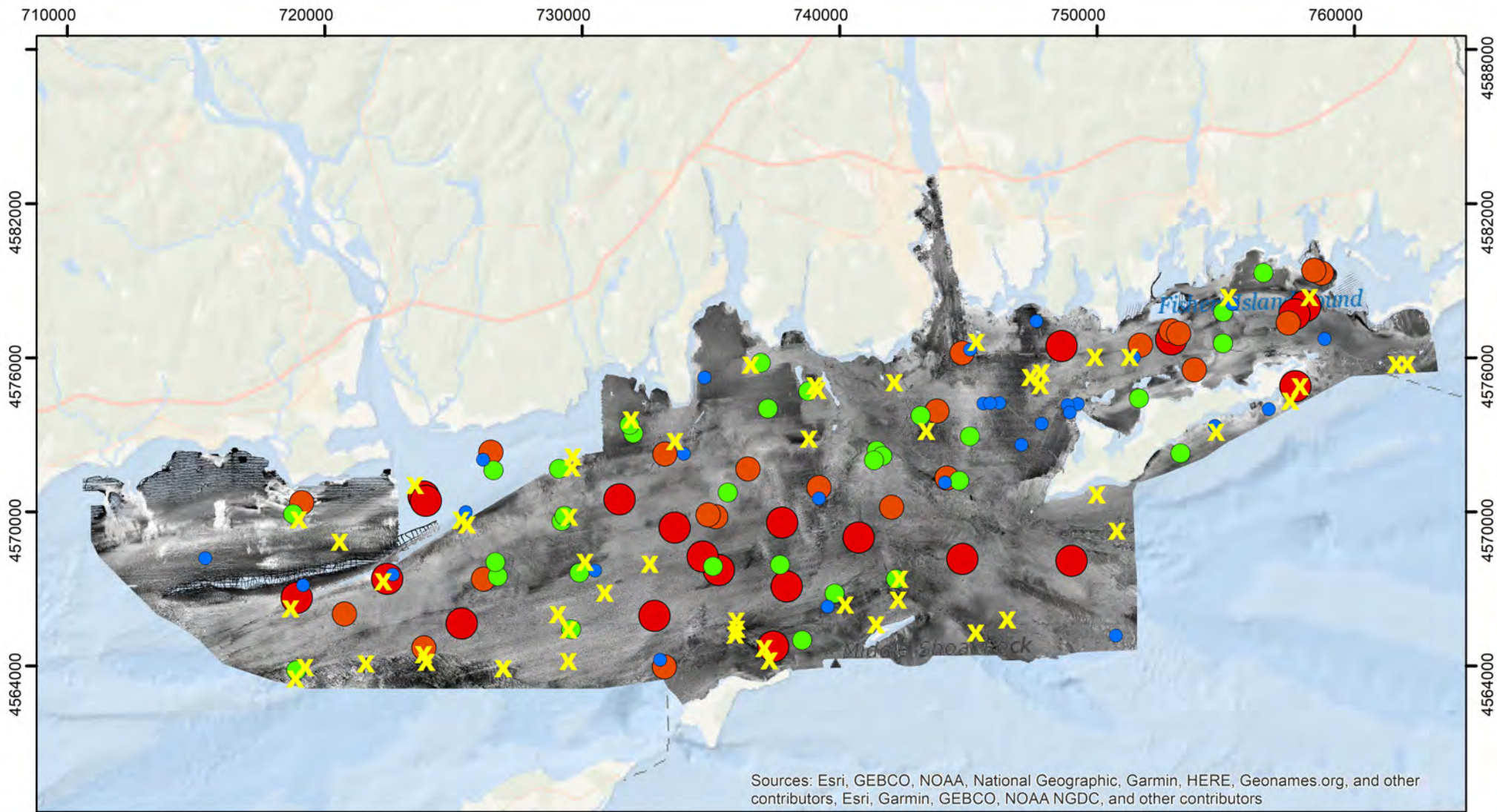


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: *Corophium* spp. (Amphipod Crustacean)



Corophium spp.

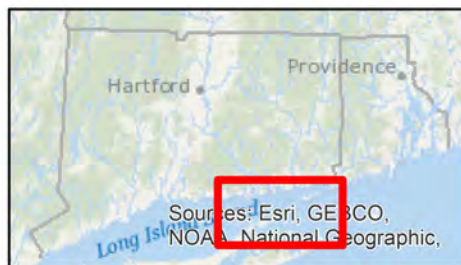
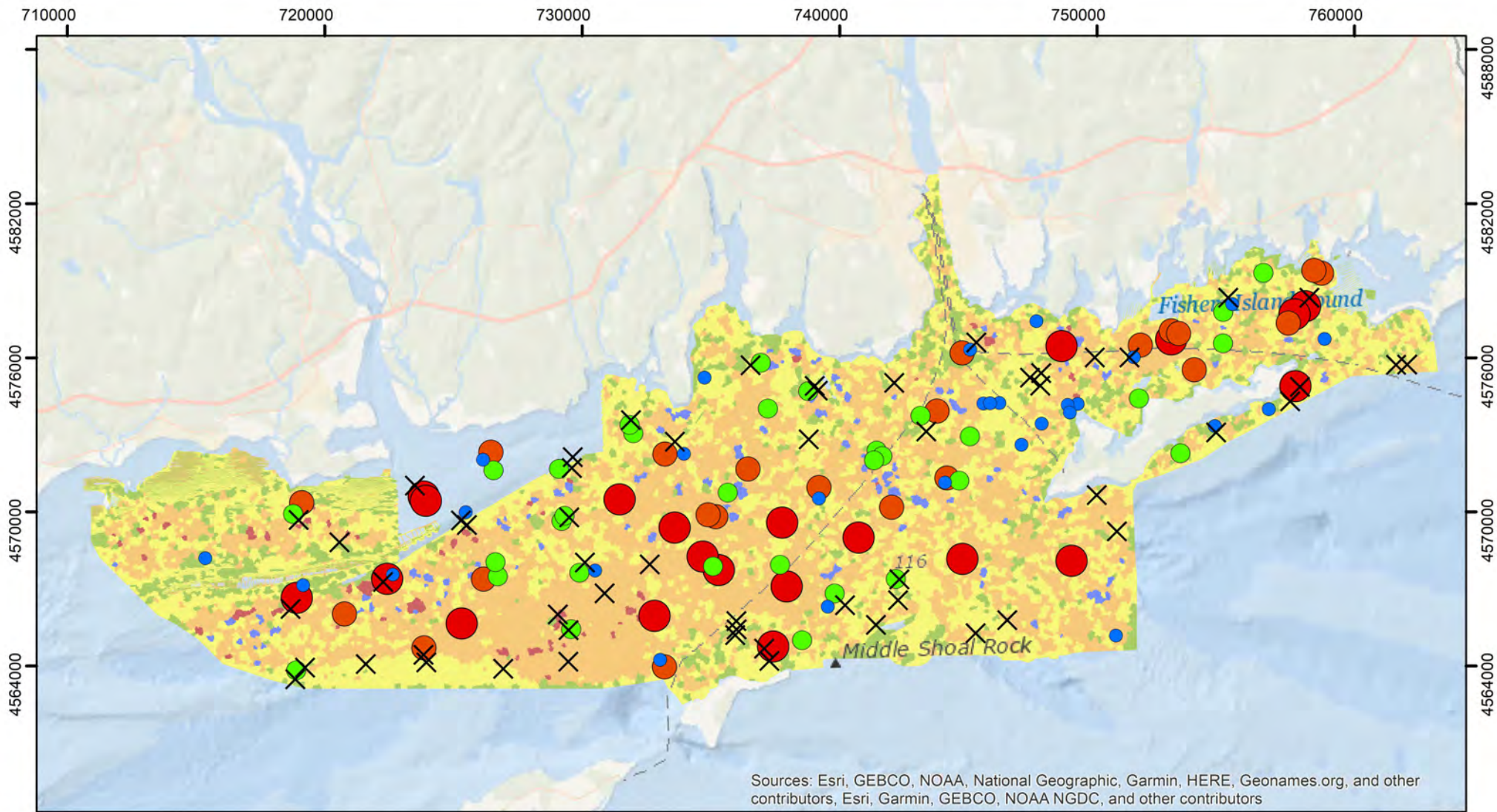


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: *Corophium* spp. (Amphipod Crustacean)



Corophium spp.



eCognition Classification

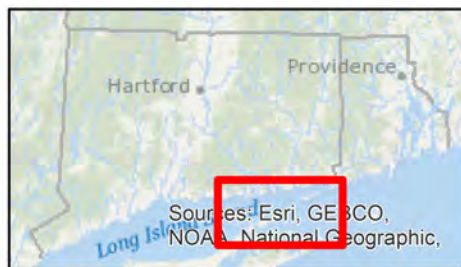
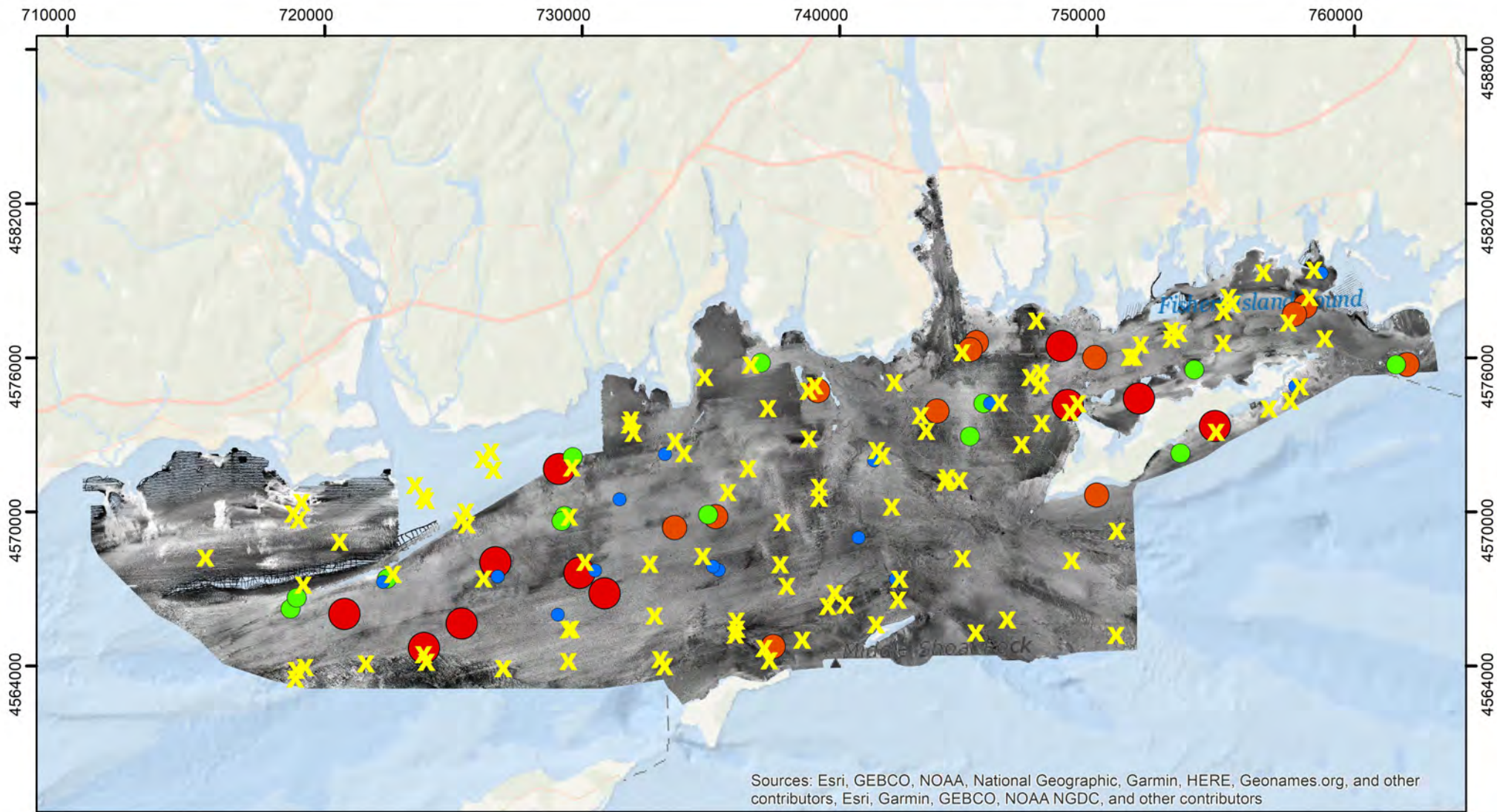


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: *Crepidula fornicata* (Slipper Shell Mollusc)



Crepidula fornicata

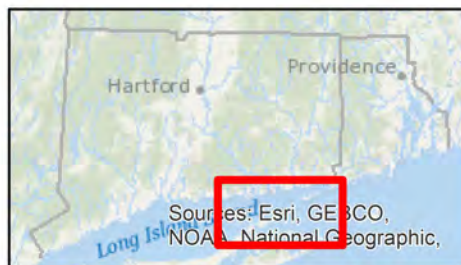
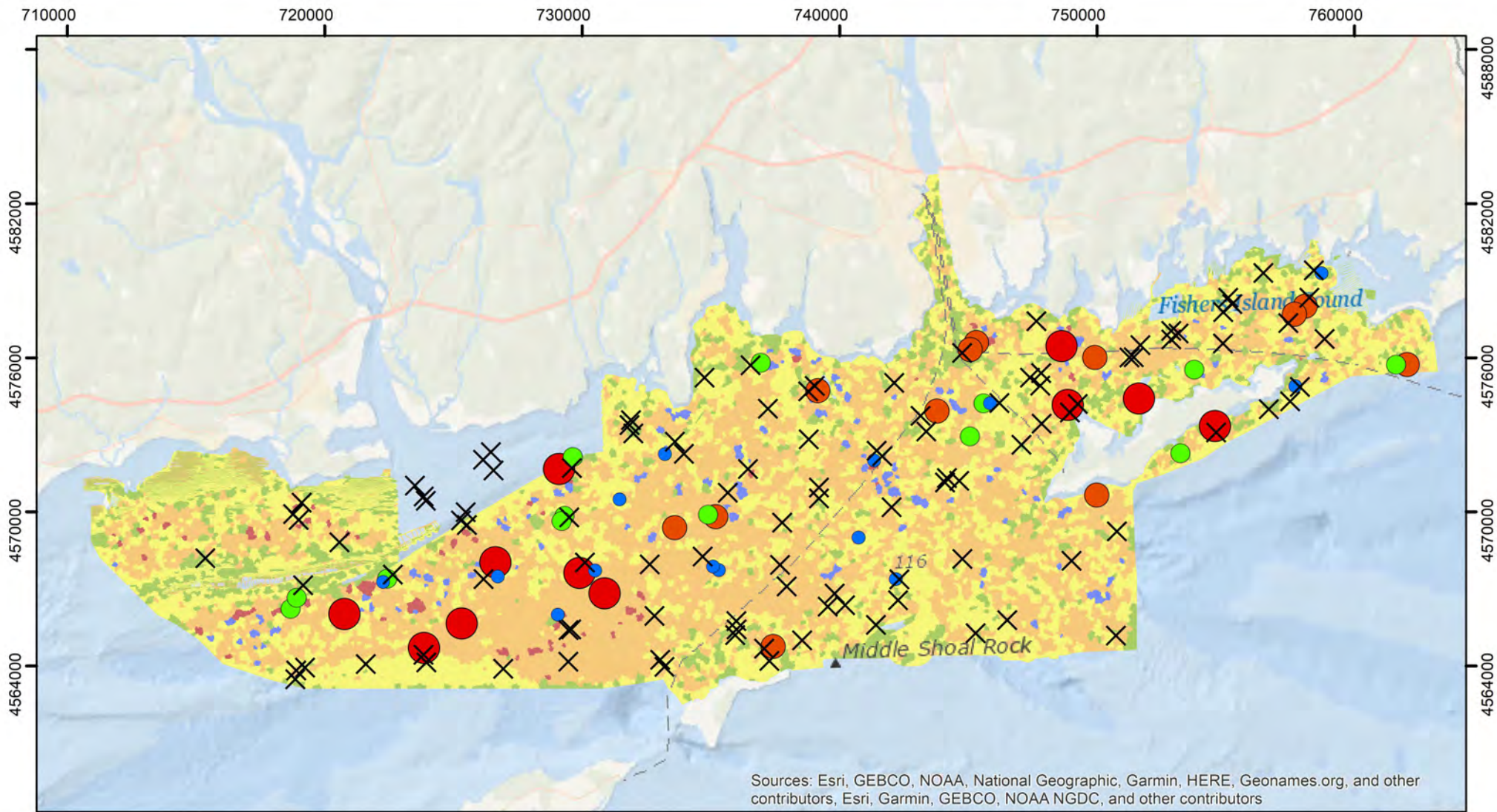


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: *Crepidula fornicata* (Slipper Shell Mollusc)



Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>



Crepidula fornicata

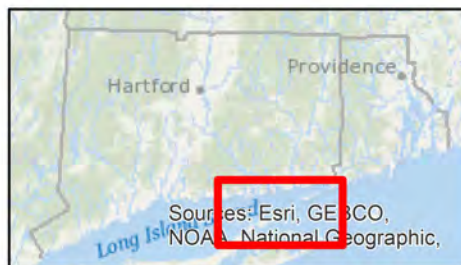
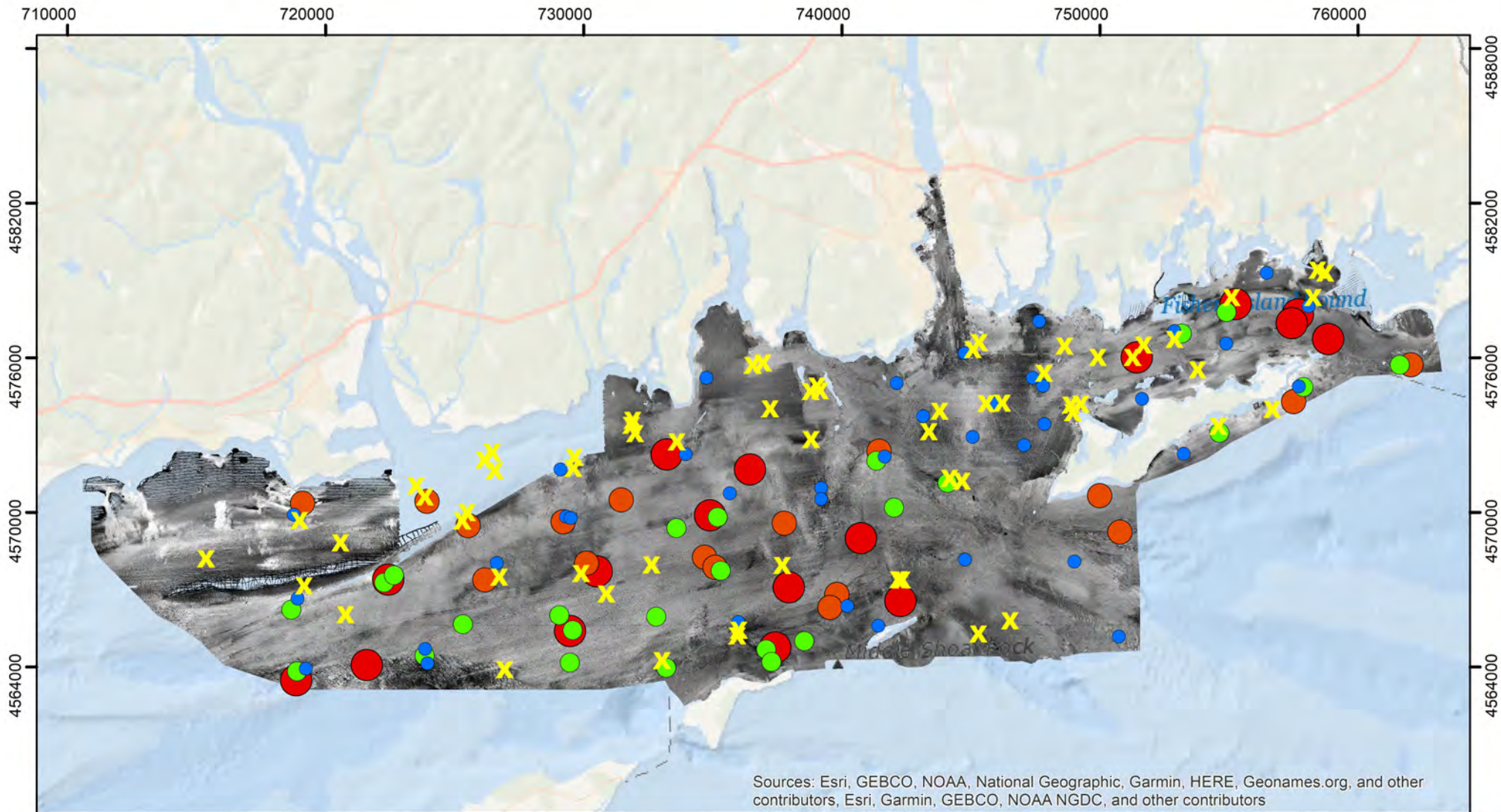


eCognition Classification



Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: *Glycera capitata* (Polychaete Annelid)



Glycera capitata

- X 0
- 1 - 2
- 3 - 5
- 6 - 8
- 9 - 20

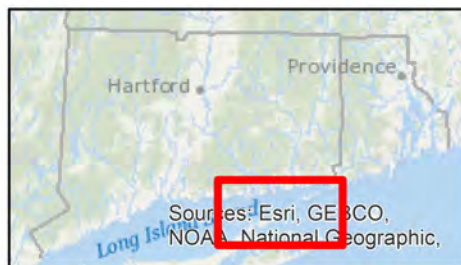
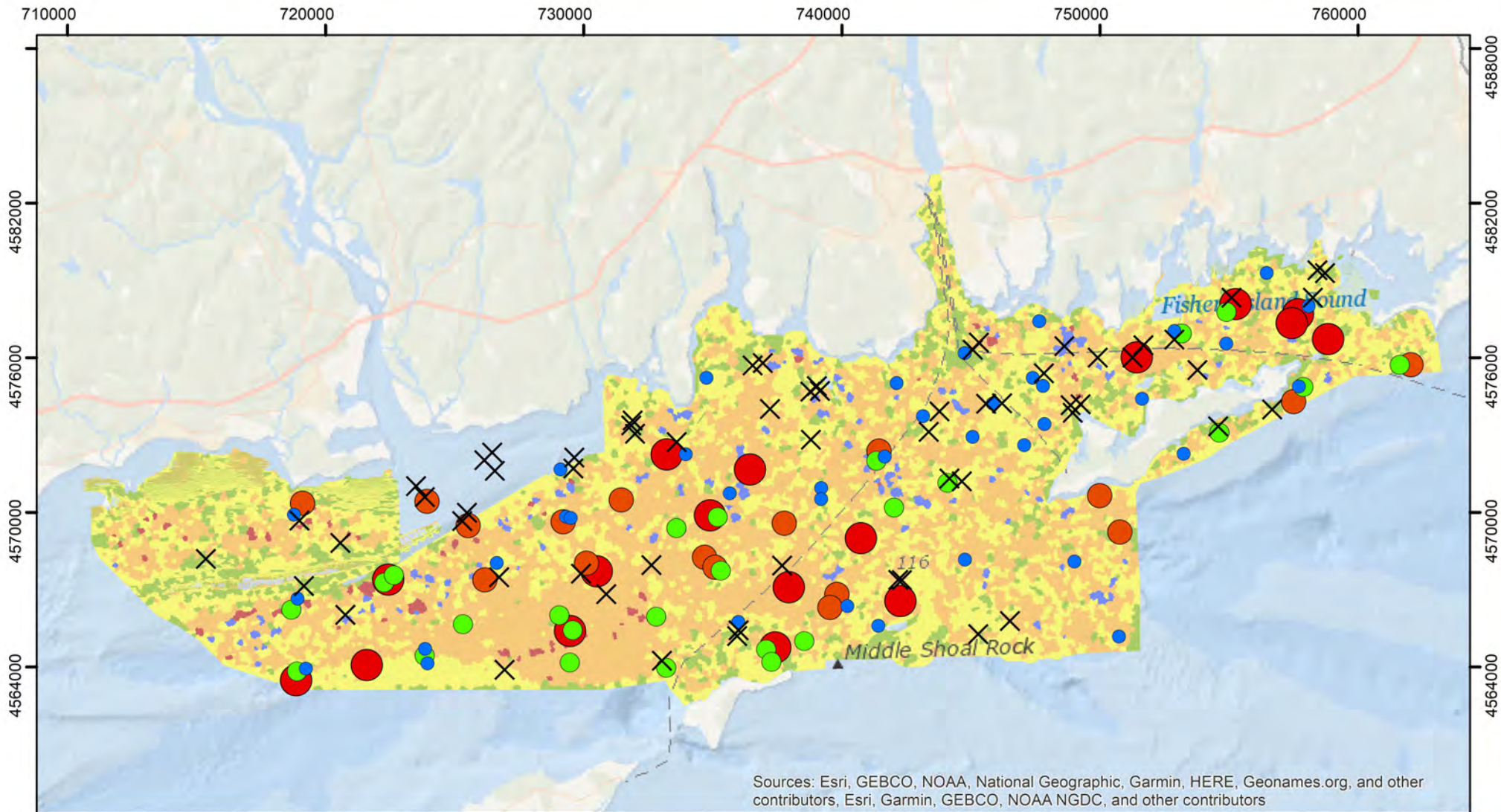


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: *Glycera capitata* (Polychaete Annelid)



Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>



Glycera capitata

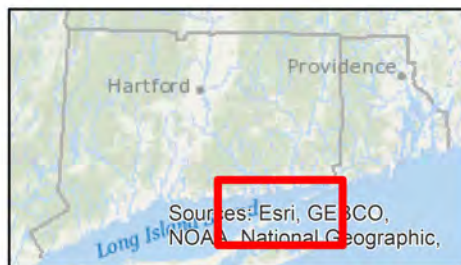
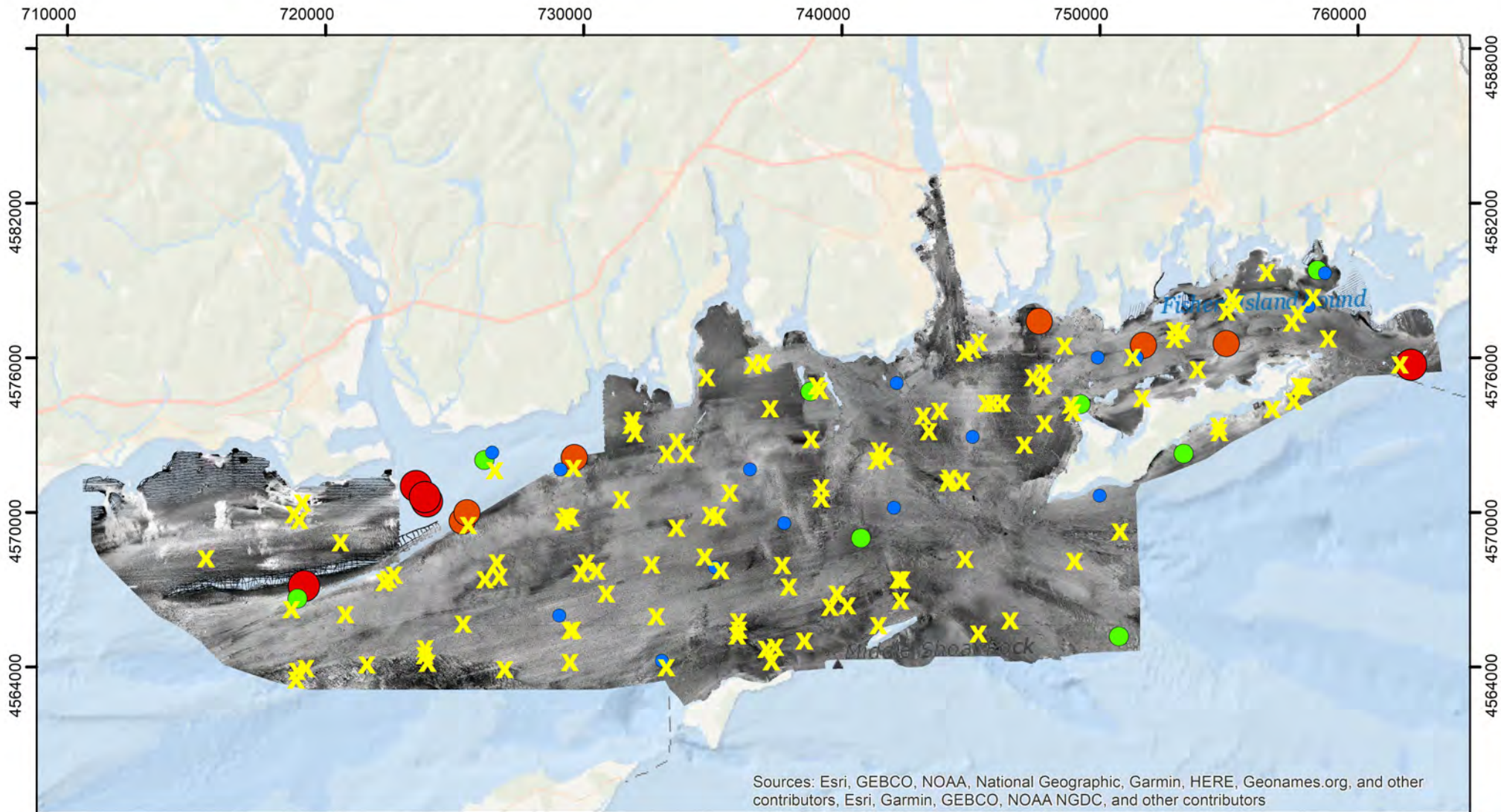


eCognition Classification



Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: *Marenzelleria Viridis* (Polychaete Annelid)



Marenzelleria viridis

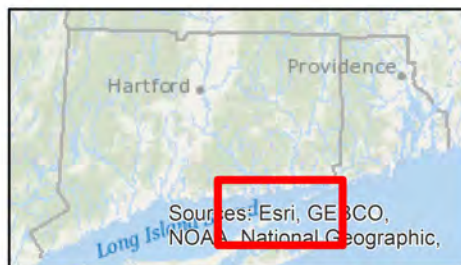
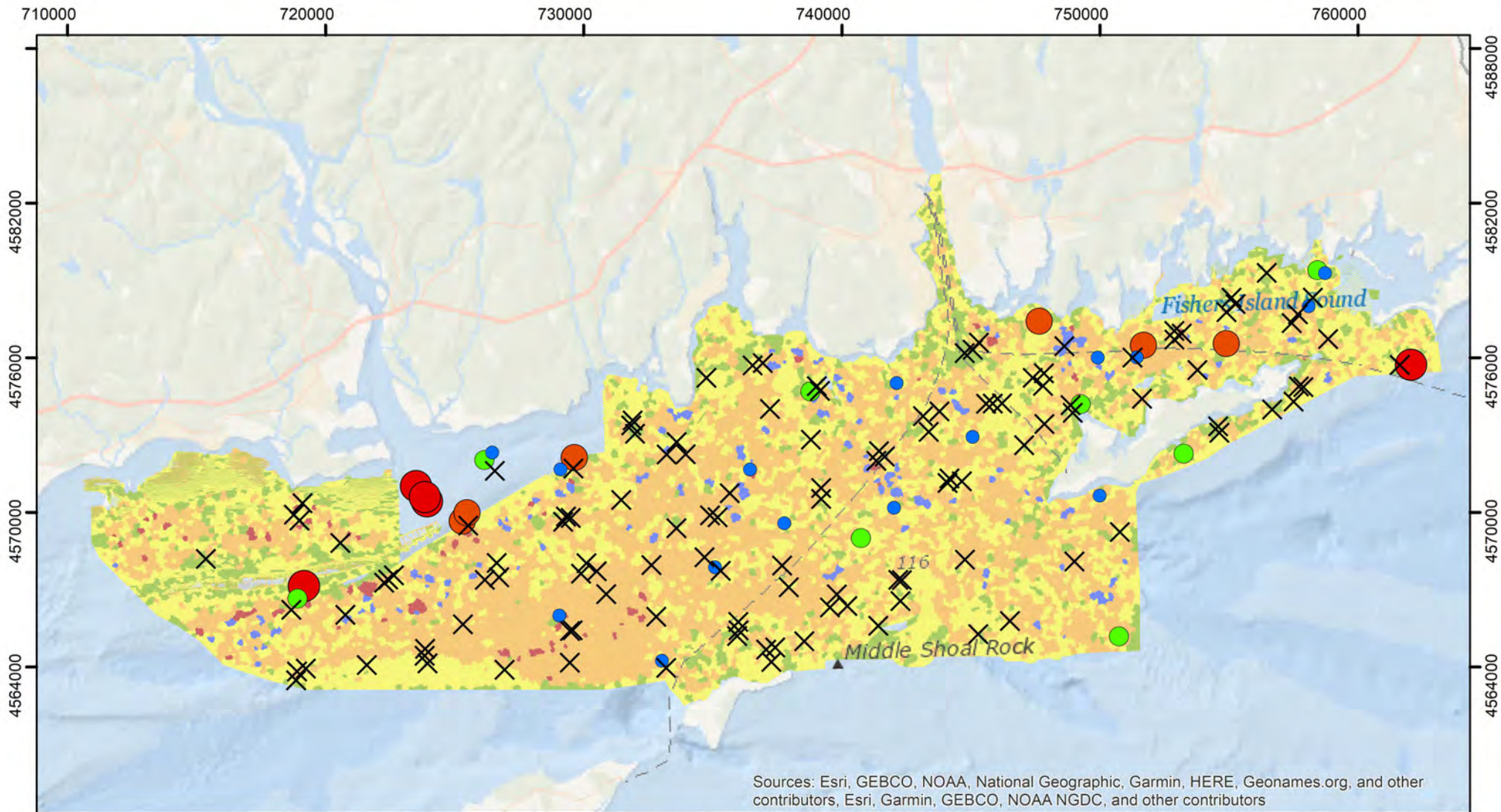


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: *Marenzelleria Viridis* (Polychaete Annelid)



Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>



Marenzelleria viridis

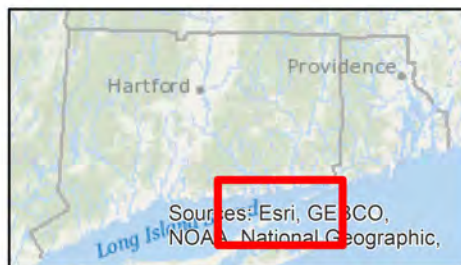
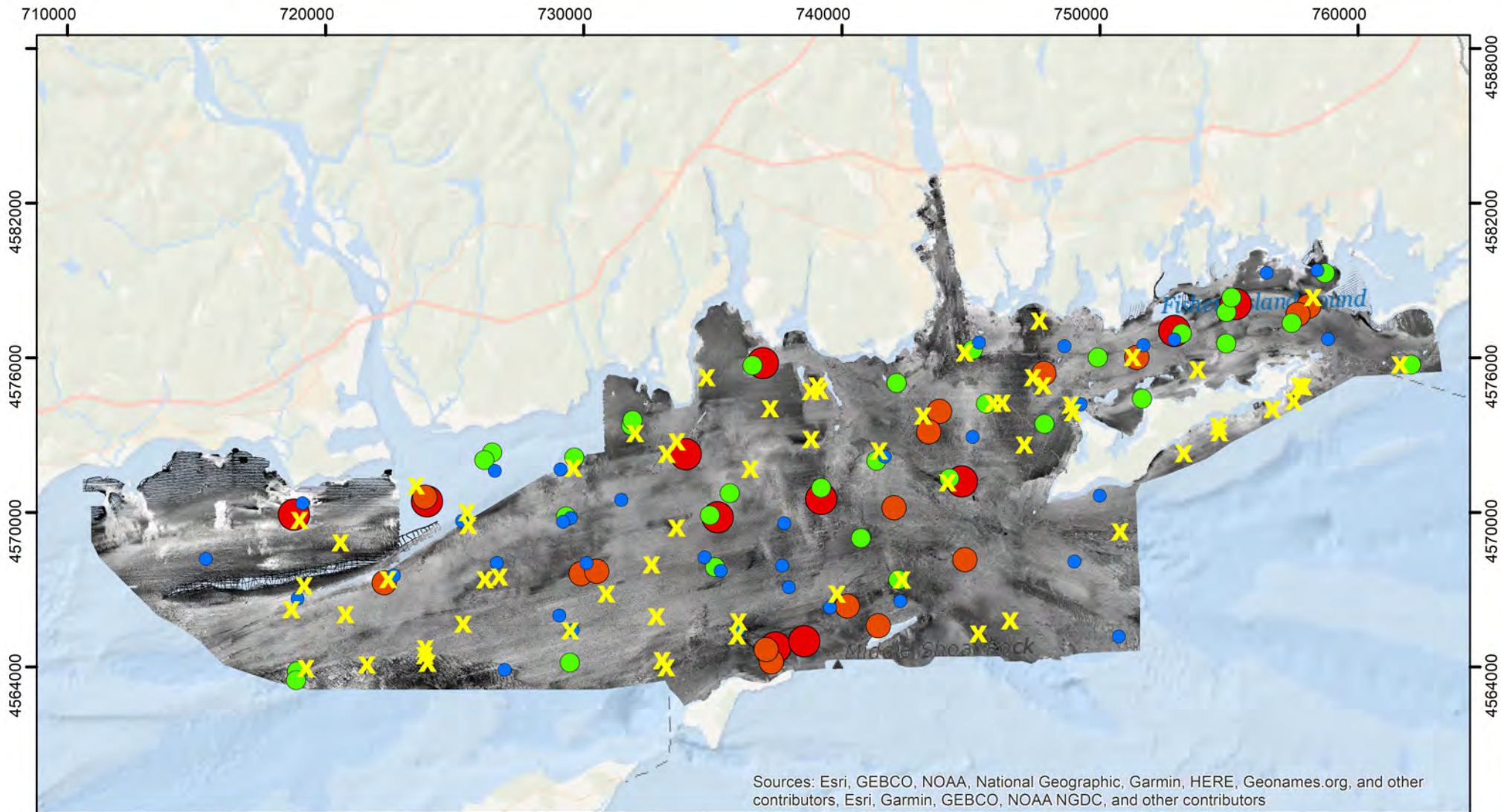


eCognition Classification



Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: *Mediomastus ambiseta* (Polychaete Annelid)



Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

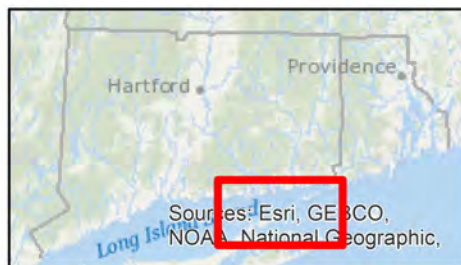
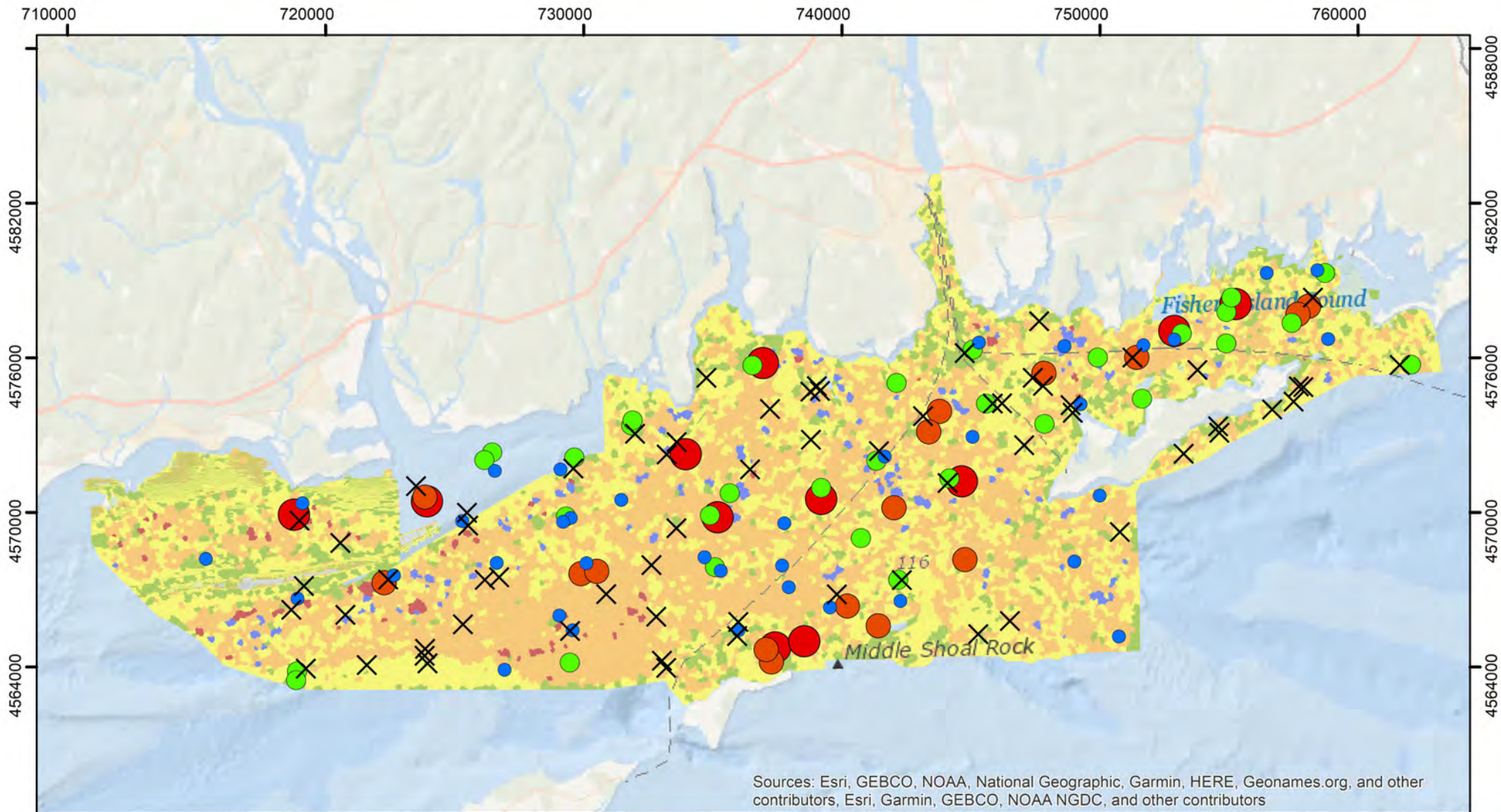
<https://lismap.uconn.edu/>

Mediomastus ambiseta



Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: *Mediomastus ambiseta* (Polychaete Annelid)



Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>



Mediomastus ambiseta

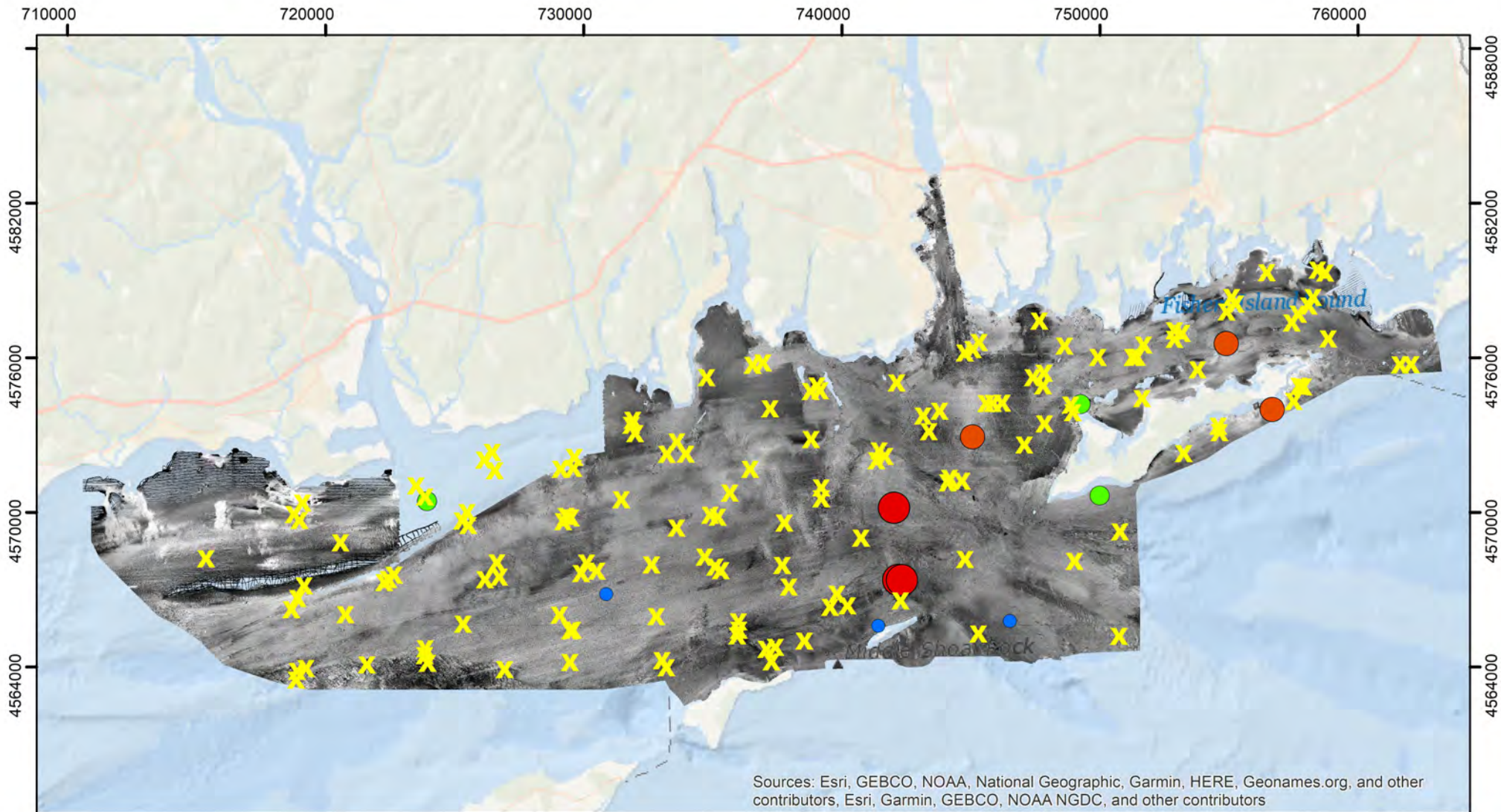


eCognition Classification



Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: *Polycirrus medusa* (Polychaete Annelid)



Polycirrus medusa

- X 0
- 1 - 2
- 3 - 14
- 15 - 38
- 39 - 142

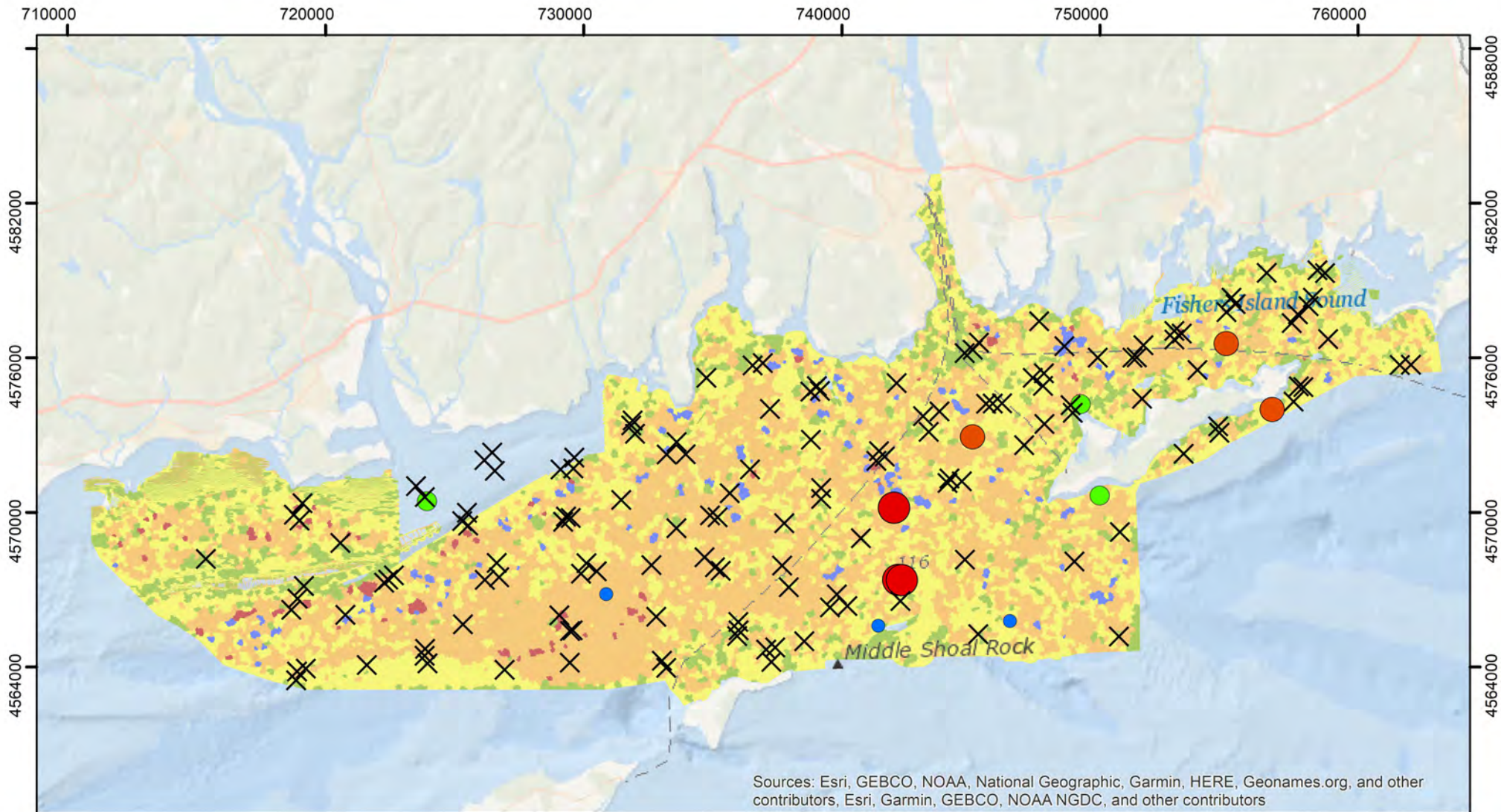


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: *Polycirrus medusa* (Polychaete Annelid)



Polycirrus medusa



eCognition Classification

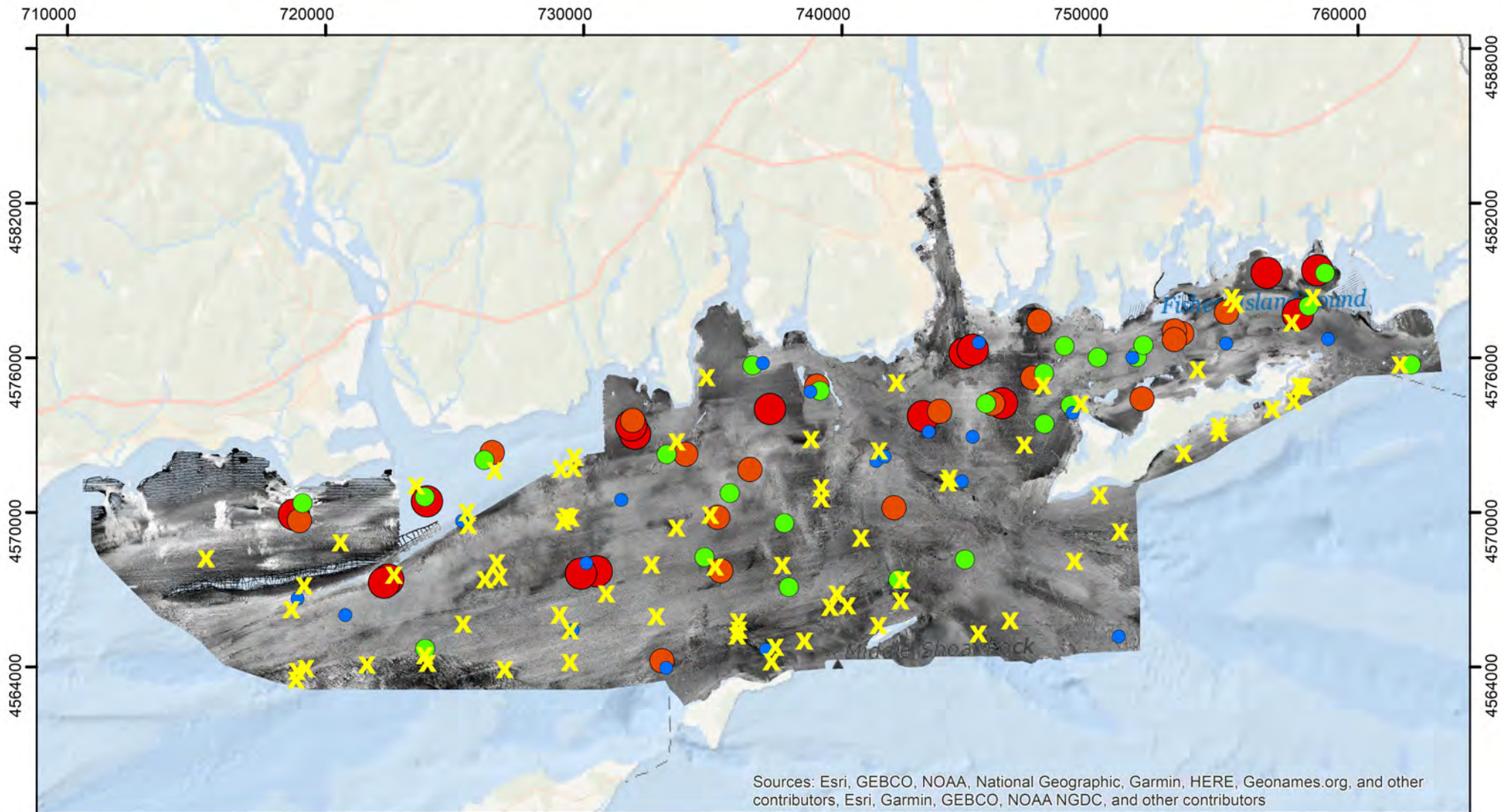


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: *Praxillella praetermissa* (Polychaete Annelid)

Praxillella praetermissa

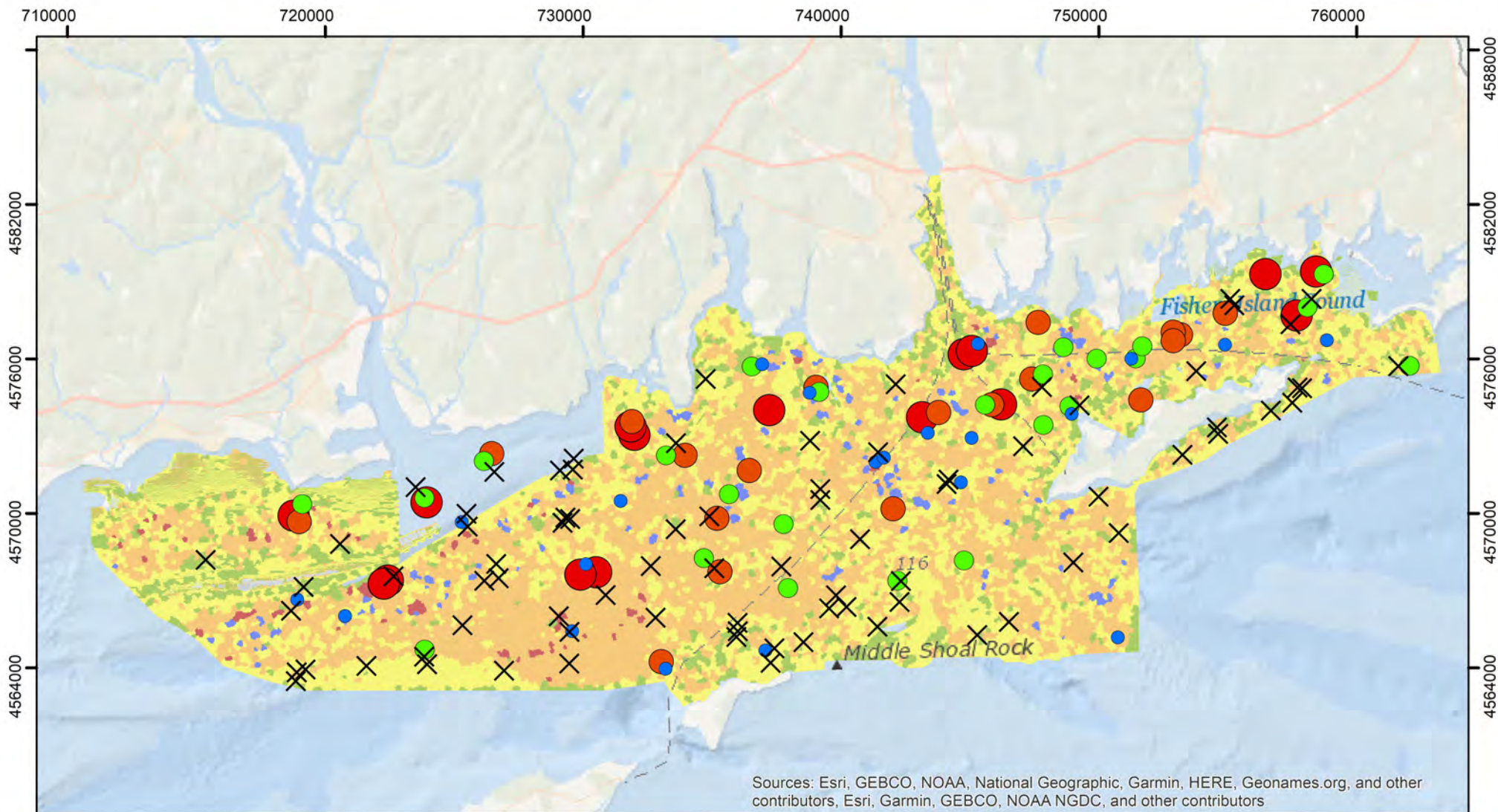


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: *Praxillella praeterrissa* (Polychaete Annelid)



Praxillella praeterrissa



eCognition Classification

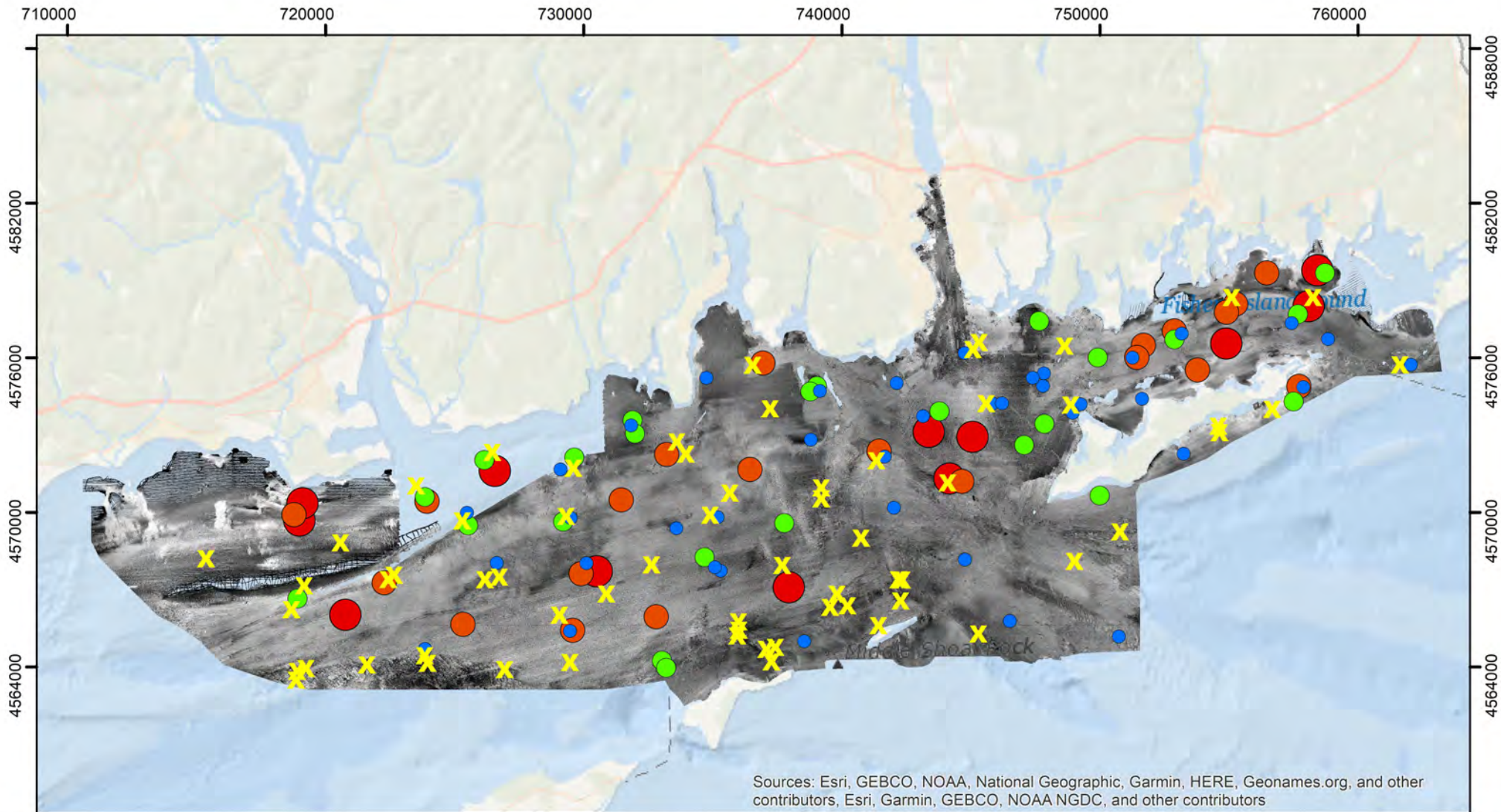


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: *Spiophanes bombyx* (Polychaete Annelid)



Spiophanes bombyx

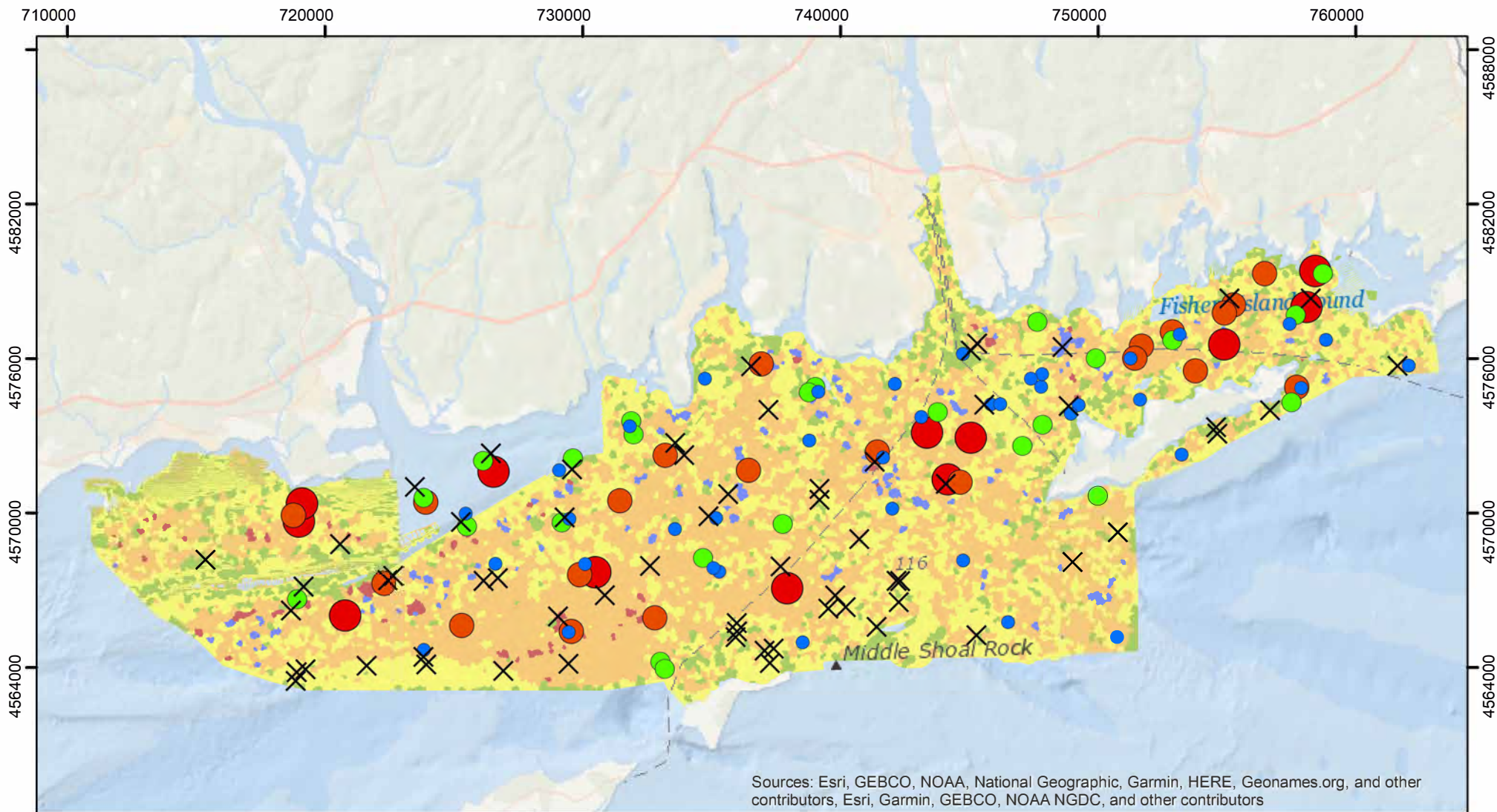


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983





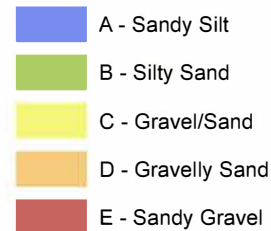
LIS Cable Fund Mapping Phase 2: *Spiophanes bombyx* (Polychaete Annelid)



Spiophanes bombyx



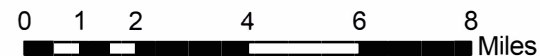
eCognition Classification

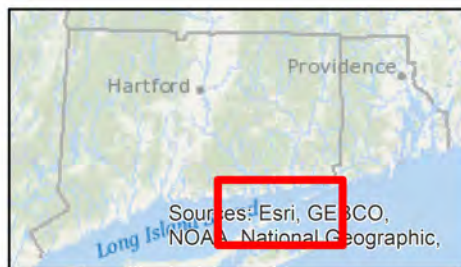
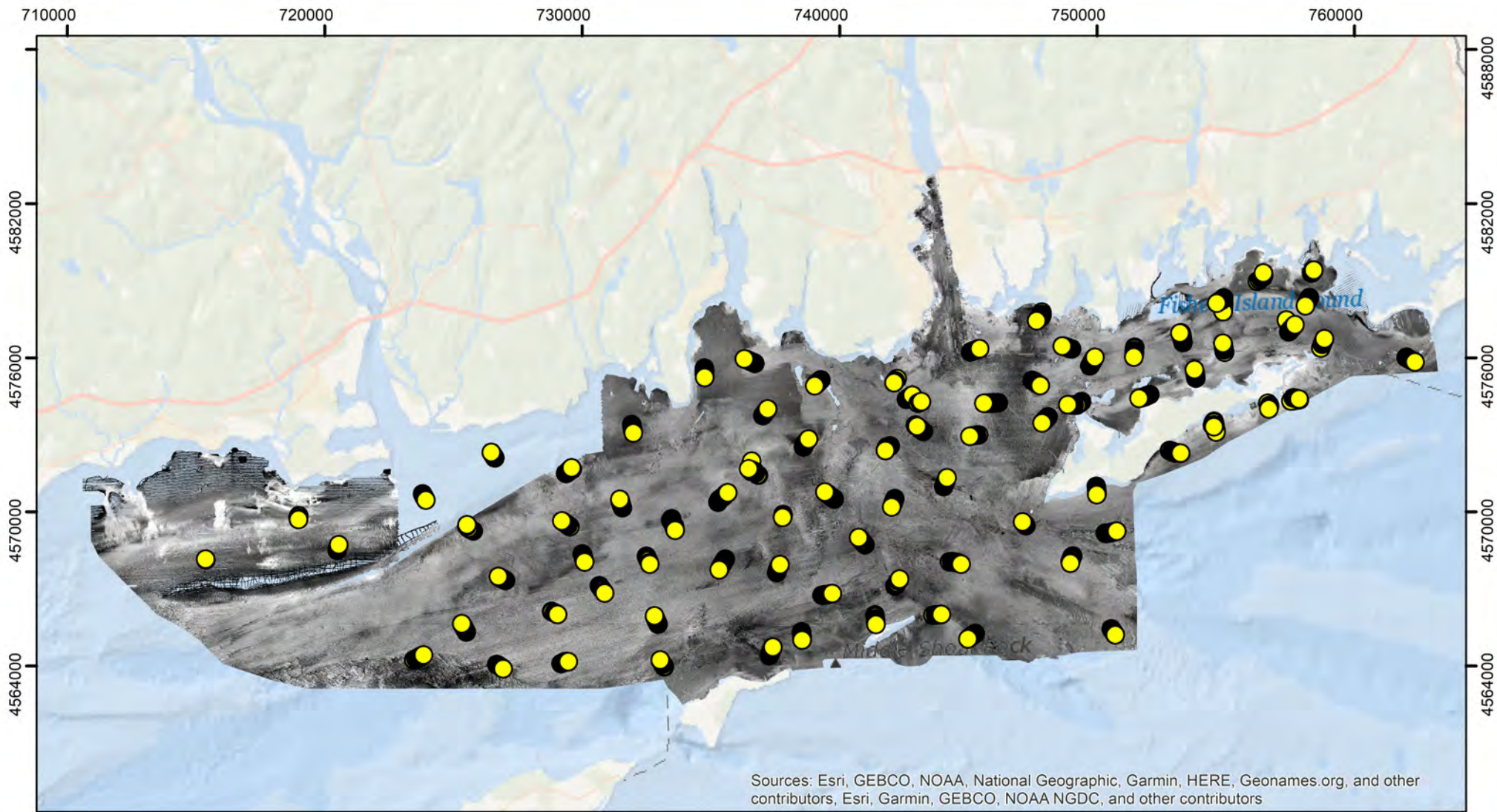


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: SEABOSS Transect Sites

● SEABOSS Sites

Multibeam Backscatter

High : 241

Low : 1

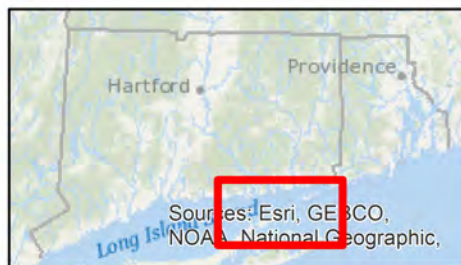
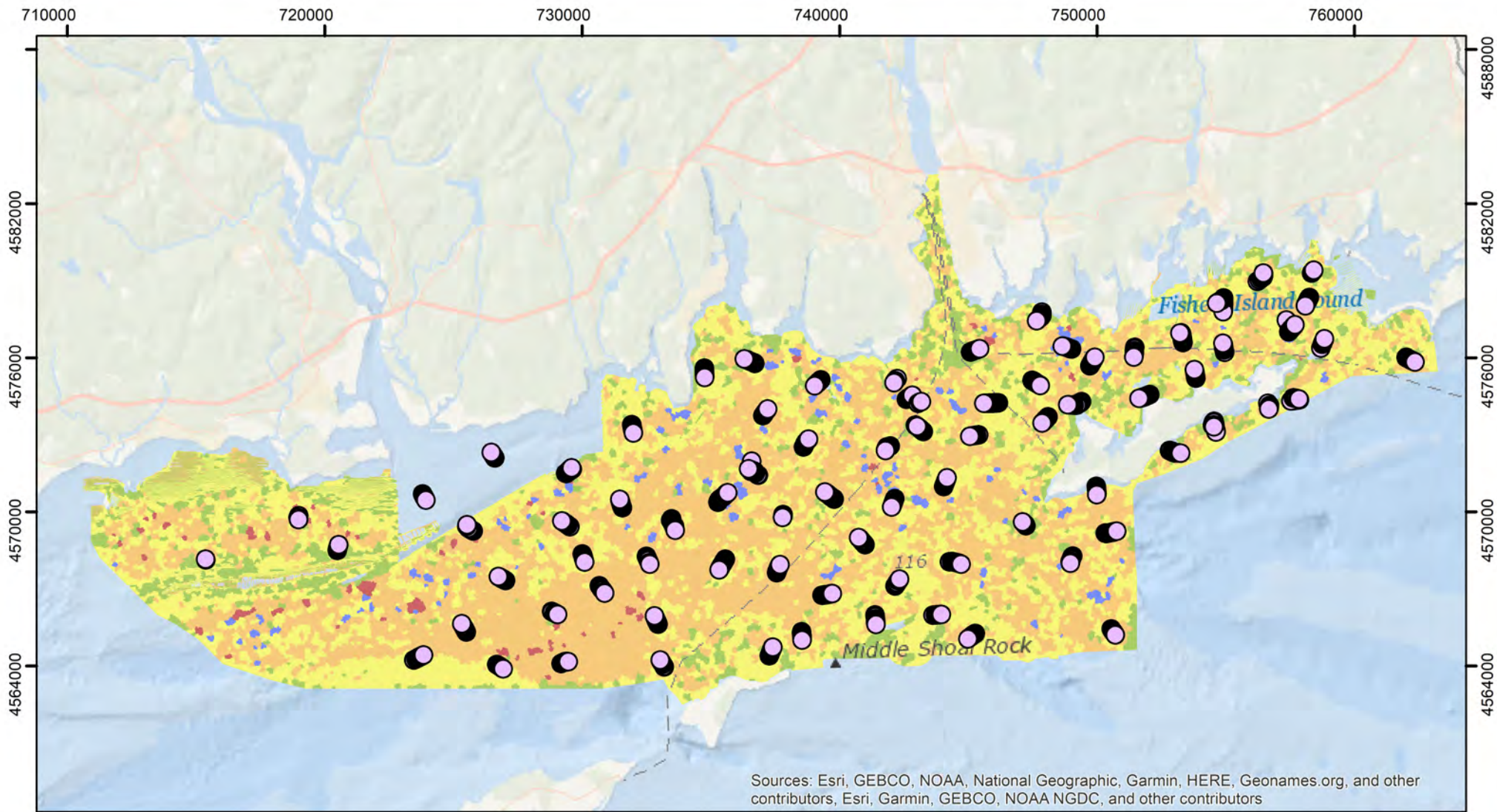


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983

0 1 2 4 6 8 Miles



LIS Cable Fund Mapping Phase 2: SEABOSS Transect Sites

● SEABOSS Sites

eCognition Classification

- A - Sandy Silt
- B - Silty Sand
- C - Gravel/Sand
- D - Gravelly Sand
- E - Sandy Gravel

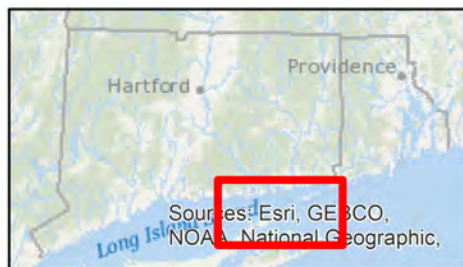
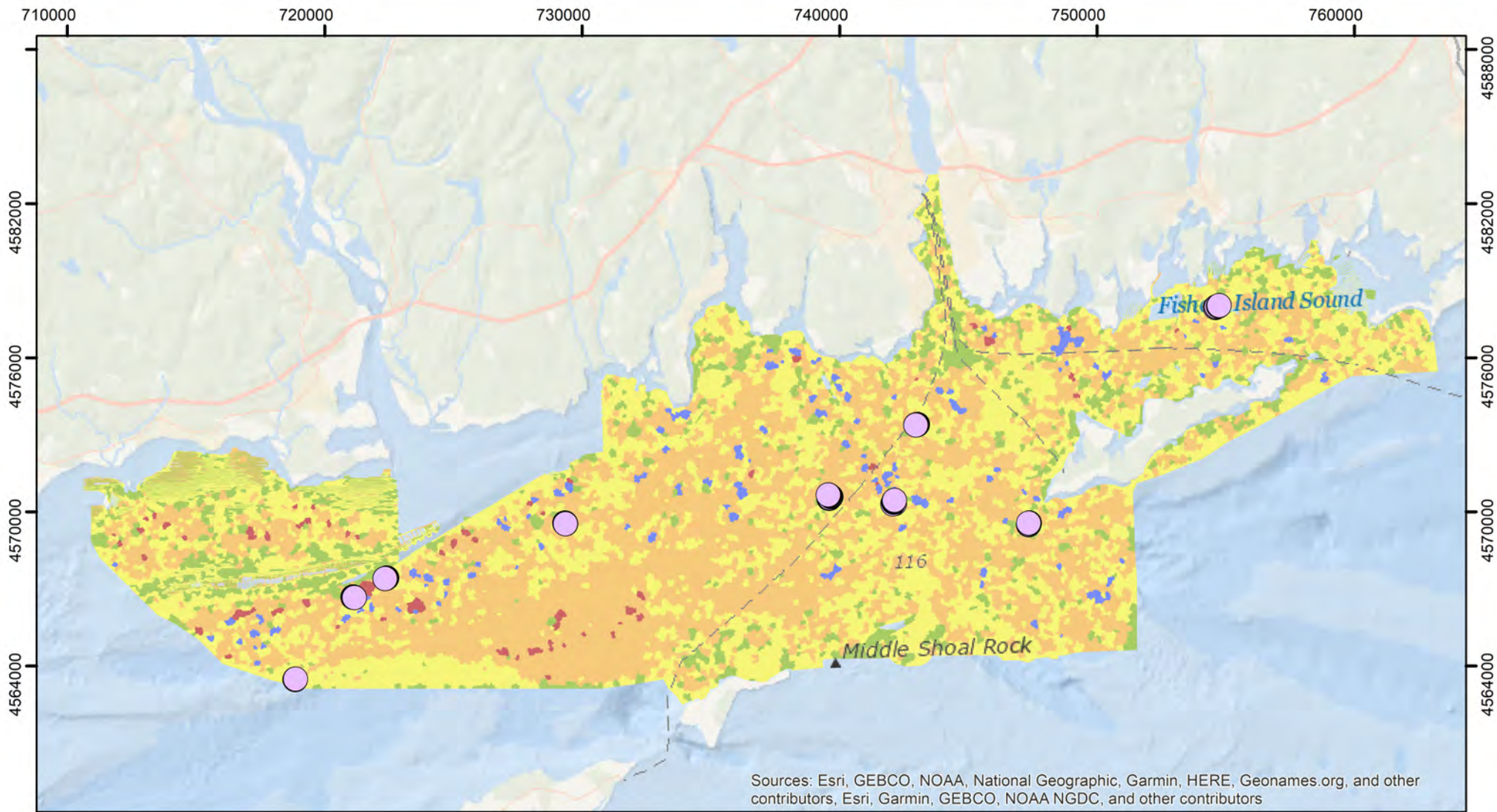


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983

0 1 2 4 6 8 Miles



LIS Cable Fund Mapping Phase 2: ROV Transect Sites

● ROV Sites

eCognition Classification

- A - Sandy Silt
- B - Silty Sand
- C - Gravel/Sand
- D - Gravelly Sand
- E - Sandy Gravel

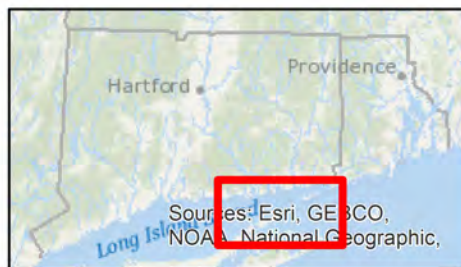
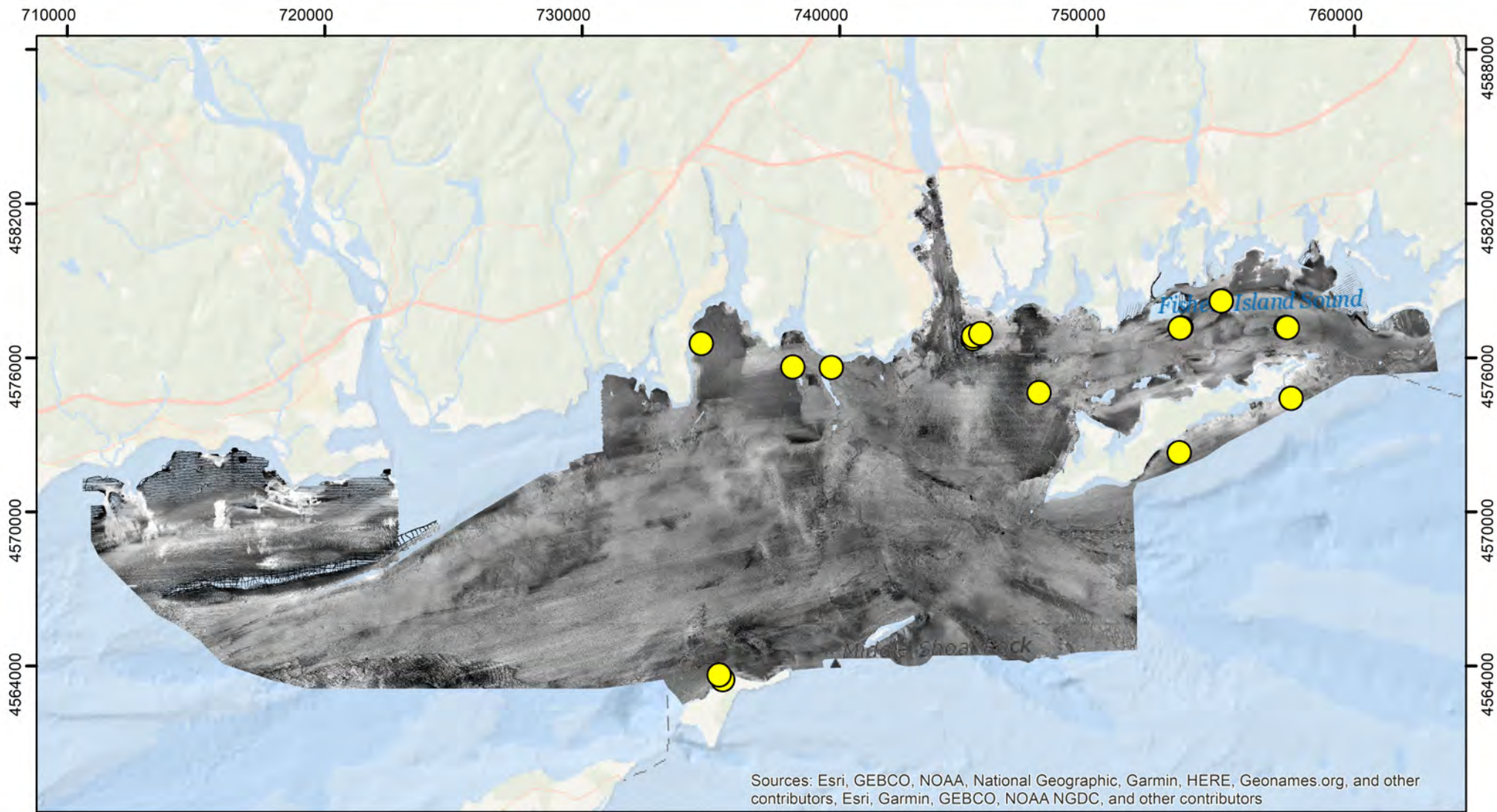


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983

0 1 2 4 6 8 Miles



LIS Cable Fund Mapping Phase 2: Wet Diving Sample Sites

● Wet Diving sites

Multibeam Backscatter
 High : 241
 Low : 1

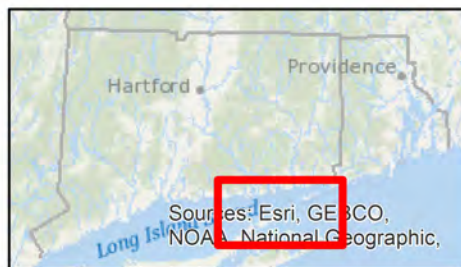
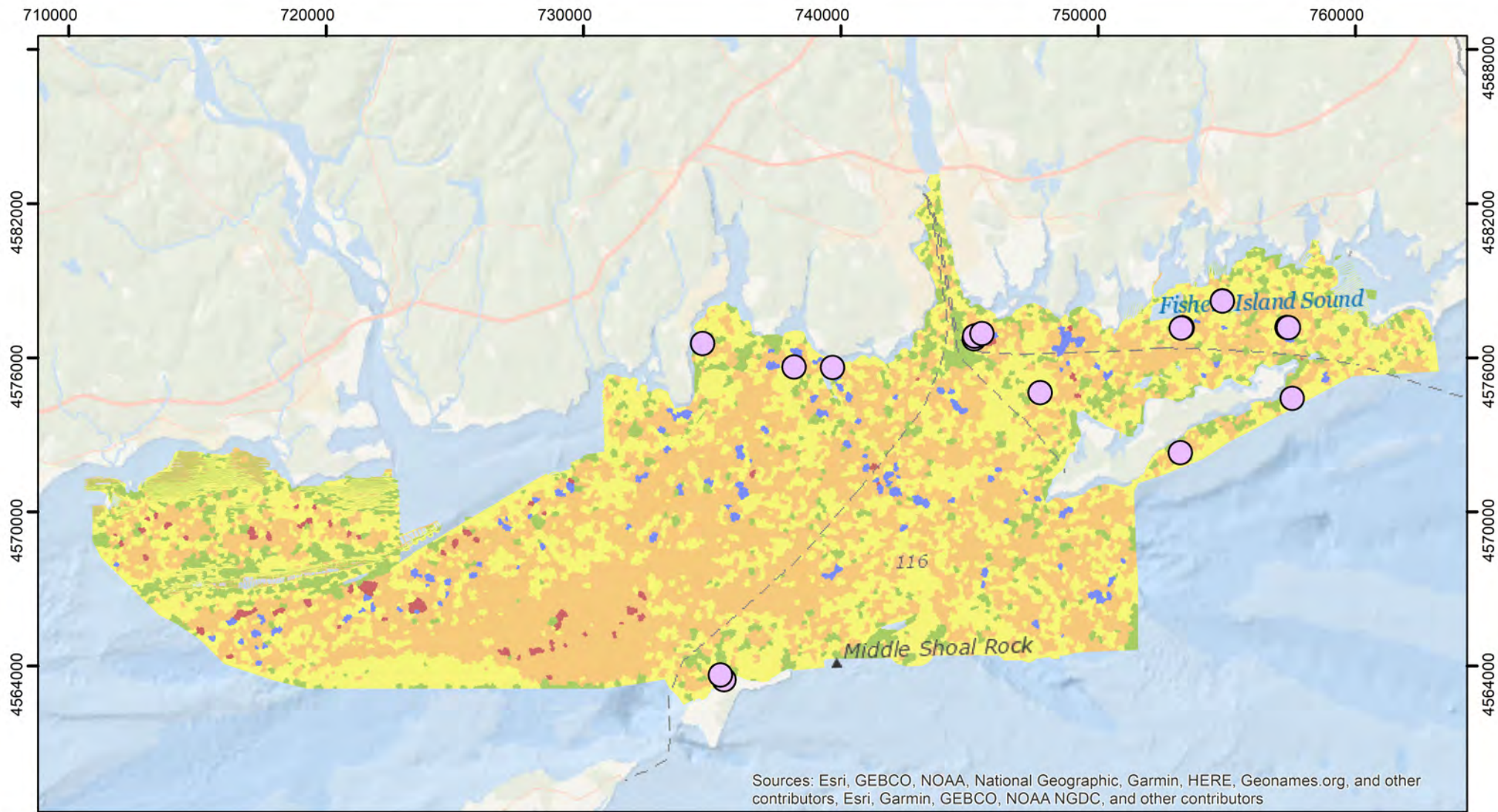


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983

0 1 2 4 6 8 Miles



LIS Cable Fund Mapping Phase 2: Wet Diving Sample Sites

Wet Diving sites

eCognition Classification

- A - Sandy Silt
- B - Silty Sand
- C - Gravel/Sand
- D - Gravelly Sand
- E - Sandy Gravel

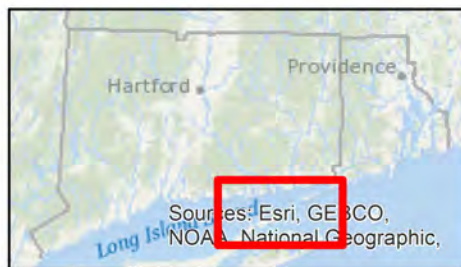
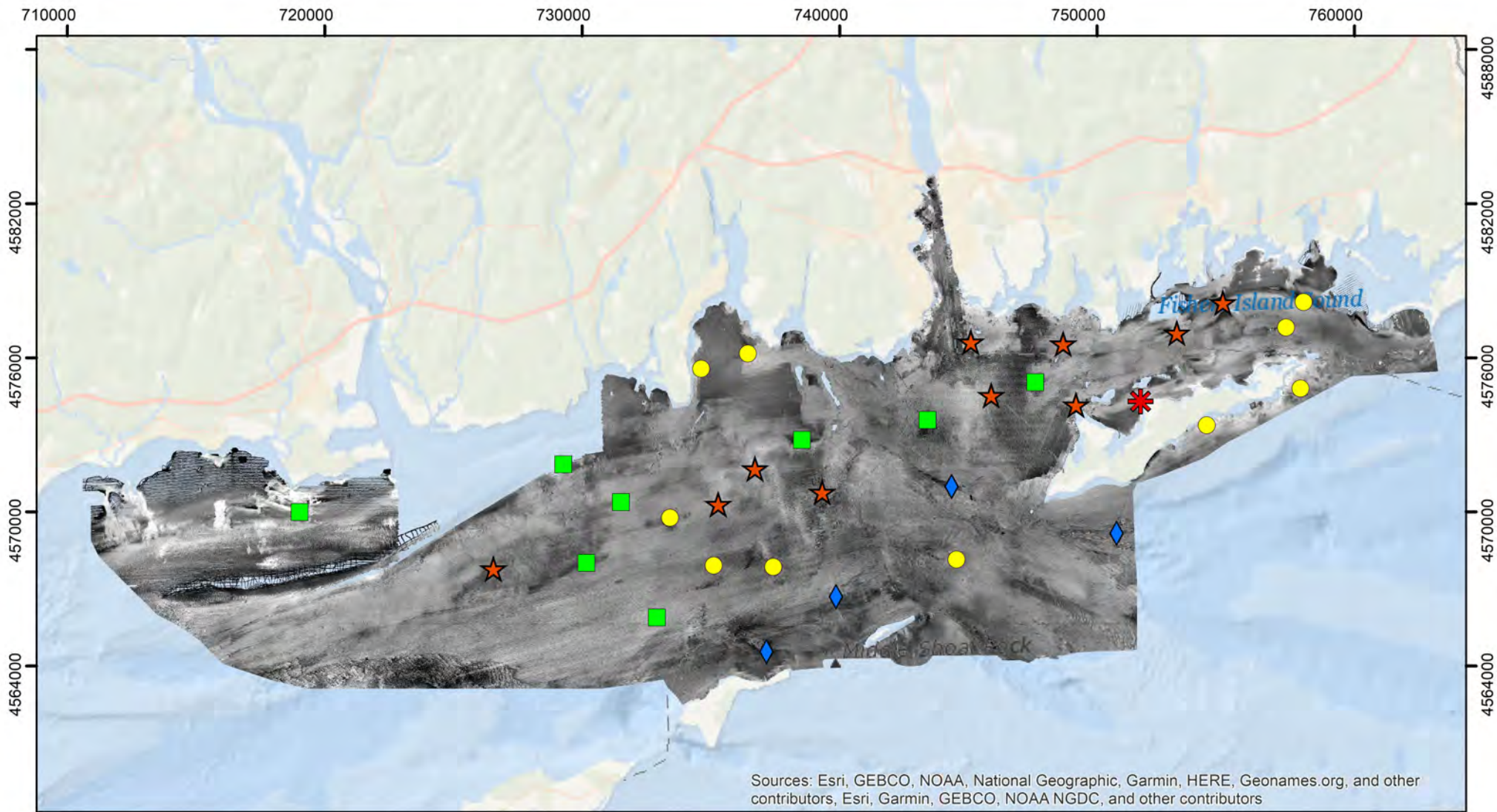


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983

0 1 2 4 6 8 Miles



LIS Cable Fund Mapping Phase 2: Mean Taxonomic and Feature Richness Fall 2017



Mean Taxonomic and Feature Richness

Epi - and Emergent - Fauna

- ◆ 1 - 6.80
- 6.81 - 8.29
- 8.30 - 9.59
- ★ 9.60 - 11.32
- ✱ 11.33 - 14.59

Multibeam Backscatter

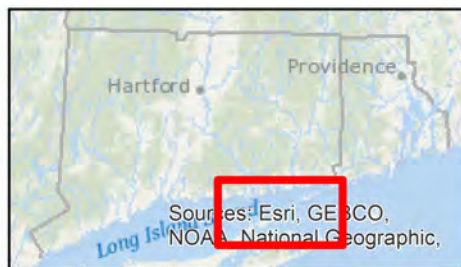
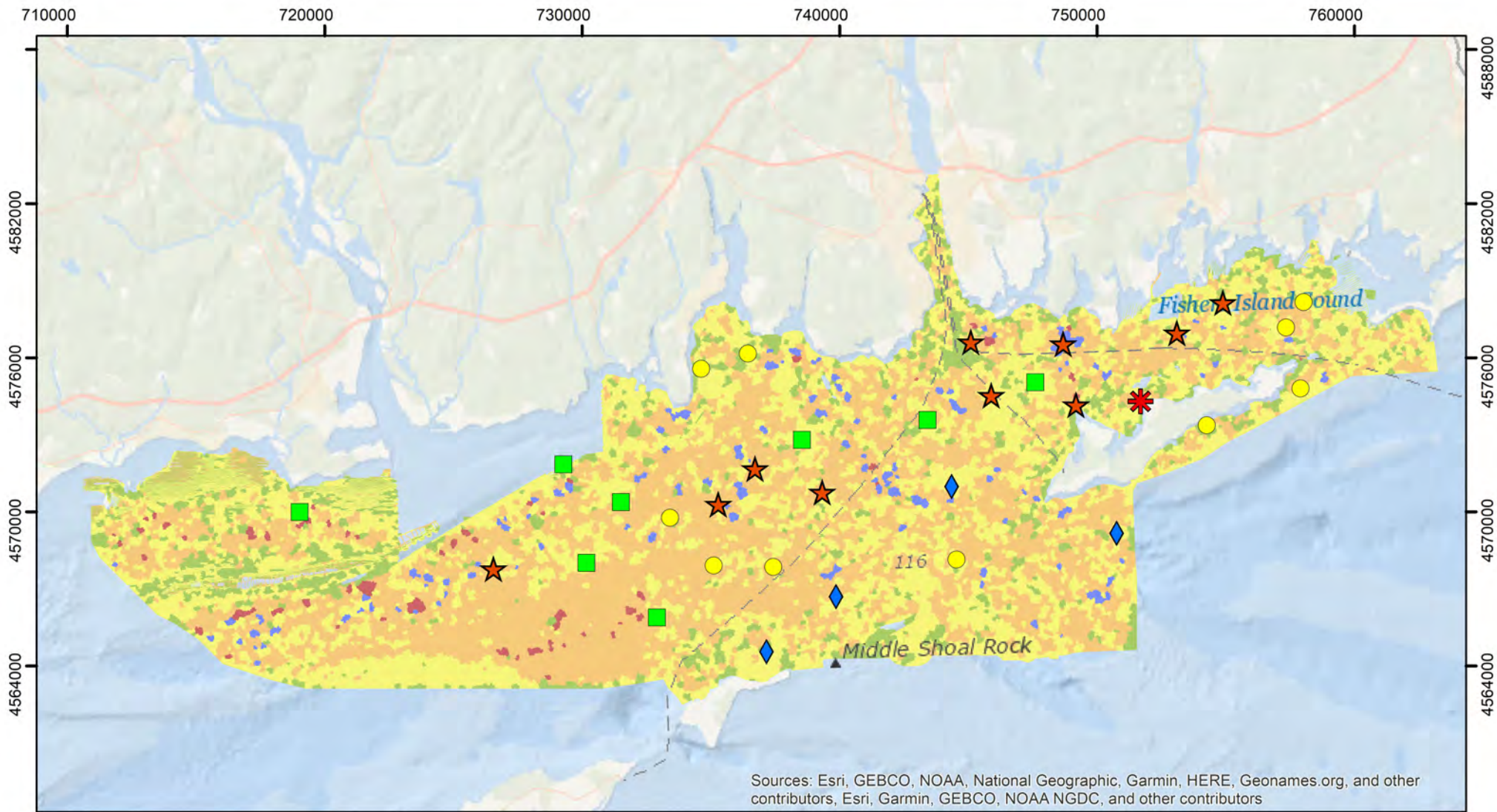


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: Mean Taxonomic and Feature Richness Fall 2017



Mean Taxonomic and Feature Richness

Epi - and Emergent - Fauna

- ◆ 1 - 6.80
- 6.81 - 8.29
- 8.30 - 9.59
- ★ 9.60 - 11.32
- ✱ 11.33 - 14.59

eCognition Classification

- A - Sandy Silt
- B - Silty Sand
- C - Gravel/Sand
- D - Gravelly Sand
- E - Sandy Gravel

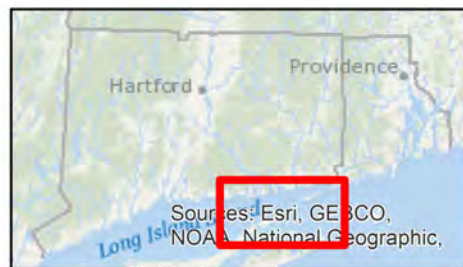
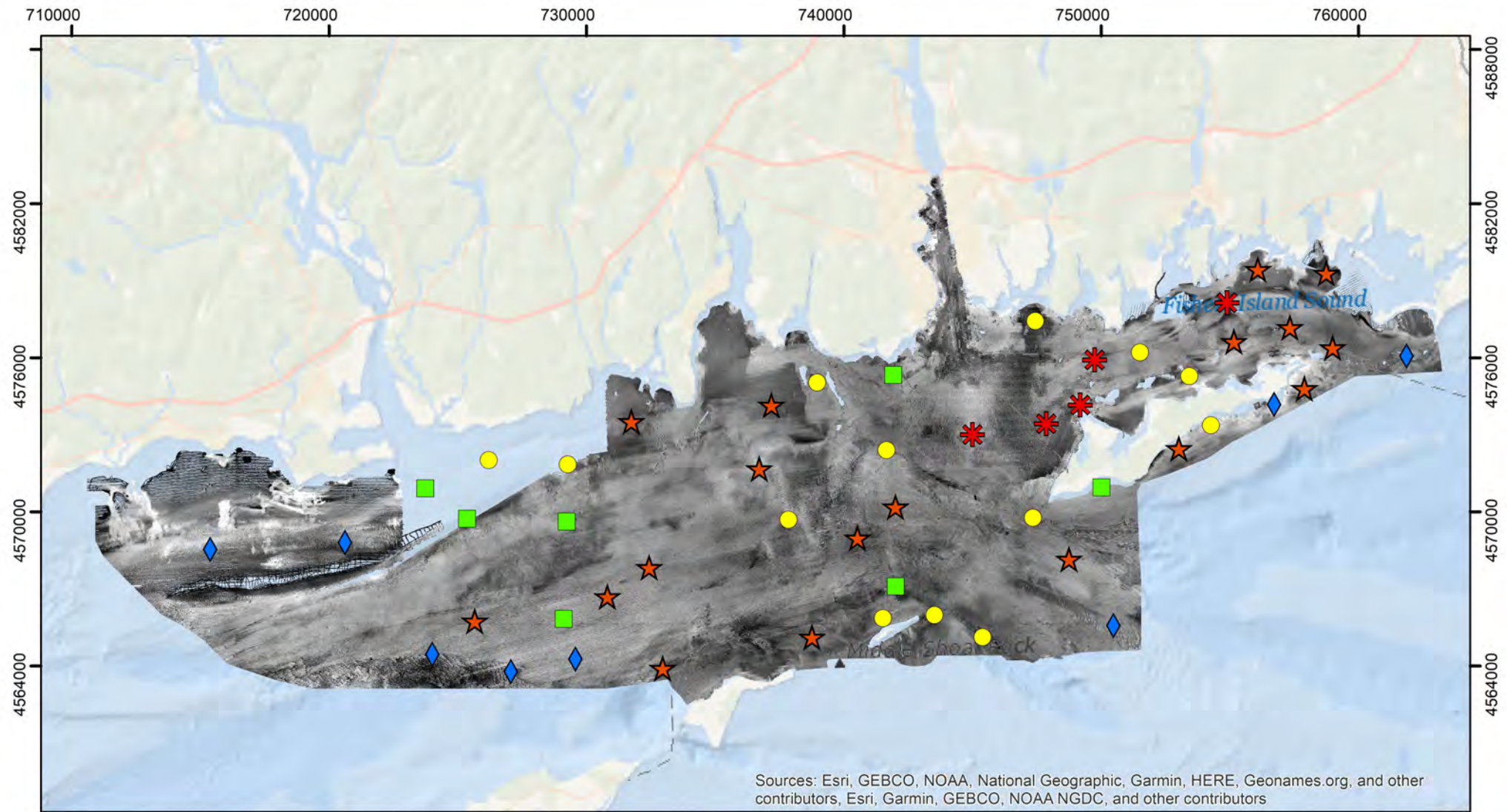
0 1 2 4 6 8 Miles



Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983



LIS Cable Fund Mapping Phase 2: Mean Taxonomic and Feature Richness Spring 2018



Mean Taxonomic and Feature Richness

Epi - and Emergent - Fauna

- ◆ 1 - 5.13
- 5.13 - 8.00
- 8.01 - 10.44
- ★ 10.45 - 13.60
- ✱ 13.61 - 17.22

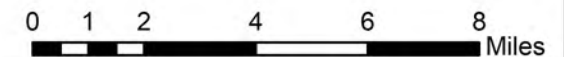
Multibeam Backscatter

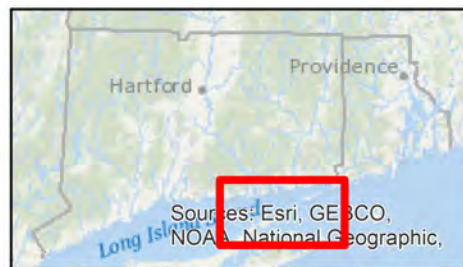
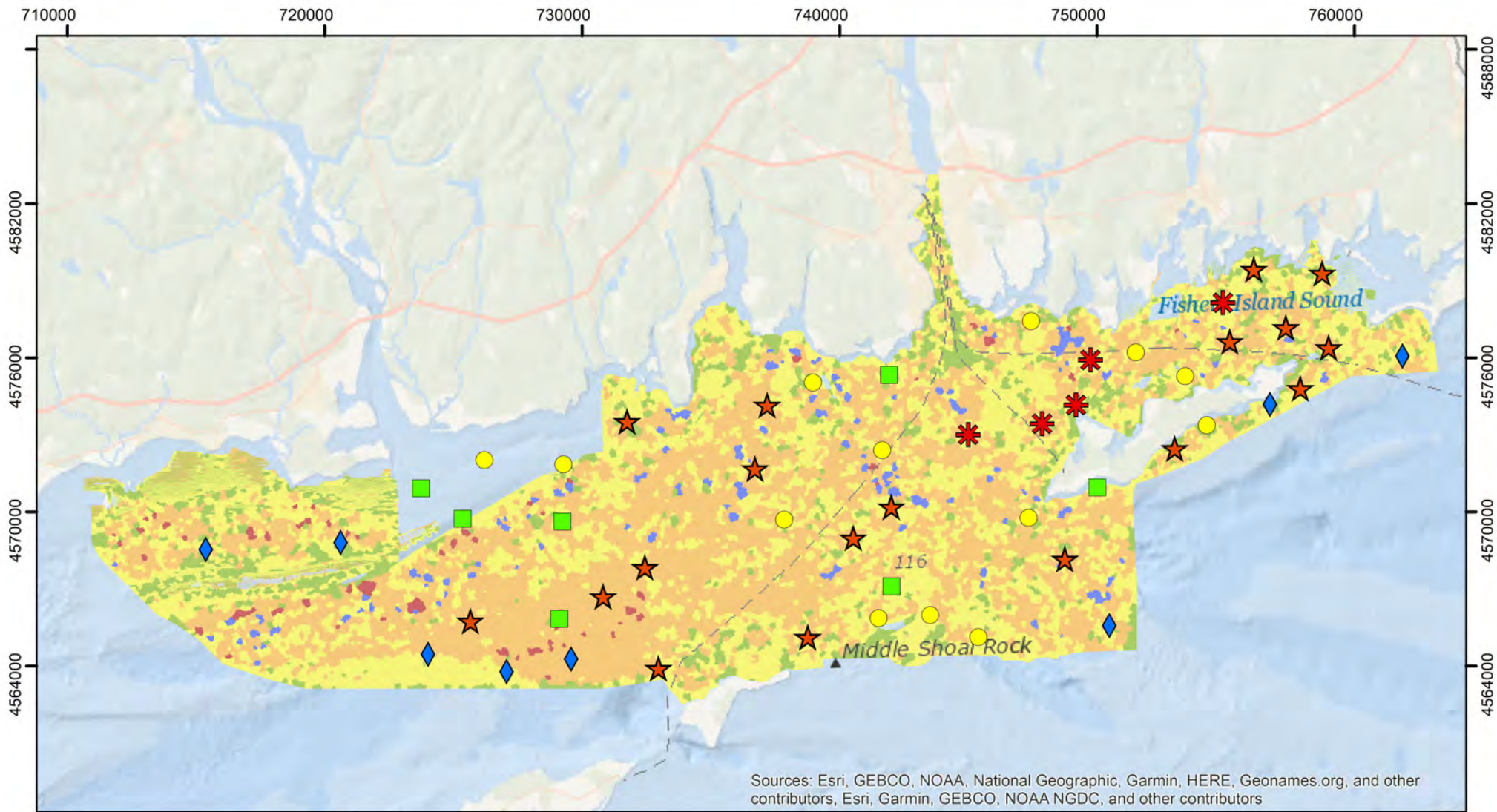


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: Mean Taxonomic and Feature Richness Spring 2018



Mean Taxonomic and Feature Richness

Epi- and Emergent - Fauna

- ◆ 1 - 5.13
- 5.13 - 8.00
- 8.01 - 10.44
- ★ 10.45 - 13.60
- ✱ 13.61 - 17.22

eCognition Classification

- A - Sandy Silt
- B - Silty Sand
- C - Gravel/Sand
- D - Gravelly Sand
- E - Sandy Gravel

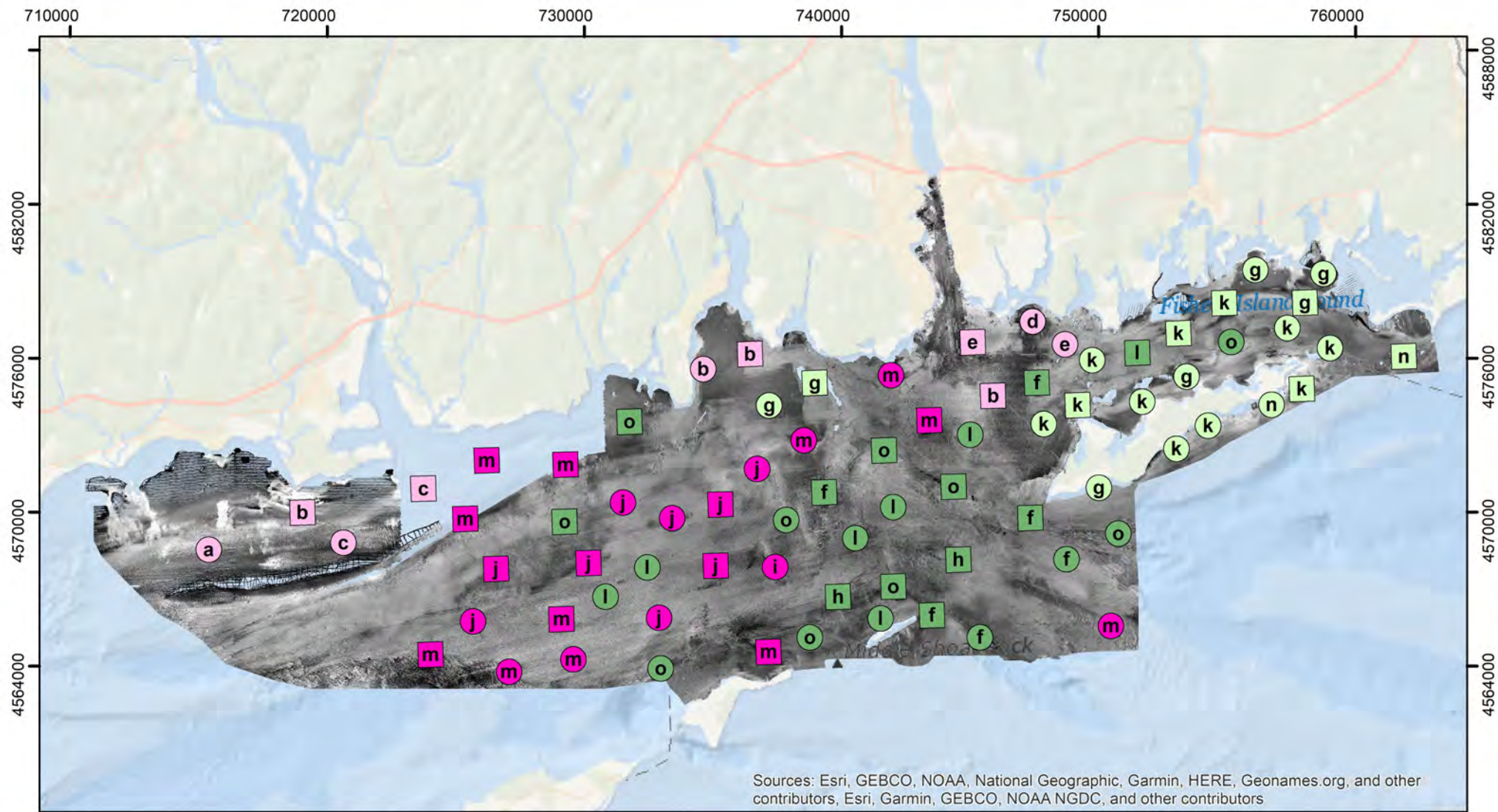
0 1 2 4 6 8 Miles



Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983



LIS Cable Fund Mapping Phase 2: Community Distribution for Taxonomic and Feature Richness



Community Distribution for Taxonomic and Feature Clusters

Geographic Region

- West
- Coast
- East
- Central

Taxonomic and Feature Simper Clusters

- i, j, m
- a, b, c, d, e
- g, k, n
- f, h, l, o

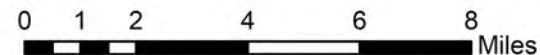
Multibeam Backscatter

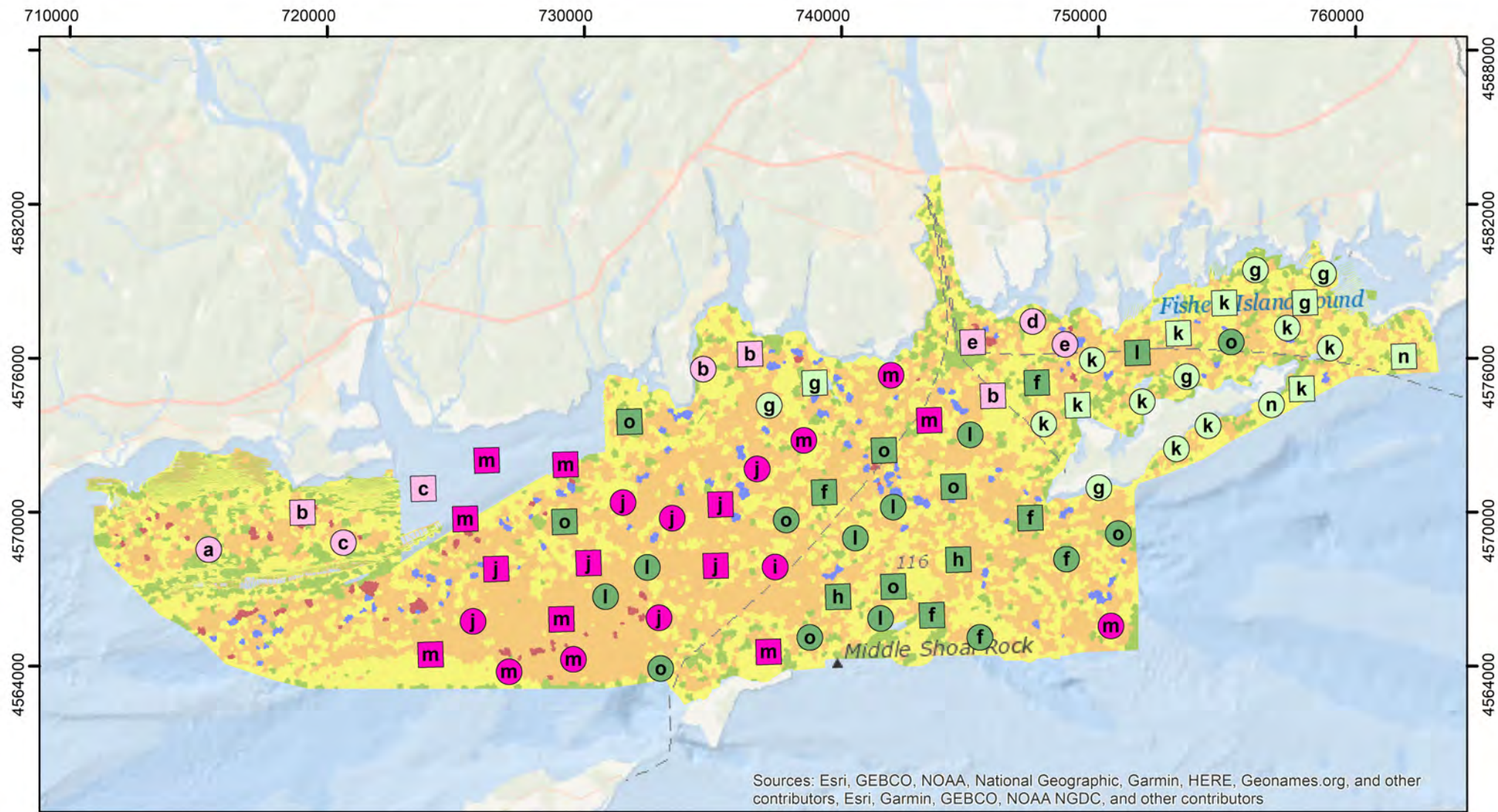


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: Community Distribution for Taxonomic and Feature Richness



Community Distribution for Taxonomic and Feature Clusters

Geographic Region

- West
- Coast
- East
- Central

Taxonomic and Feature Simper Clusters

- i, j, m
- a, b, c, d, e
- g, k, n
- f, h, l, o

eCognition Classification

- A - Sandy Silt
- B - Silty Sand
- C - Gravel/Sand
- D - Gravelly Sand
- E - Sandy Gravel

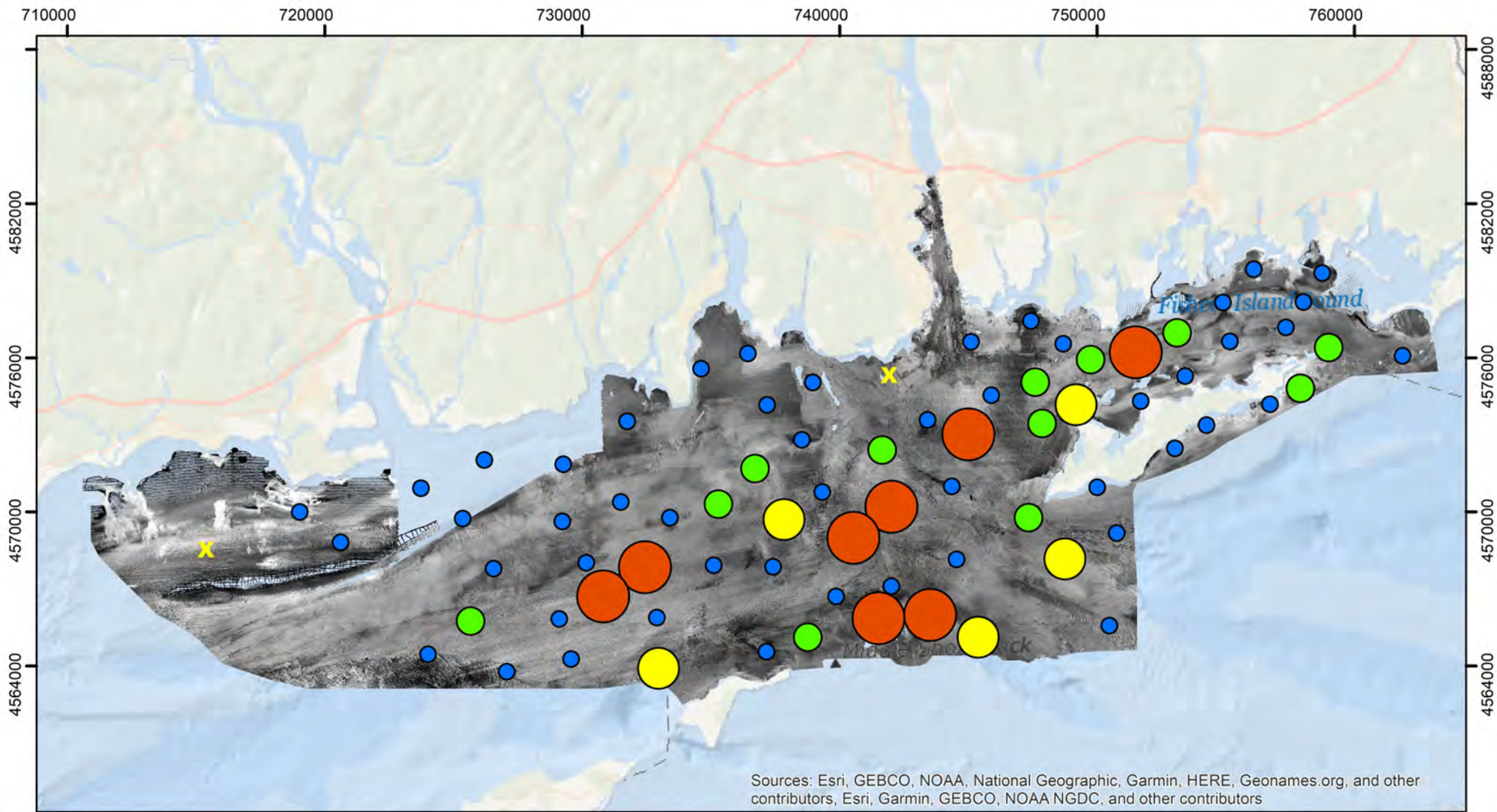


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: Fall 2017 and Spring 2018 Hydrozoan - Bryozoan Turfs



**Hydrozoan
Percent Cover**



0
> 0 - 20



21 - 40



41 - 60



61 - 80



81 - 100

Multibeam Backscatter

High : 241



Low : 1

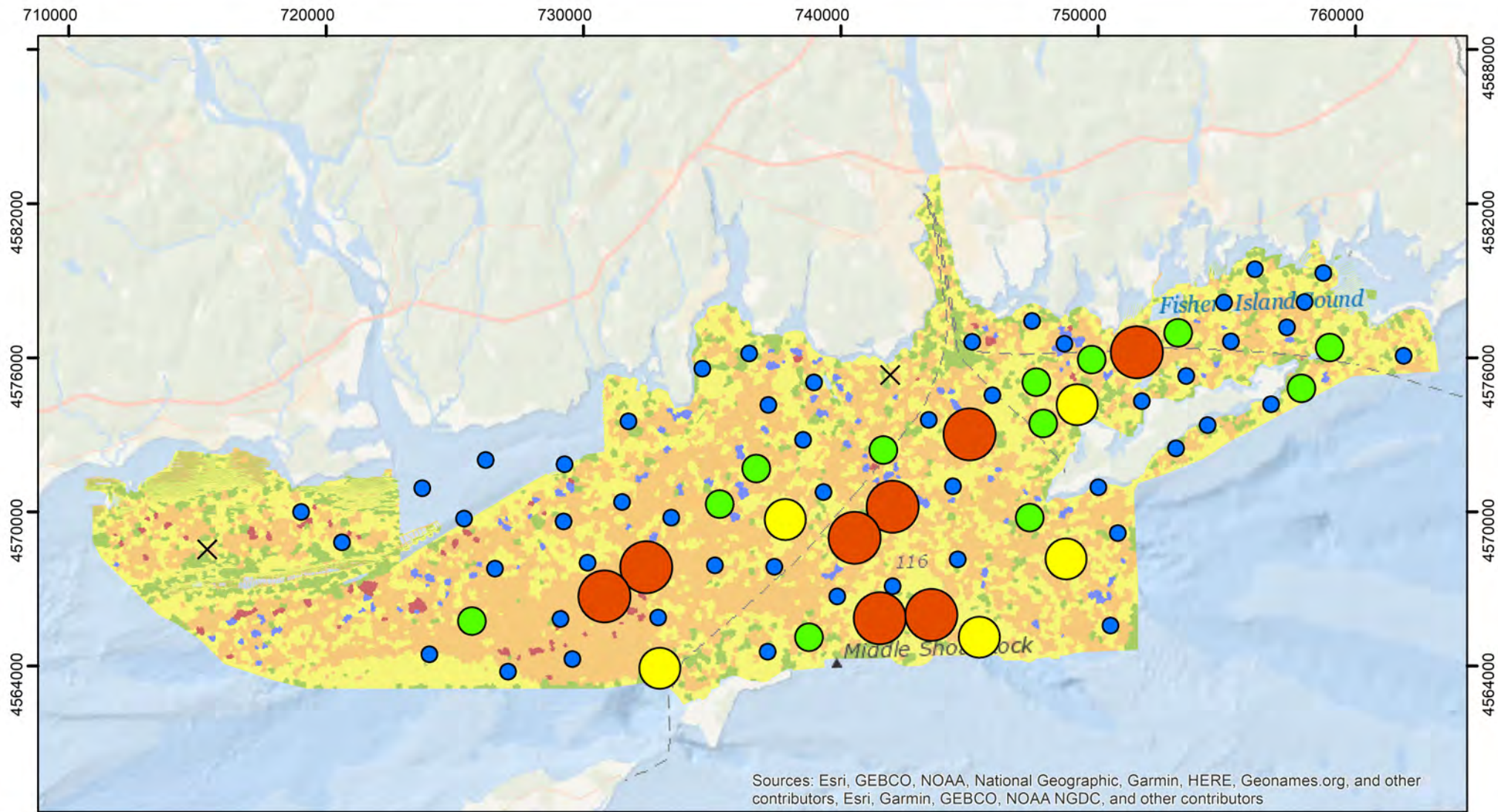


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983

0 1 2 4 6 8 Miles



LIS Cable Fund Mapping Phase 2: Fall 2017 and Spring 2018 Hydrozoan - Bryozoan Turfs



Hydrozoan Percent Cover



0
> 0 - 20



21 - 40



41 - 60



61 - 80



81 - 100

eCognition Classification



A - Sandy Silt



B - Silty Sand



C - Gravel/Sand



D - Gravelly Sand



E - Sandy Gravel

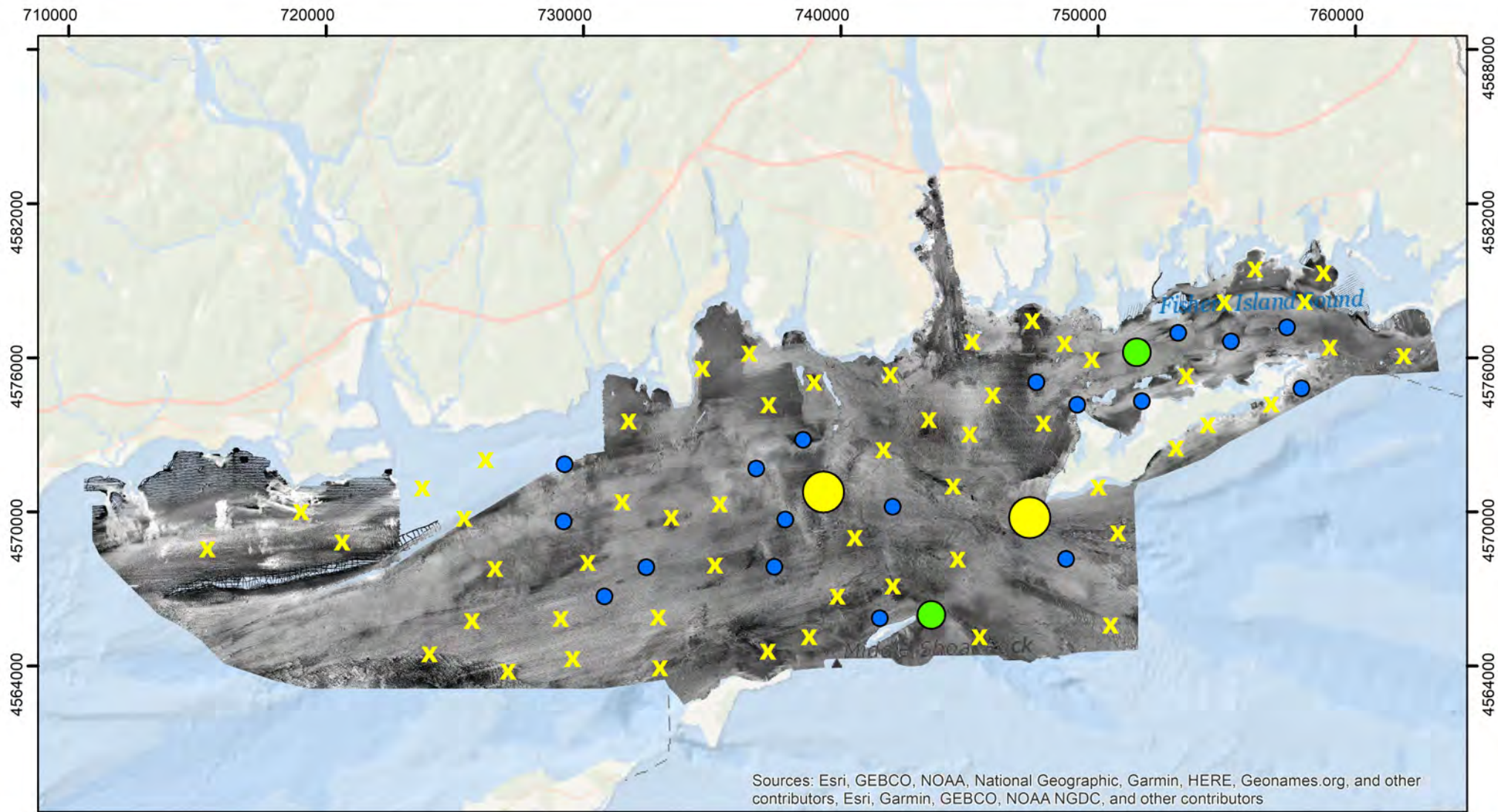


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: Fall 2017 and Spring 2018 Ghost anemone- *Diadumene leucolena*



Ghost anemone Percent Cover

- X 0
- > 0 - 20
- 21 - 40

- 41 - 60
- 61 - 80
- 81 - 100

Multibeam Backscatter

- High : 241
- Low : 1

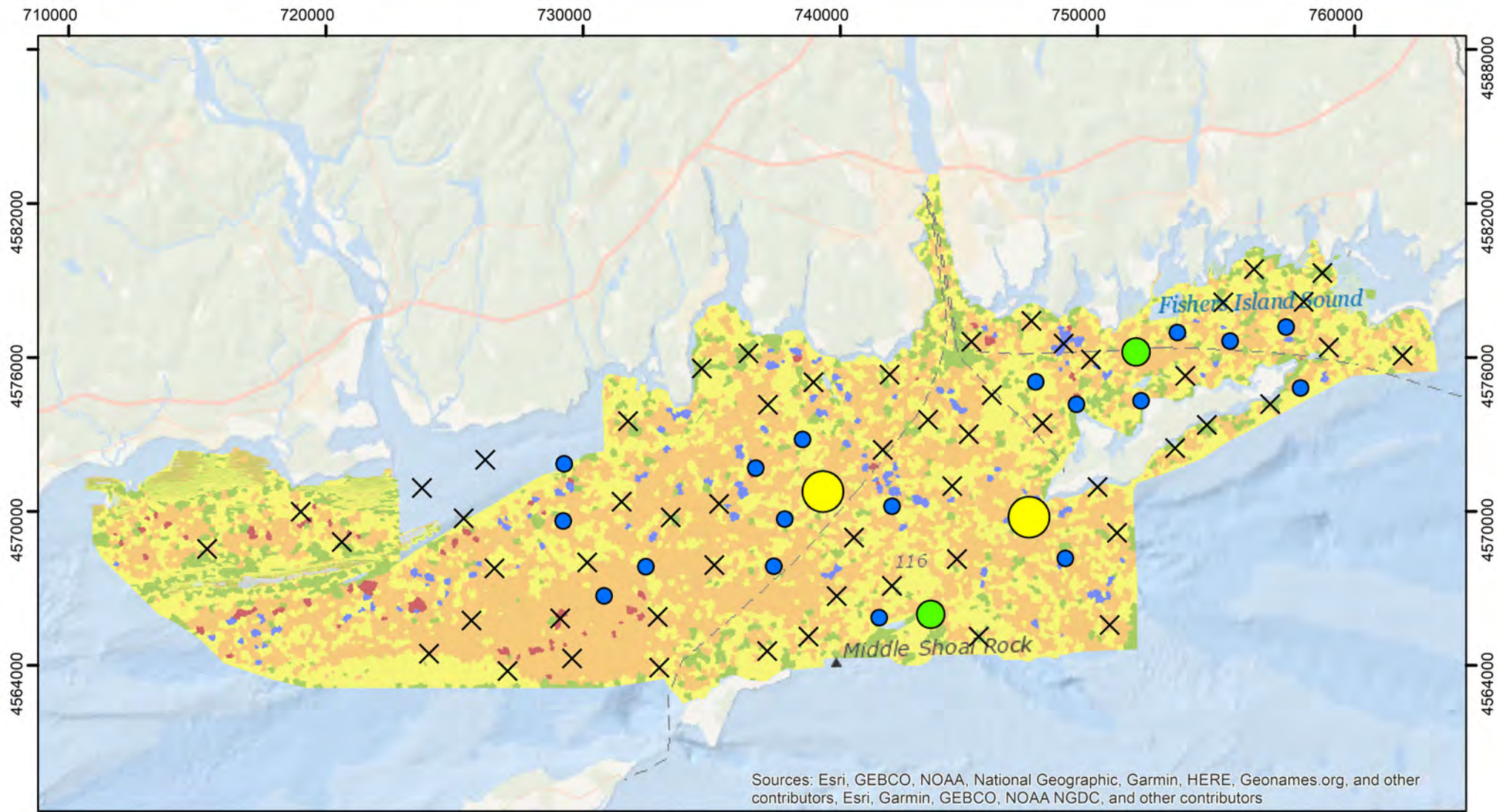


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983

0 1 2 4 6 8 Miles



LIS Cable Fund Mapping Phase 2: Fall 2017 and Spring 2018 Ghost anemone- *Diadumene leucolena*



Ghost anemone Percent Cover

X 0

● > 0 - 20

● 21 - 40

● 41 - 60

● 61 - 80

● 81 - 100

eCognition Classification

■ A - Sandy Silt

■ B - Silty Sand

■ C - Gravel/Sand

■ D - Gravelly Sand

■ E - Sandy Gravel

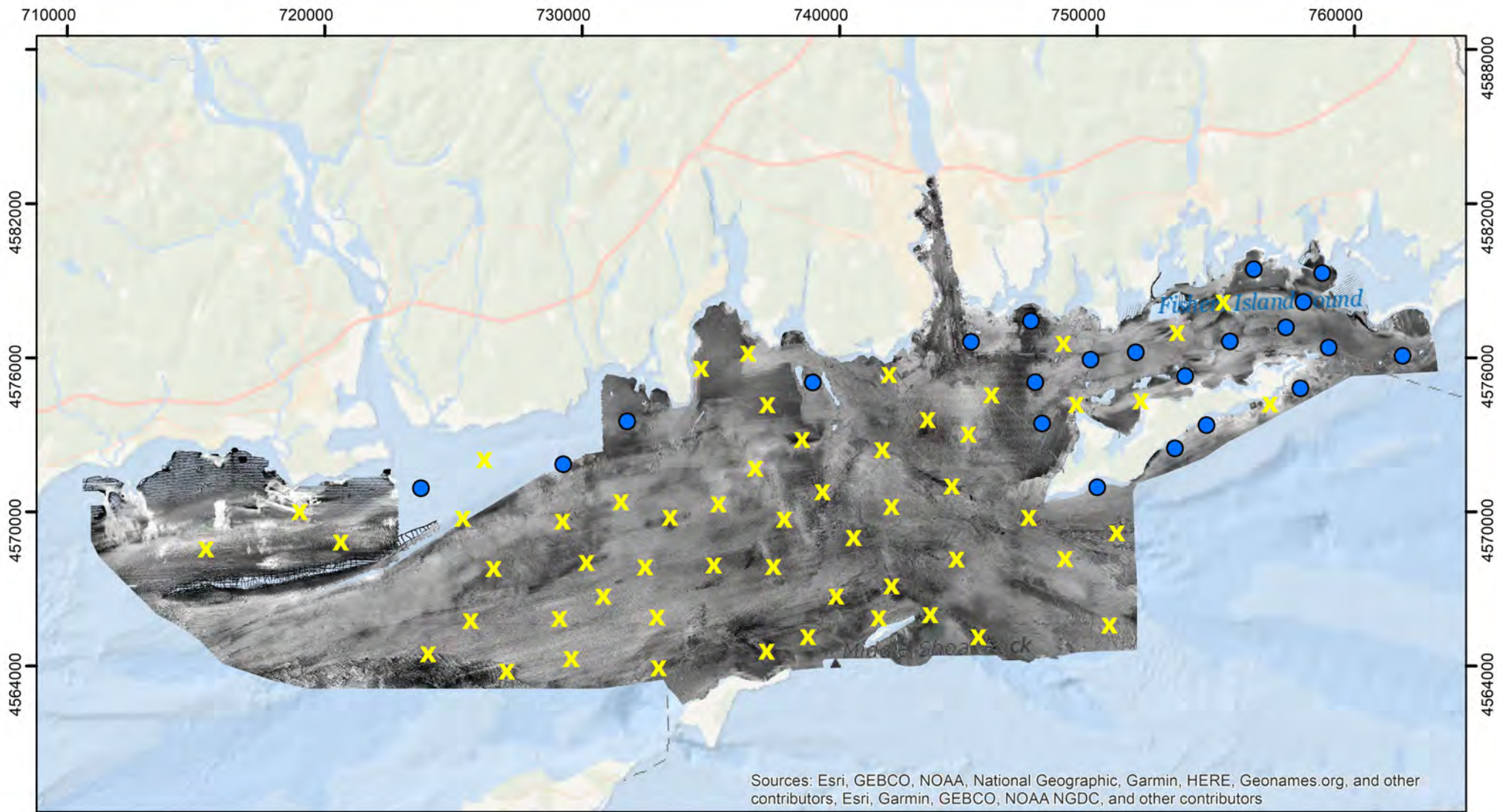


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983

0 1 2 4 6 8 Miles



LIS Cable Fund Mapping Phase 2: Fall 2017 and Spring 2018 Kelp taxa - *Laminariaceae*



Kelp taxa

Percent Cover



0



> 0 - 20



21 - 40



41 - 60



61 - 80



81 - 100

Multibeam Backscatter

High : 241



Low : 1

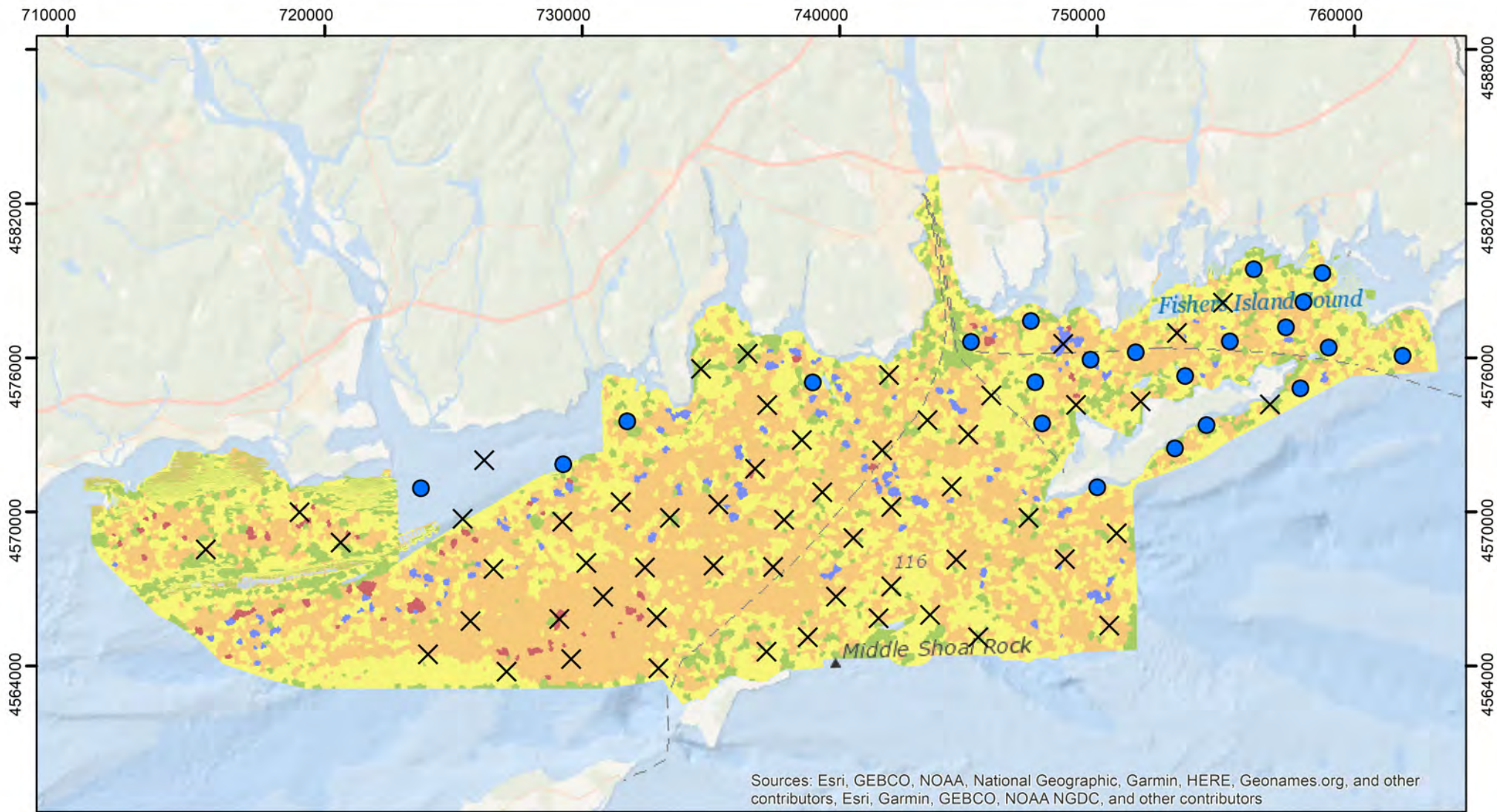


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983

0 1 2 4 6 8 Miles



LIS Cable Fund Mapping Phase 2: Fall 2017 and Spring 2018 Kelp taxa - *Laminariaceae*



Kelp taxa

Percent Cover



0



> 0 - 20



21 - 40



41 - 60



61 - 80



81 - 100

eCognition Classification



A - Sandy Silt



B - Silty Sand



C - Gravel/Sand



D - Gravelly Sand



E - Sandy Gravel

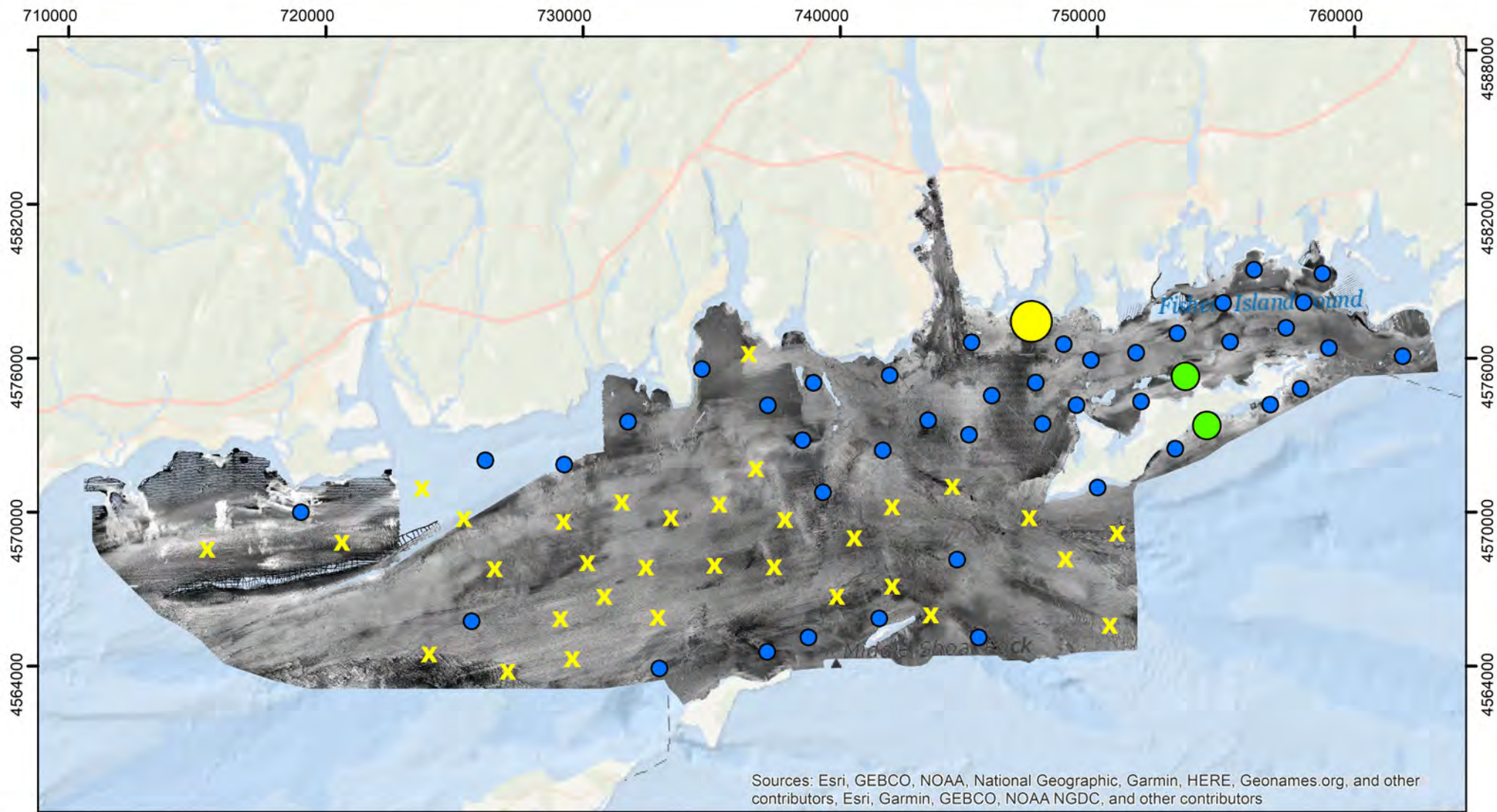


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: Fall 2017 and Spring 2018 Red macroalgae -*Rhodophyta*



**Red macroalgae
Percent Cover**



0
> 0 - 20



21 - 40



41 - 60



61 - 80



81 - 100

Multibeam Backscatter

High : 241



Low : 1

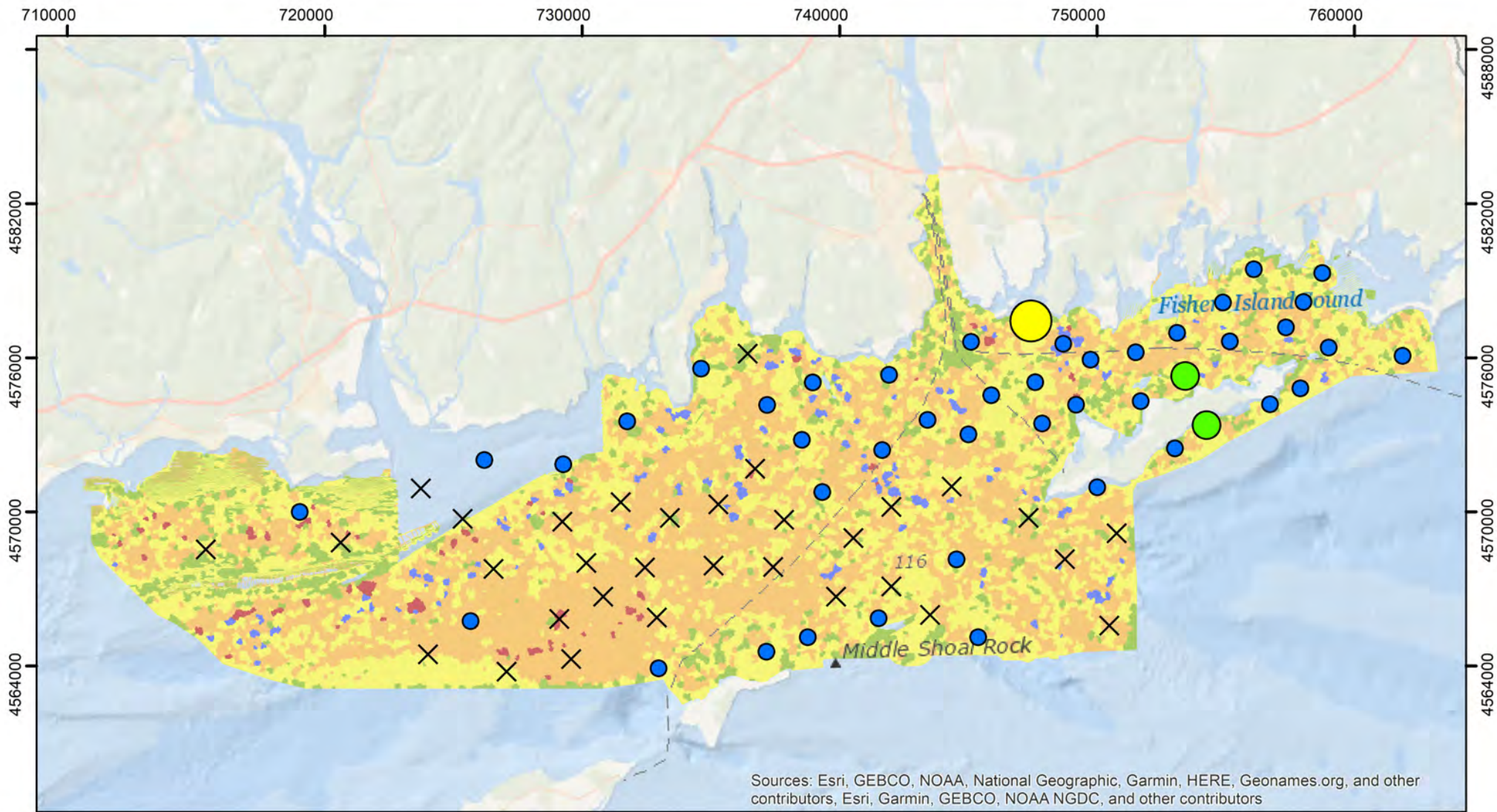


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983

0 1 2 4 6 8 Miles



LIS Cable Fund Mapping Phase 2: Fall 2017 and Spring 2018 Red macroalgae -*Rhodophyta*



Red macroalgae Percent Cover

- X 0
- > 0 - 20
- 21 - 40

- 41 - 60
- 61 - 80
- 81 - 100

eCognition Classification

- A - Sandy Silt
- B - Silty Sand
- C - Gravel/Sand
- D - Gravelly Sand
- E - Sandy Gravel

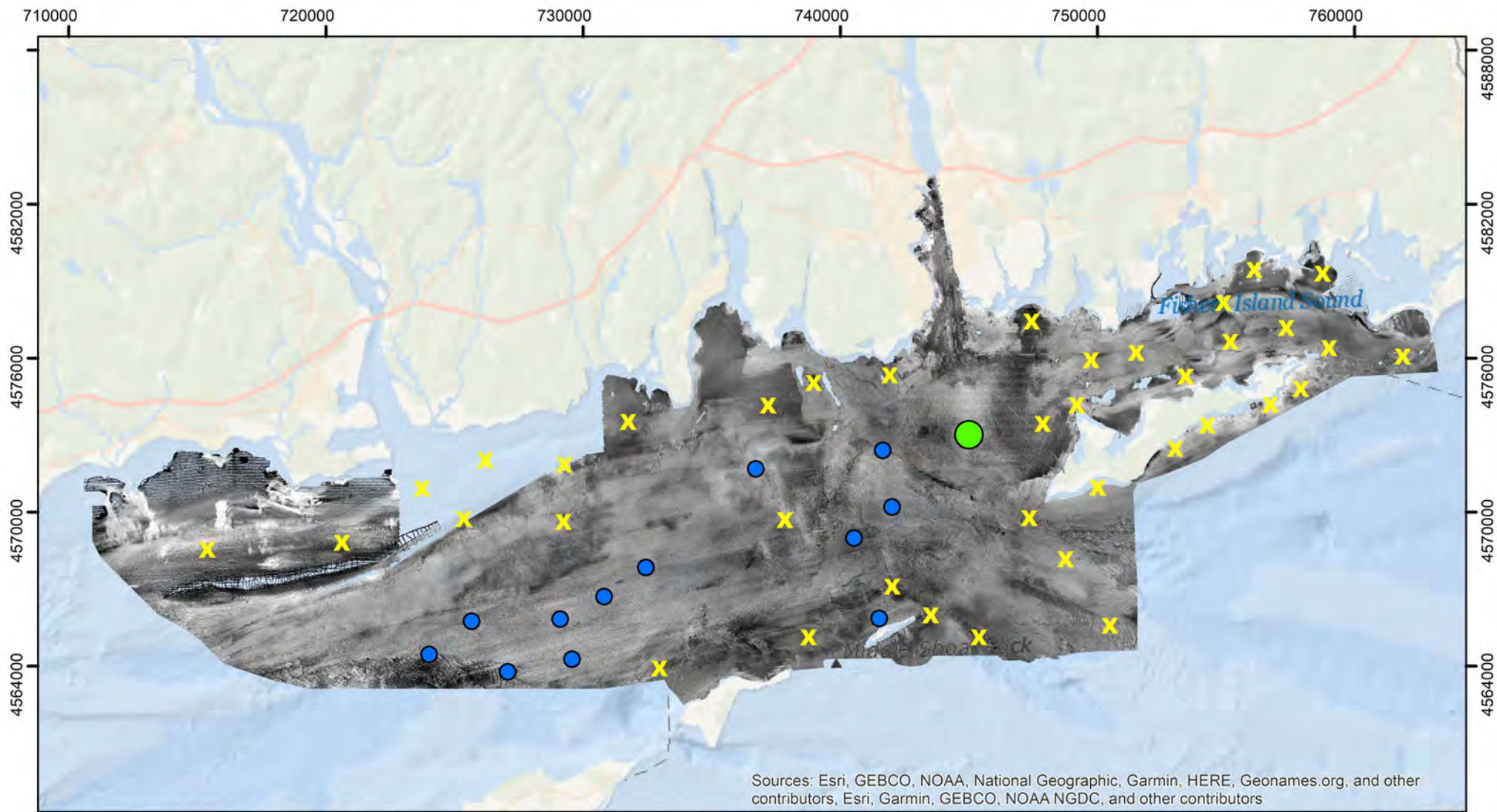


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983

0 1 2 4 6 8 Miles



LIS Cable Fund Mapping Phase 2: Spring 2018 Solitary hydroid - *Corymorpha pendula*

**Solitary hydroid
Percent Cover**

- X 0
- > 0 - 20
- 21 - 40

● 41 - 60

● 61 - 80

● 81 - 100

Multibeam Backscatter

High : 241

Low : 1

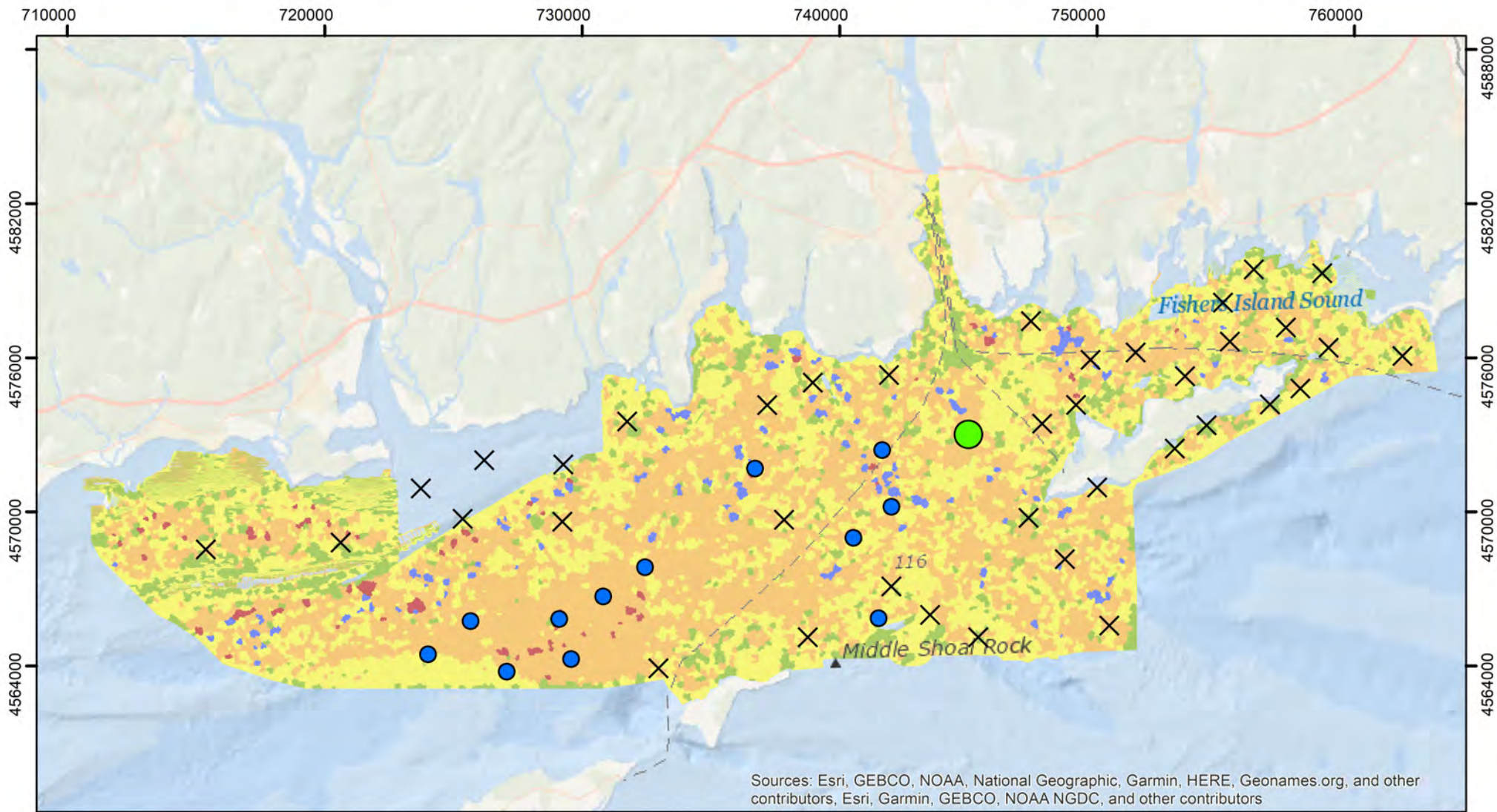


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983

0 1 2 4 6 8 Miles



LIS Cable Fund Mapping Phase 2: Spring 2018 Solitary hydroid - *Corymorpha pendula*

Solitary hydroid Percent Cover

- × 0
- > 0 - 20
- 21 - 40

- 41 - 60
- 61 - 80
- 81 - 100

eCognition Classification

- A - Sandy Silt
- B - Silty Sand
- C - Gravel/Sand
- D - Gravelly Sand
- E - Sandy Gravel

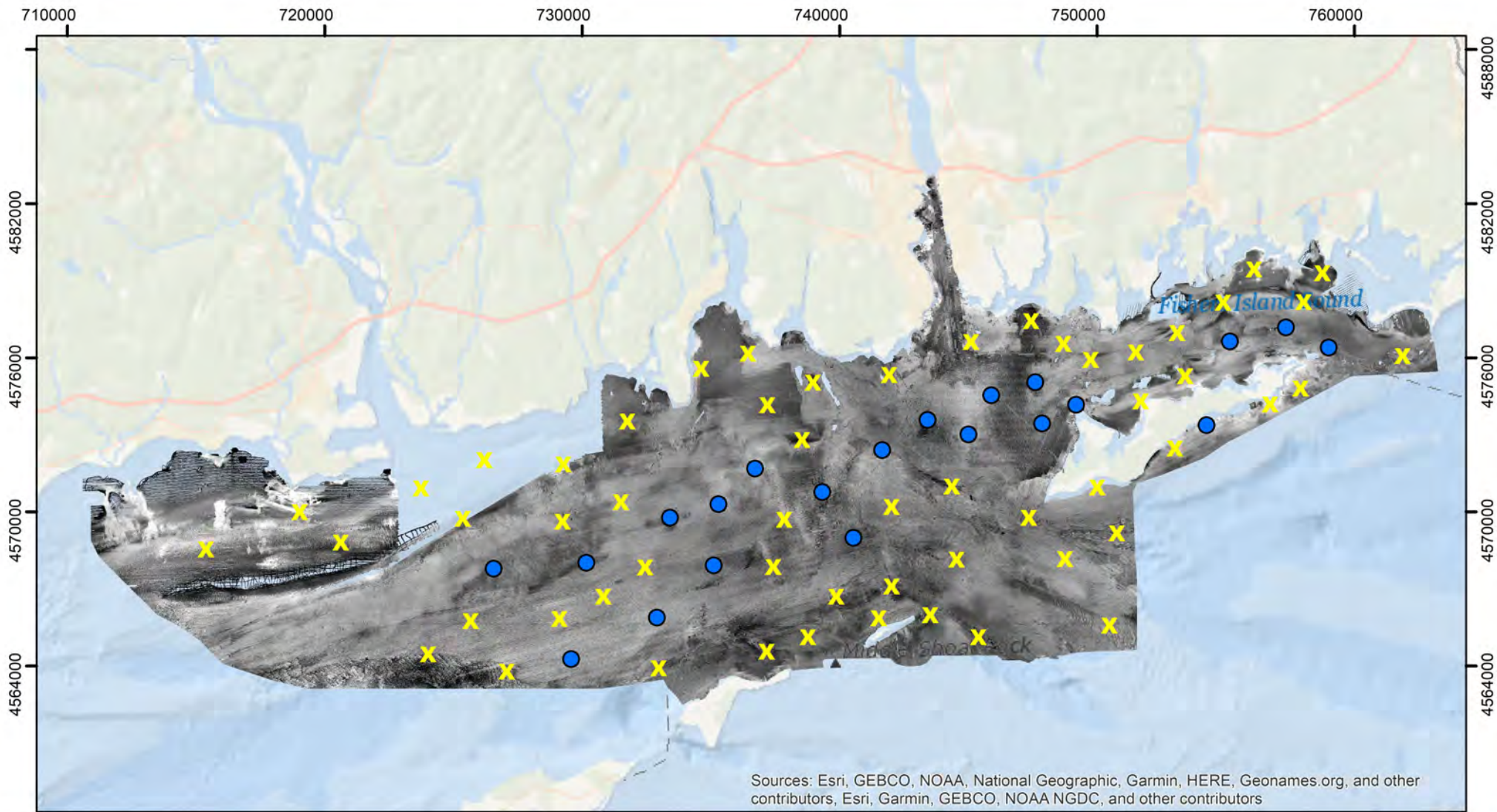


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983

0 1 2 4 6 8 Miles



LIS Cable Fund Mapping Phase 2: Fall 2017 and Spring 2018 Blue mussel - *Mytilus edulis*



**Blue mussel -
Percent Cover**



0



> 0 - 20



21 - 40



41 - 60



61 - 80



81 - 100

Multibeam Backscatter

High : 241



Low : 1

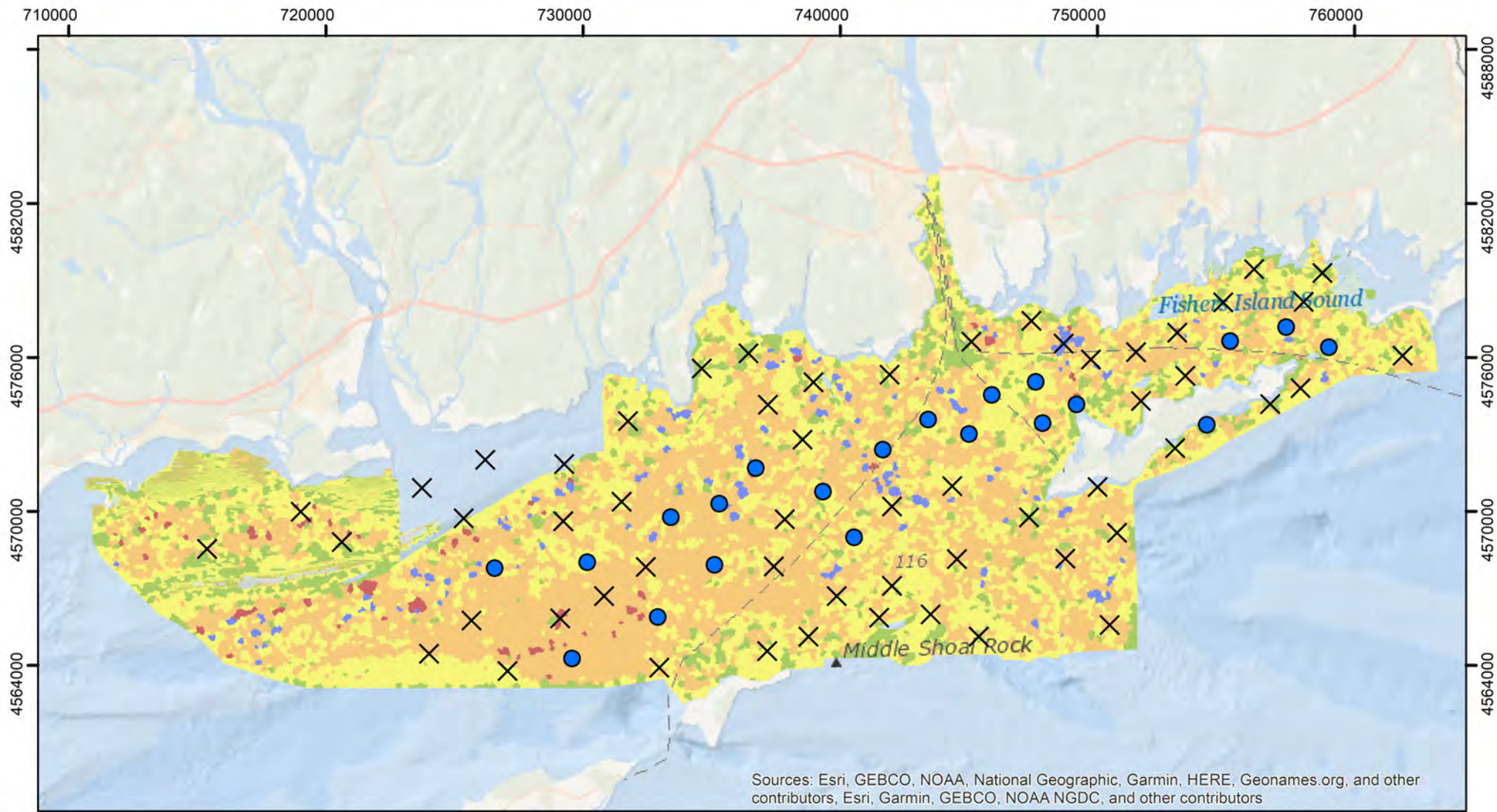


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983

0 1 2 4 6 8 Miles



LIS Cable Fund Mapping Phase 2: Fall 2017 and Spring 2018 Blue mussel - *Mytilus edulis*



Blue mussel - Percent Cover



0
> 0 - 20



21 - 40



41 - 60



61 - 80



81 - 100

eCognition Classification



A - Sandy Silt



B - Silty Sand



C - Gravel/Sand



D - Gravelly Sand



E - Sandy Gravel

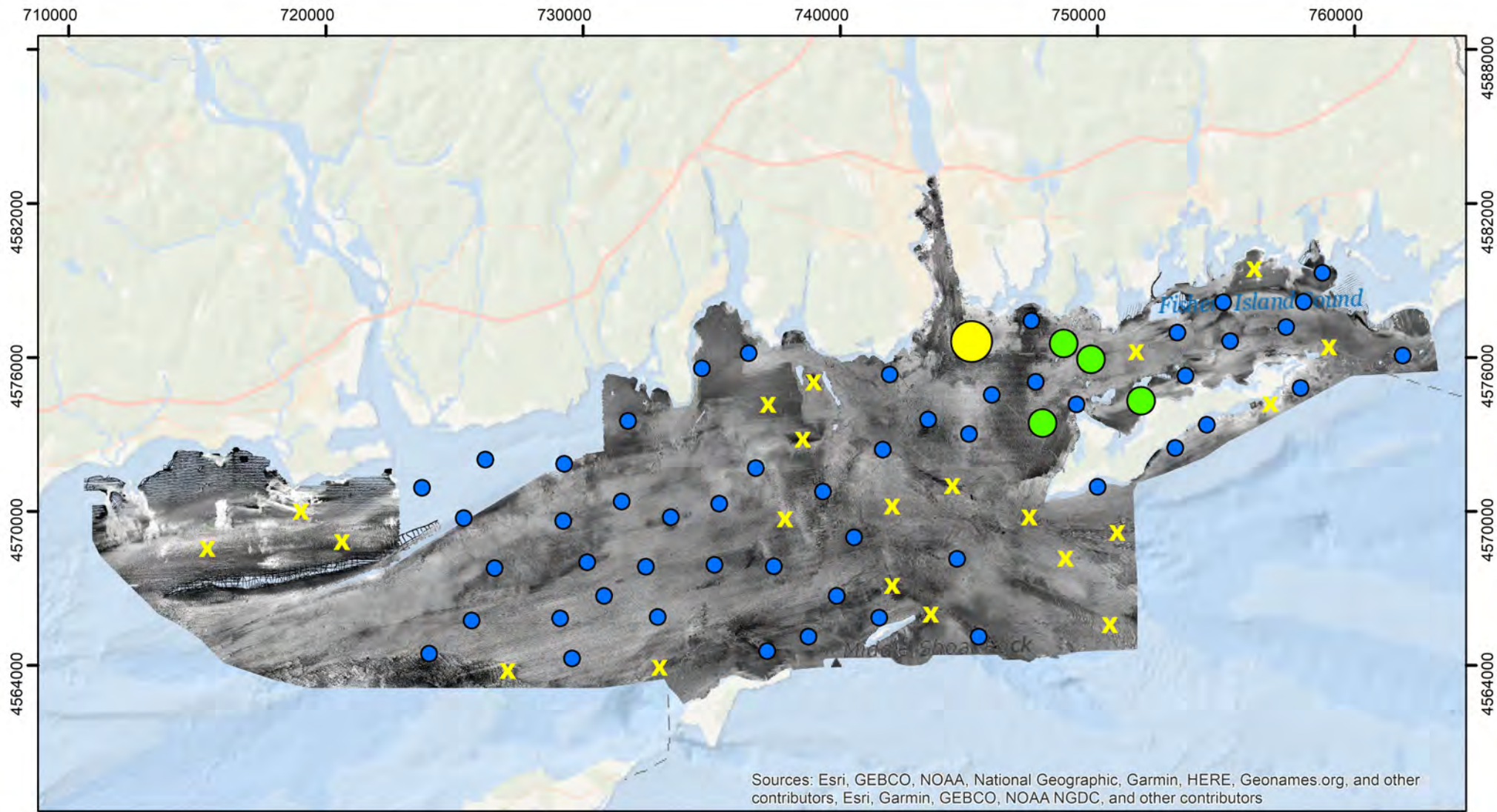


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: Fall 2017 and Spring 2018 Atlantic slipper limpet- *Crepidula fornicata*



Atlantic slipper limpet
Percent Cover

- X 0
- > 0 - 20
- 21 - 40

● 41 - 60

● 61 - 80

● 81 - 100

Multibeam Backscatter

High : 241

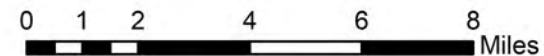
Low : 1

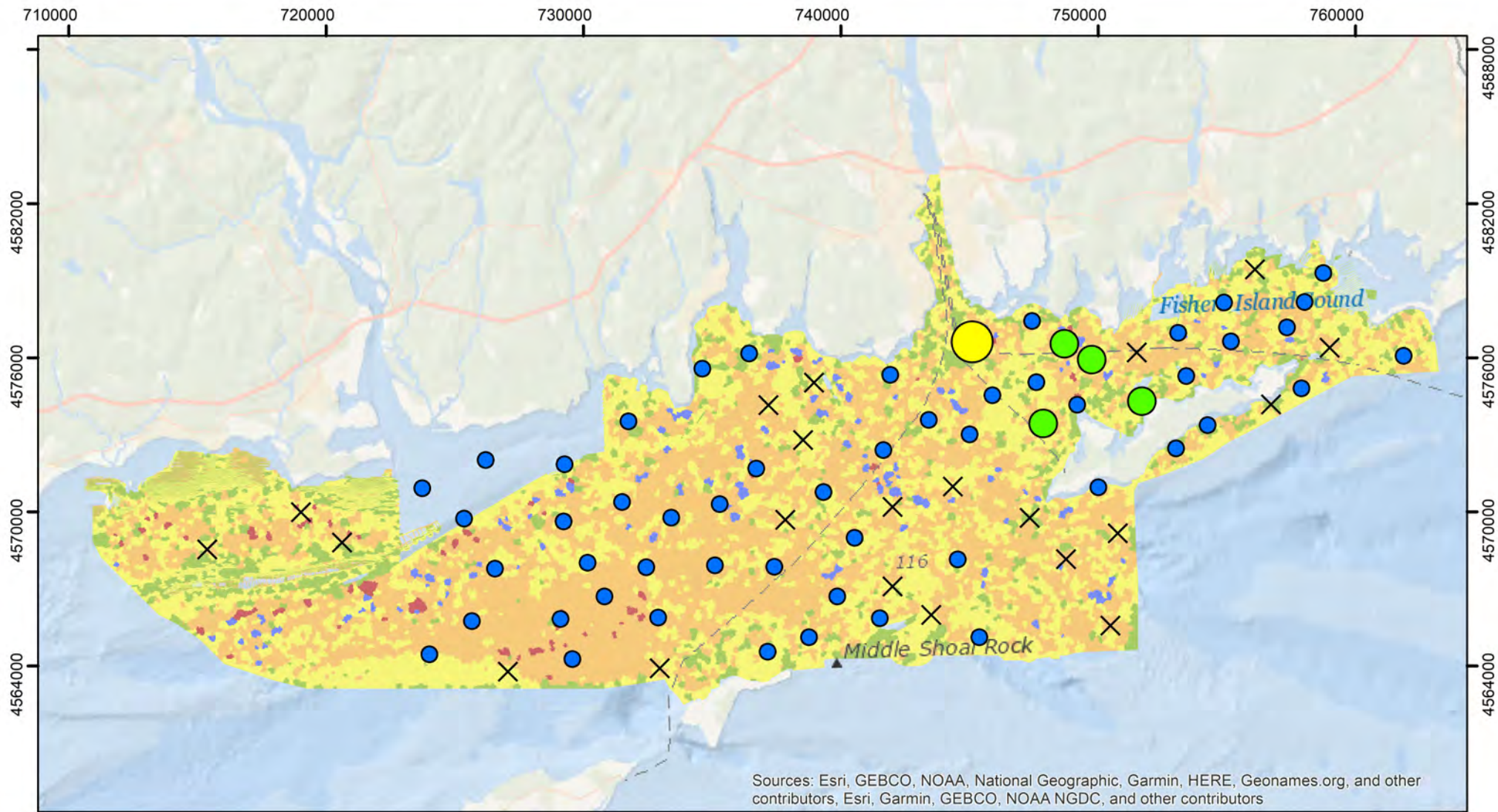


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: Fall 2017 and Spring 2018 Atlantic slipper limpet- *Crepidula fornicata*



Atlantic slipper limpet Percent Cover

- × 0
- > 0 - 20
- 21 - 40

- 41 - 60
- 61 - 80
- 81 - 100

eCognition Classification

- A - Sandy Silt
- B - Silty Sand
- C - Gravel/Sand
- D - Gravelly Sand
- E - Sandy Gravel

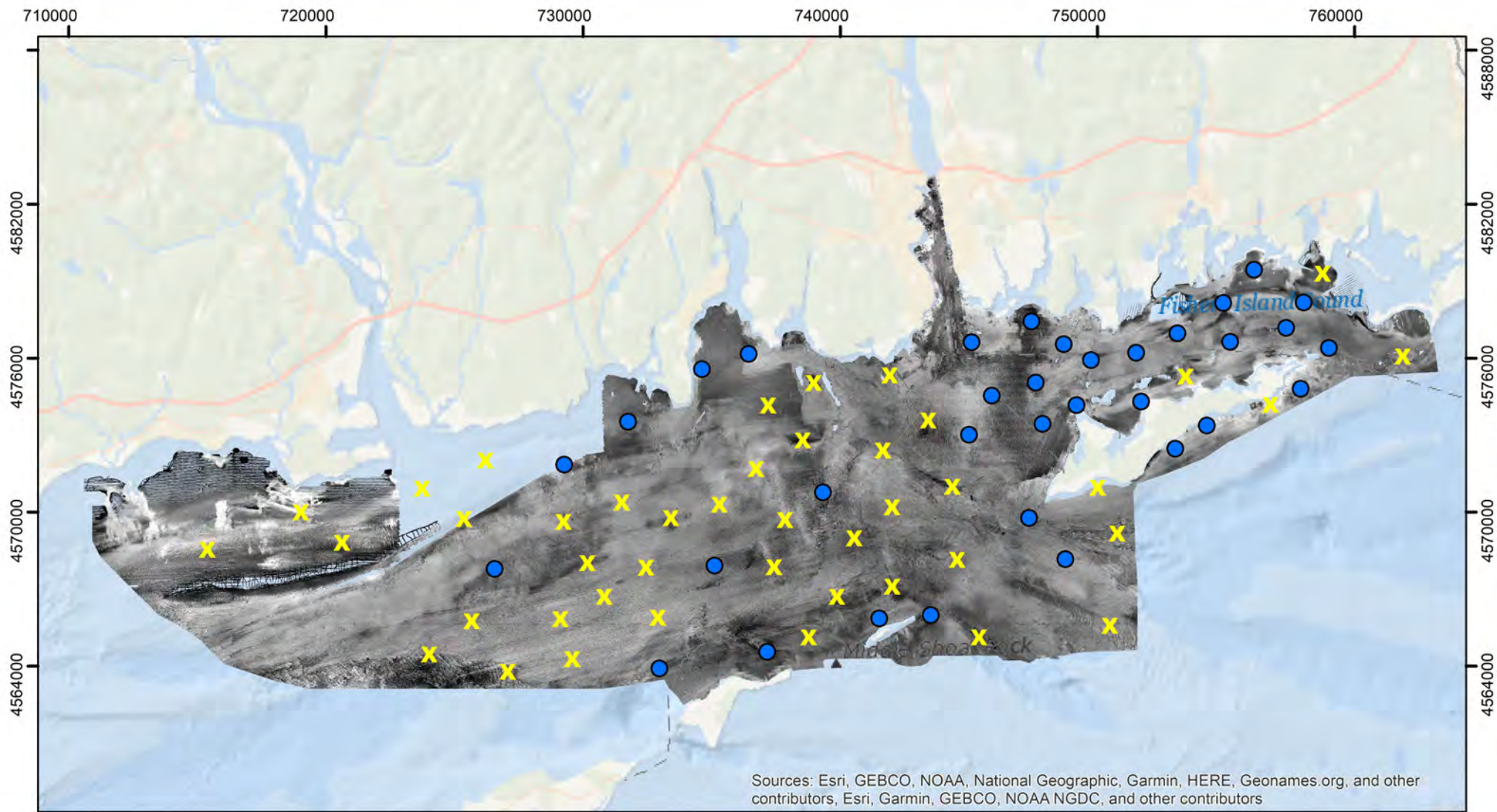


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983

0 1 2 4 6 8 Miles



LIS Cable Fund Mapping Phase 2: Fall 2017 and Spring 2018 Sponge - *Cliona spp.*

**Sponge
Percent Cover**



0



> 0 - 20



21 - 40



41 - 60



61 - 80



81 - 100

Multibeam Backscatter

High : 241



Low : 1

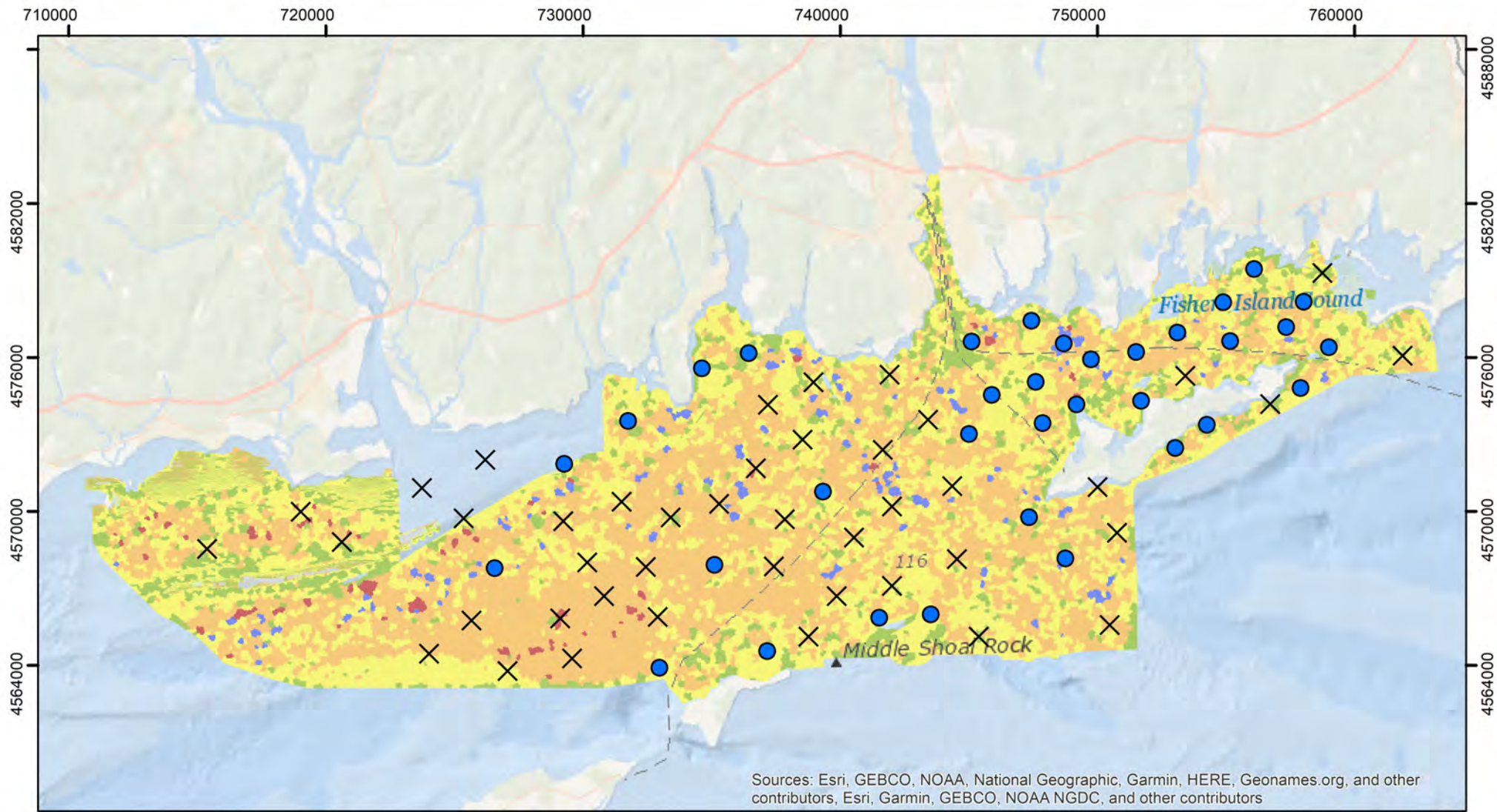


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: Fall 2017 and Spring 2018 Sponge - *Cliona spp.*



Sponge Percent Cover



0
> 0 - 20



21 - 40



41 - 60



61 - 80



81 - 100

eCognition Classification



A - Sandy Silt



B - Silty Sand



C - Gravel/Sand



D - Gravelly Sand



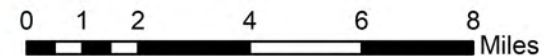
E - Sandy Gravel

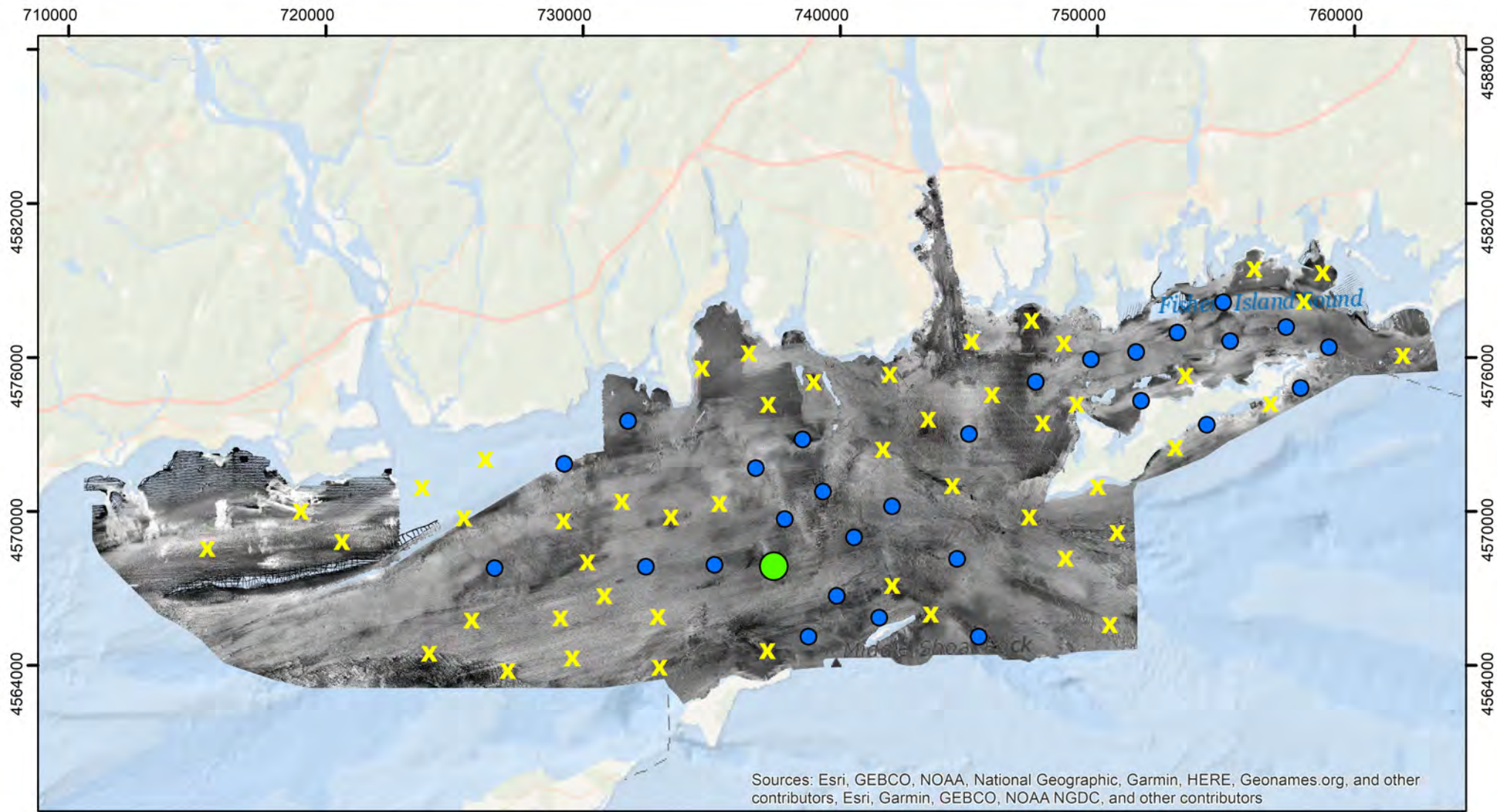


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: Fall 2017 and Spring 2018 Northern Star Coral- *Astrangia poculata*



**Northern star coral
Percent Cover**

- X 0
- > 0 - 20
- 21 - 40

41 - 60

61 - 80

81 - 100

Multibeam Backscatter

High : 241

Low : 1

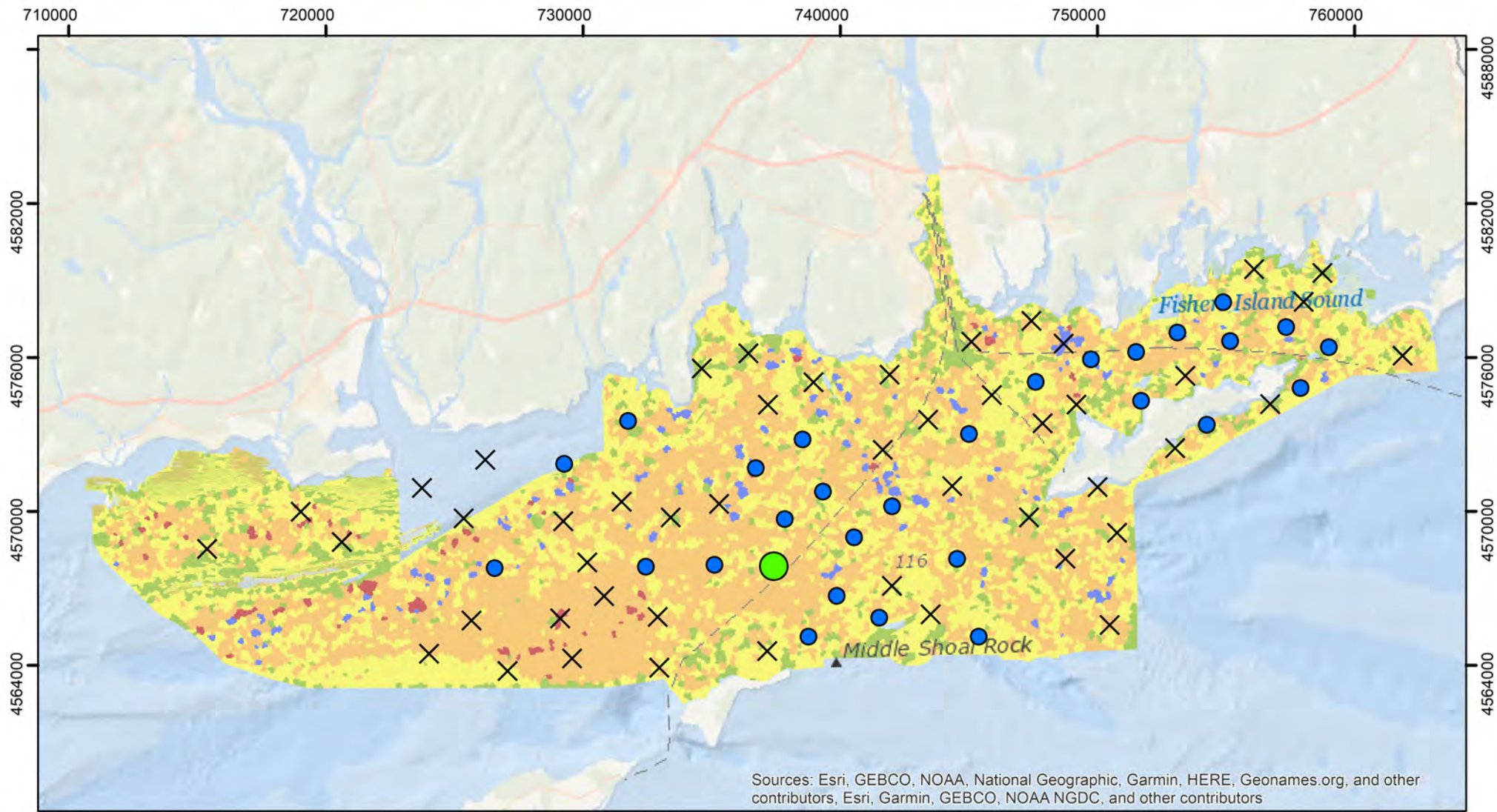


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983

0 1 2 4 6 8 Miles



LIS Cable Fund Mapping Phase 2: Fall 2017 and Spring 2018 Northern Star Coral- *Astrangia poculata*



Northern star coral Percent Cover

- X 0
- > 0 - 20
- 21 - 40

● 41 - 60

● 61 - 80

● 81 - 100

eCognition Classification

- A - Sandy Silt
- B - Silty Sand
- C - Gravel/Sand
- D - Gravelly Sand
- E - Sandy Gravel

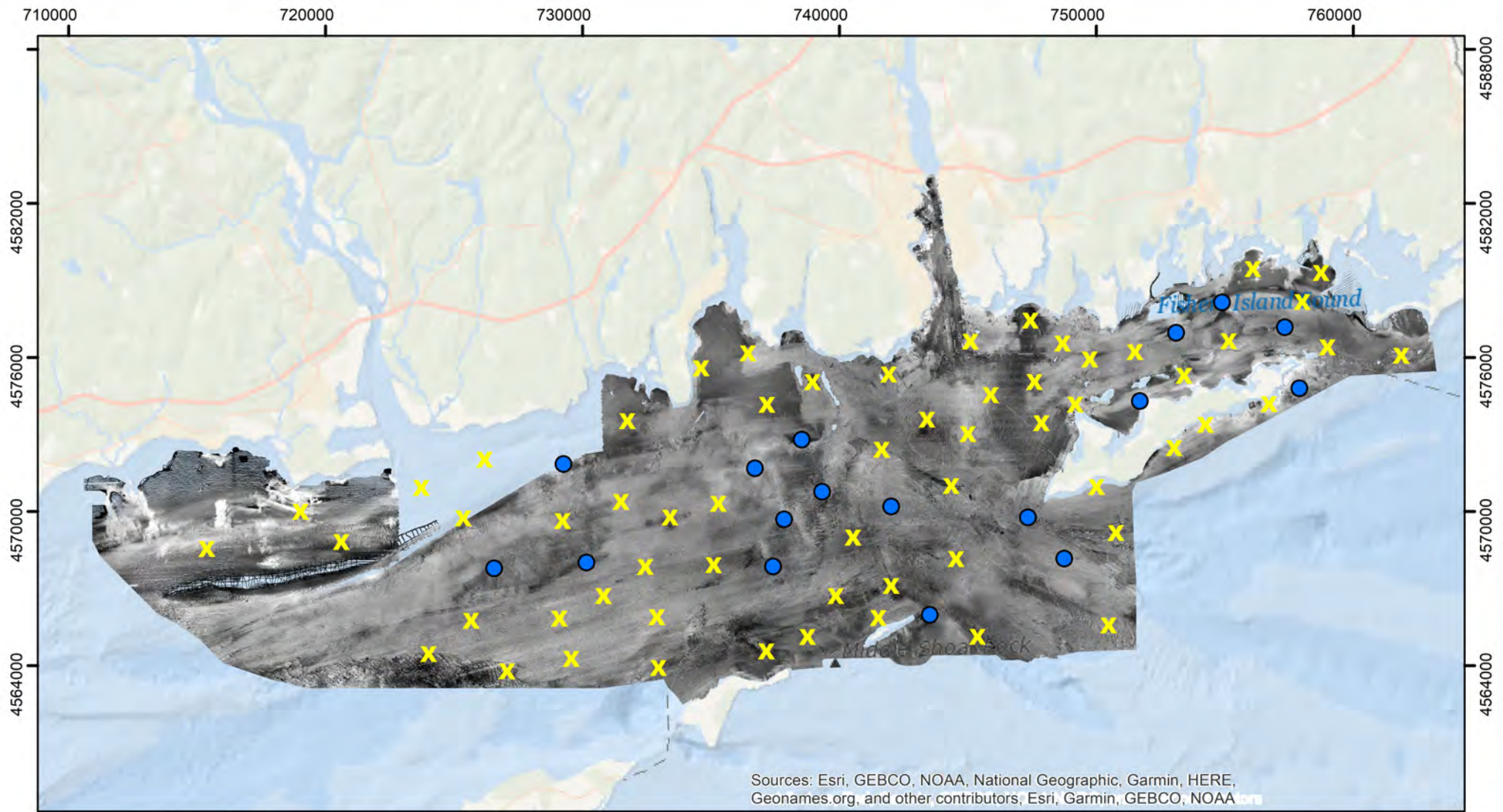


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983

0 1 2 4 6 8 Miles



LIS Cable Fund Mapping Phase 2: Fall 2017 and Spring 2018 Carpet tunicate- *Didemnum vexillum*



**Carpet tunicate
Percent Cover**



0
> 0 - 20



21 - 40



41 - 60



61 - 80



81 - 100

Multibeam Backscatter

High : 241



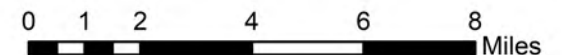
Low : 1

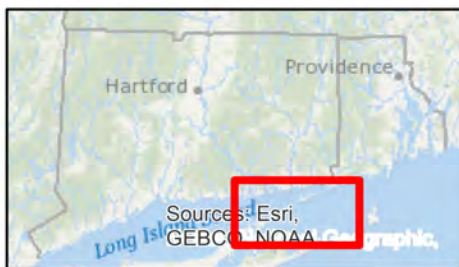
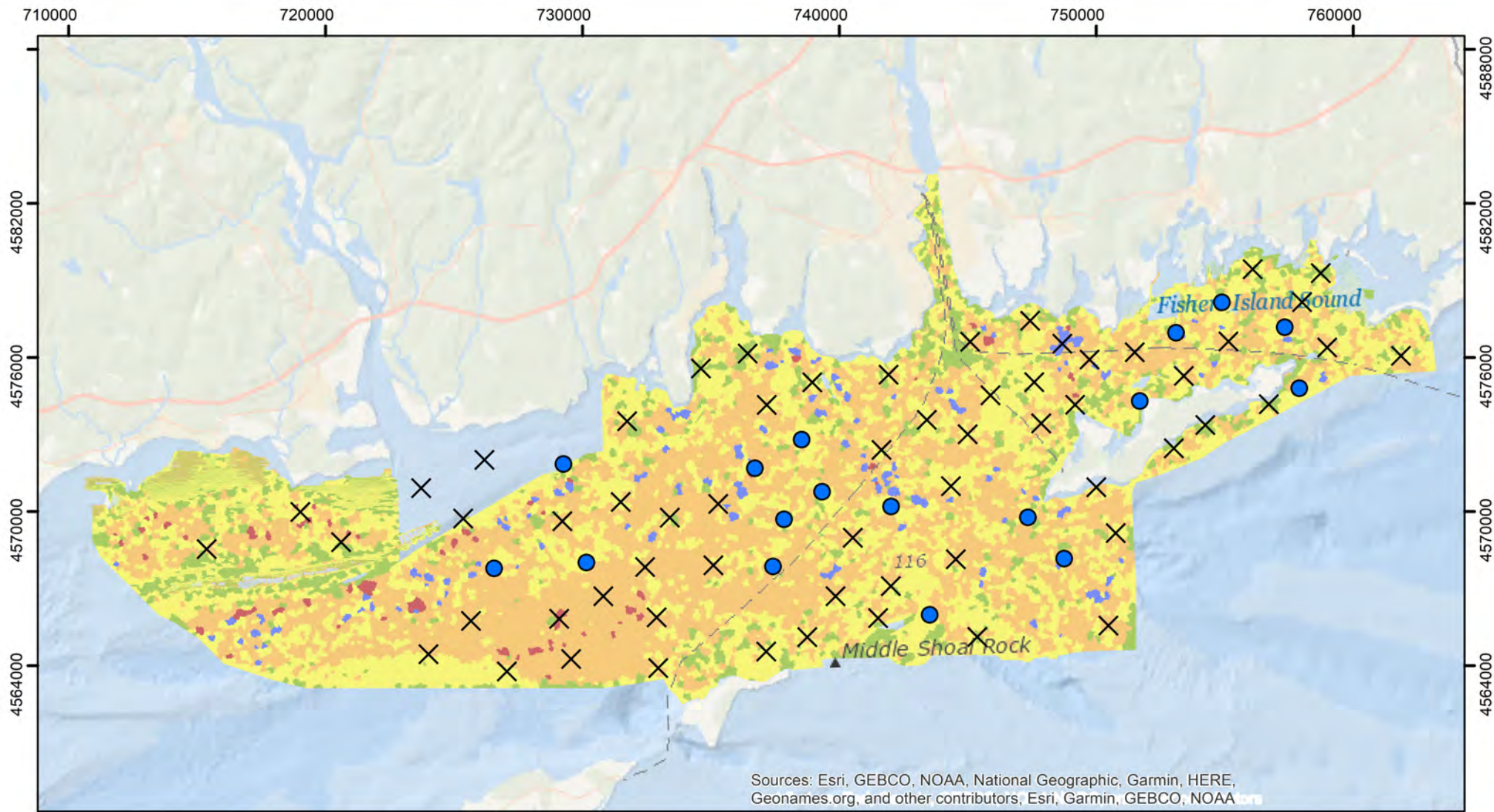


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: Fall 2017 and Spring 2018 Carpet tunicate- *Didemnum vexillum*



Carpet tunicate Percent Cover



0
> 0 - 20



21 - 40



41 - 60



61 - 80



81 - 100

eCognition Classification



A - Sandy Silt



B - Silty Sand



C - Gravel/Sand



D - Gravelly Sand



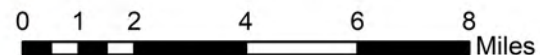
E - Sandy Gravel

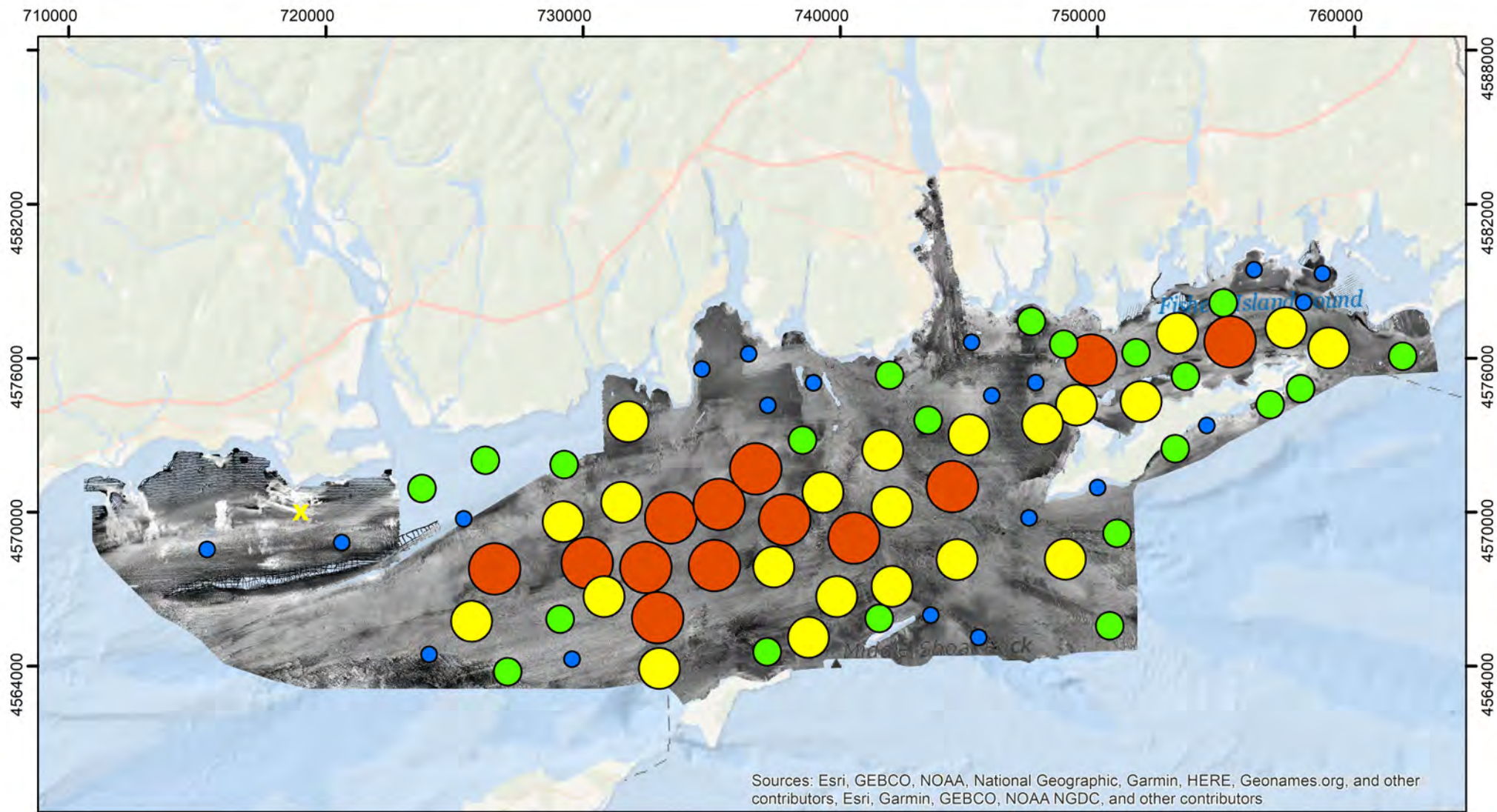


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: Fall 2017 and Spring 2018 Shells - Whole and Partial Vavles



Shells - Whole and Partial Valves

Percent Cover

- X 0
- > 0 - 20
- 2 - 40

- 41 - 60
- 61 - 80
- 81 - 100

Multibeam Backscatter

High : 241
Low : 1

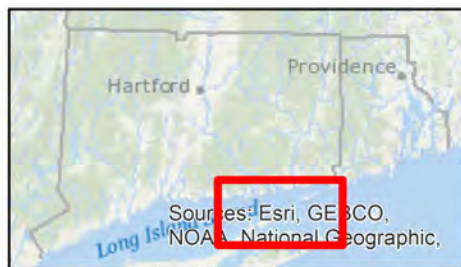
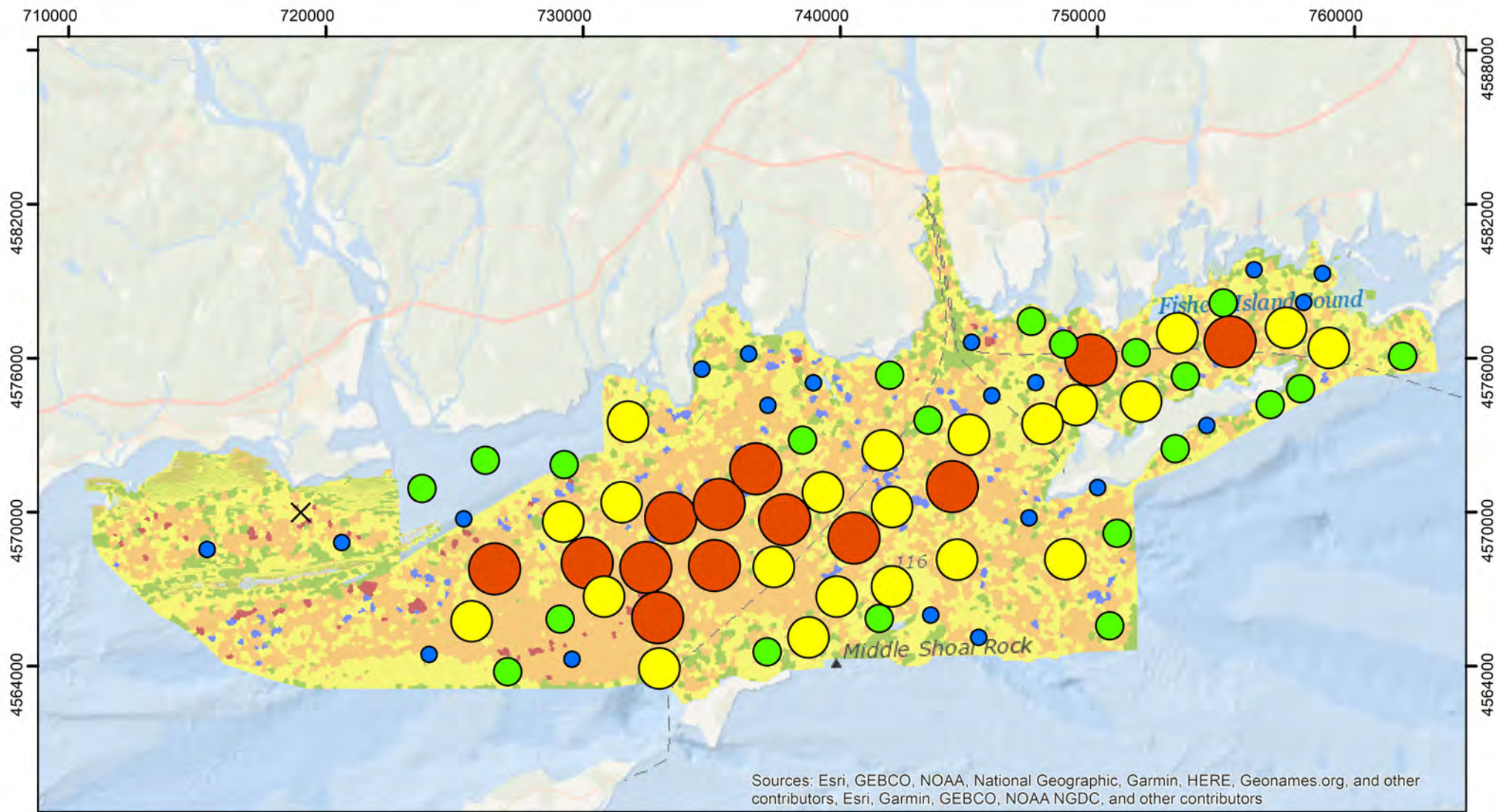


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983

0 1 2 4 6 8 Miles

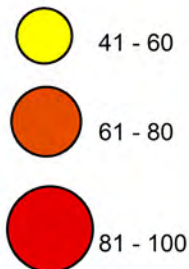
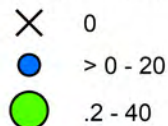


LIS Cable Fund Mapping Phase 2: Fall 2017 and Spring 2018 Shells - Whole and Partial Vavles



Shells - Whole and Partial Valves

Percent Cover



eCognition Classification

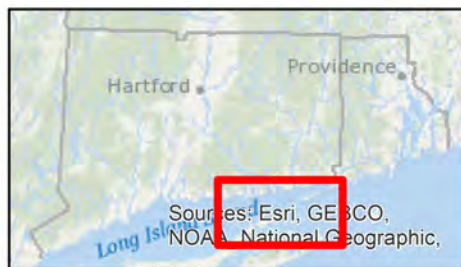
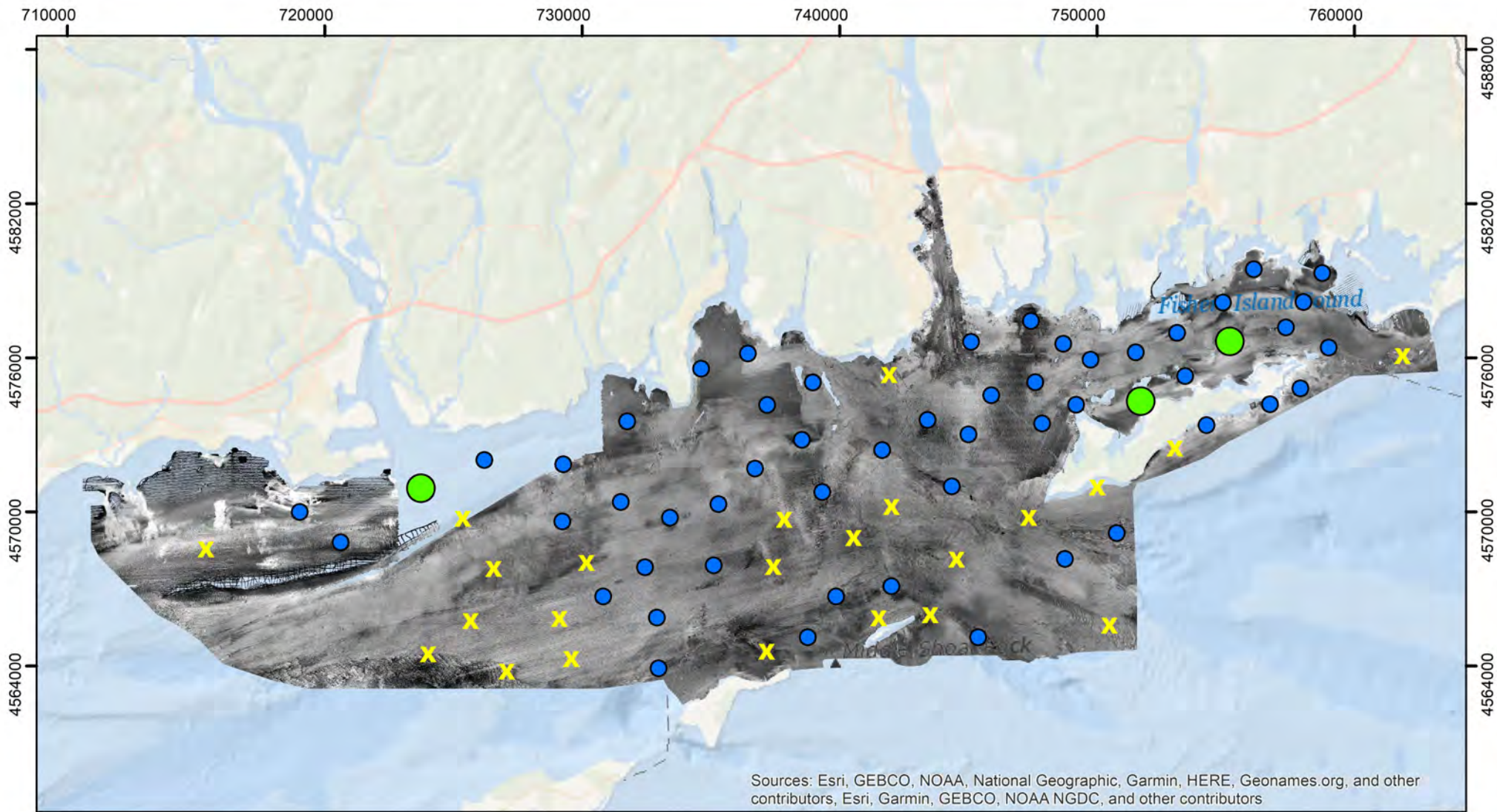


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

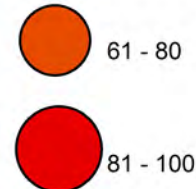
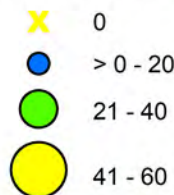
Horizontal Coordinate System UTM Zone 18N, NAD 1983



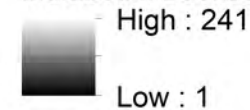


LIS Cable Fund Mapping Phase 2: Fall 2017 and Spring 2018 *Zostera* Debris

**Zostera
Percent Cover**



Multibeam Backscatter

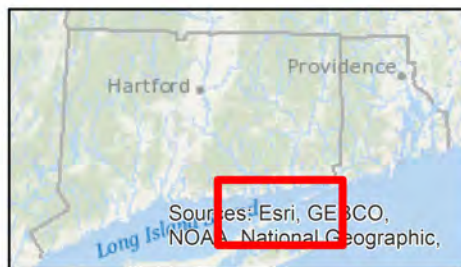
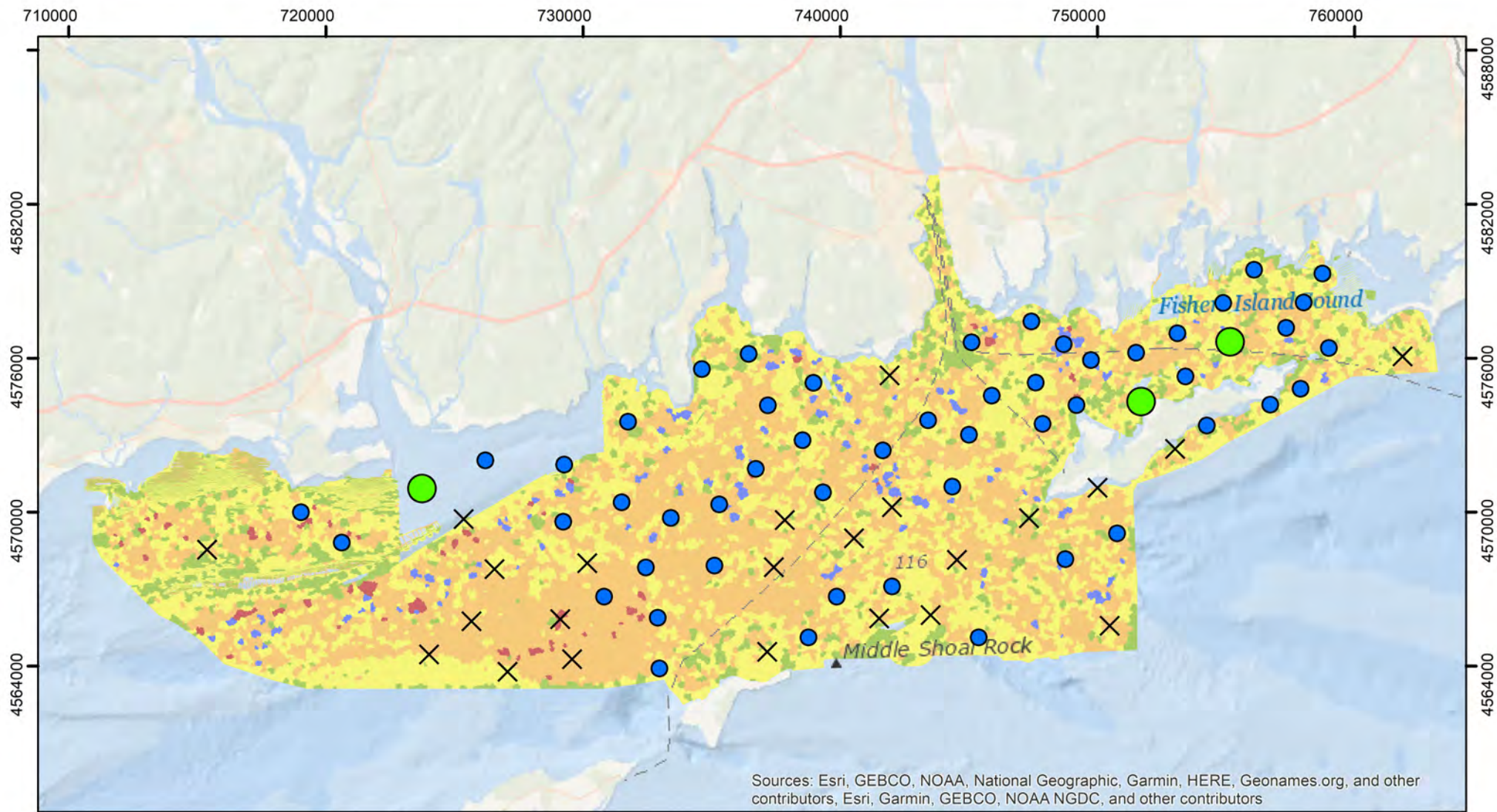


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

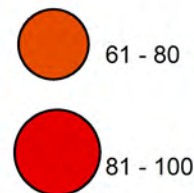
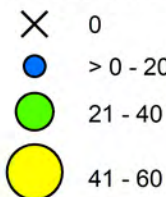
Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: Fall 2017 and Spring 2018 *Zostera* Debris

Zostera Percent Cover



eCognition Classification

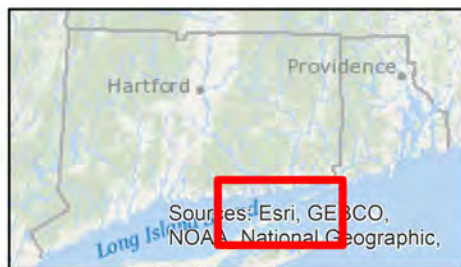
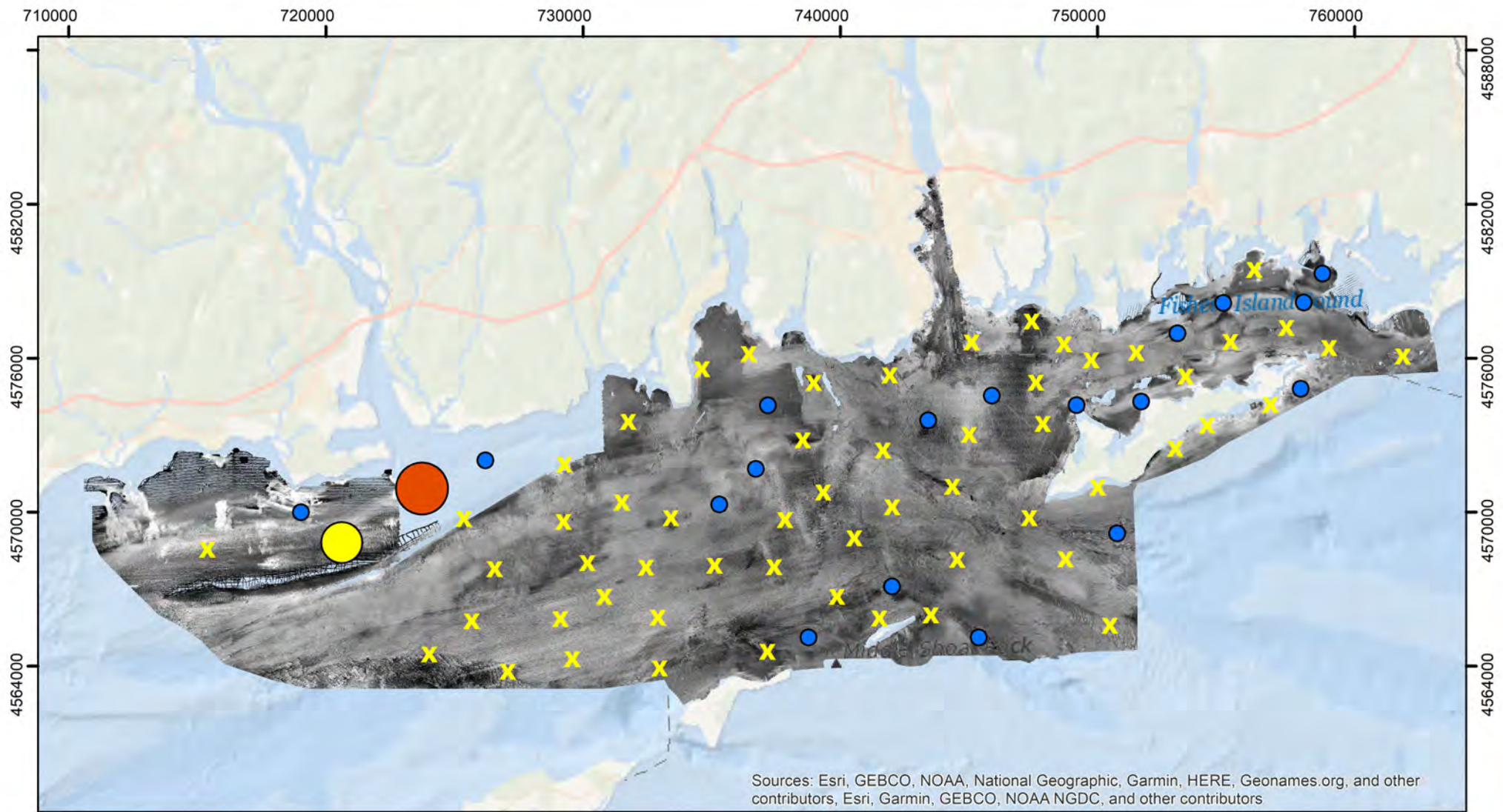


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: Fall 2017 and Spring 2018 Terrestrial Debris

**Terrestrial Debris
Percent Cover**

- X 0
- > 0 - 20
- 21 - 40
- 41 - 60

- 61 - 80
- 81 - 100

Multibeam Backscatter

High : 241
Low : 1

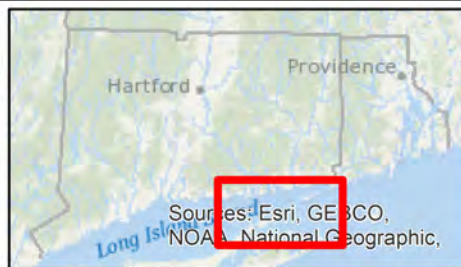
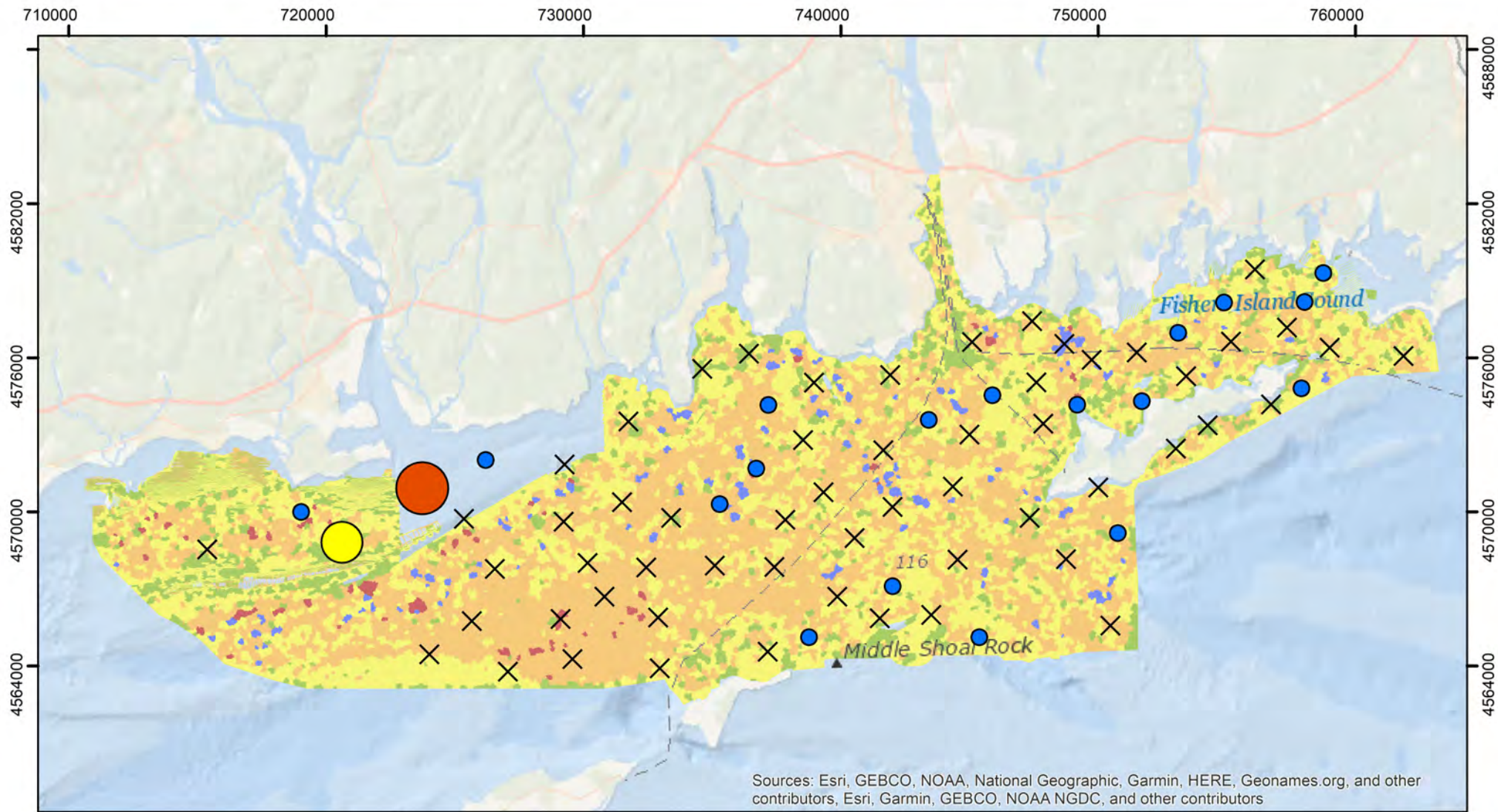


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

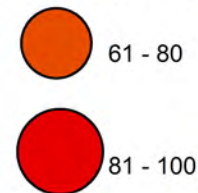
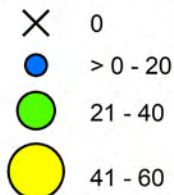
Horizontal Coordinate System UTM Zone 18N, NAD 1983

0 1 2 4 6 8 Miles



LIS Cable Fund Mapping Phase 2: Fall 2017 and Spring 2018 Terrestrial Debris

Terrestrial Debris Percent Cover



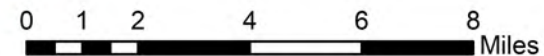
eCognition Classification

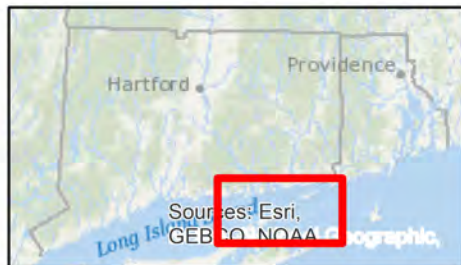
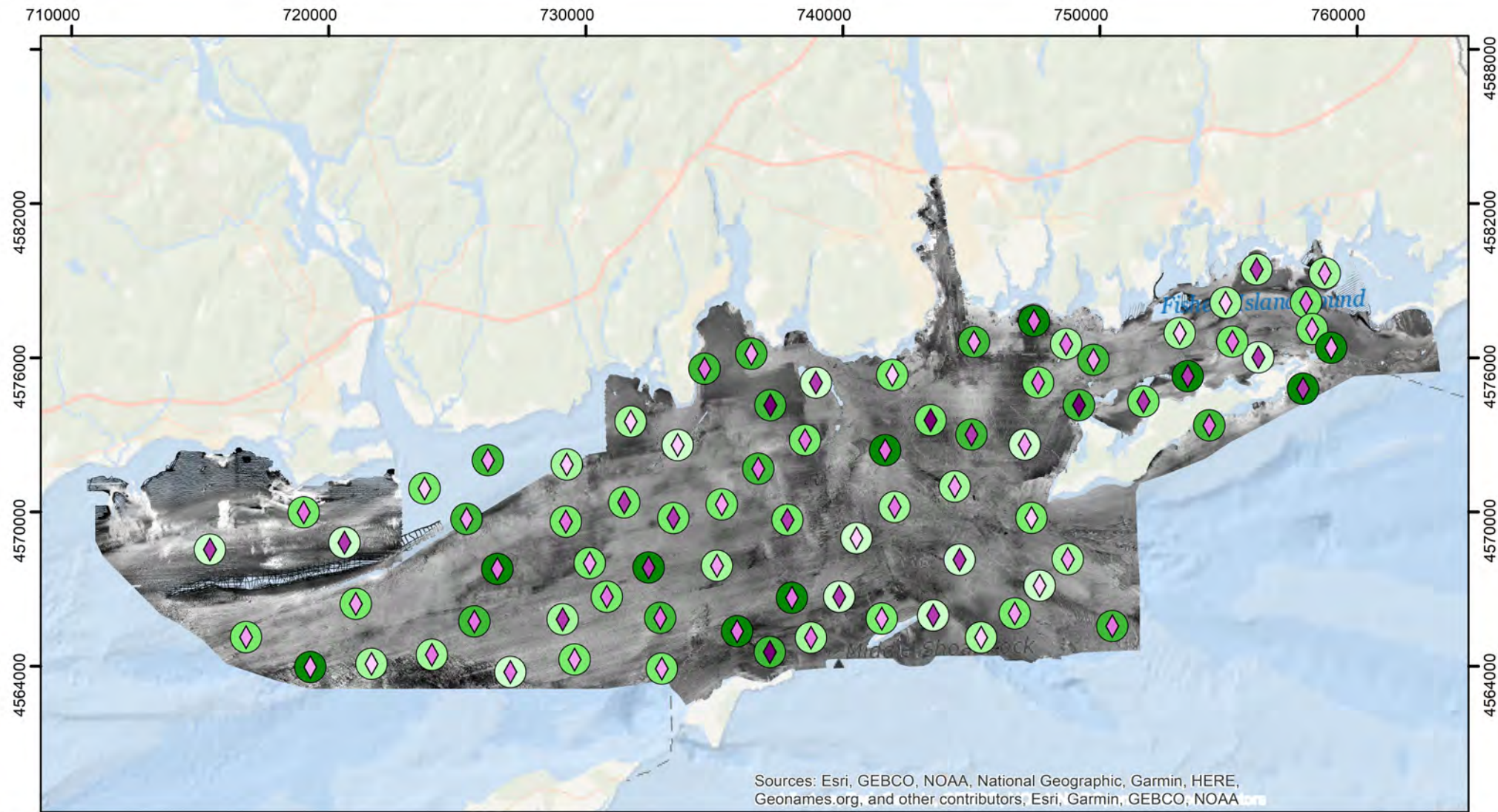


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: Taxonomic Richness

Infauna

- 0 - 10
- 11 - 19
- 20 - 29
- 30 - 38
- 39 - 47

Epifauna

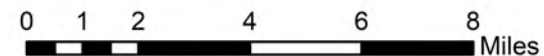
- ◆ 1.00 - 2.98
- ◆ 2.99 - 4.96
- ◆ 4.97 - 6.94
- ◆ 6.95 - 8.92
- ◆ 8.93 - 10.90

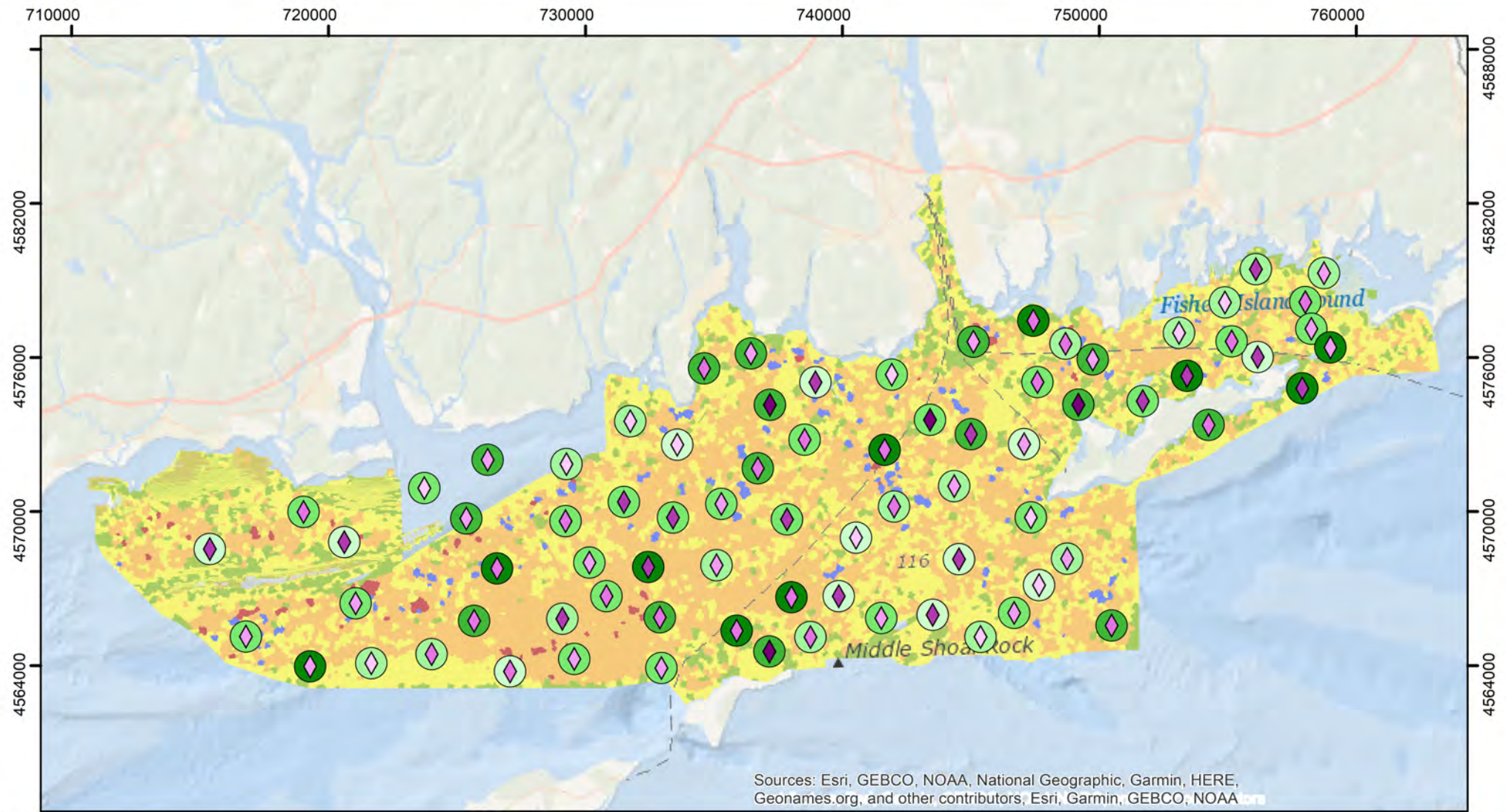


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983





LIS Cable Fund Mapping Phase 2: Taxonomic Richness

Infauna

- 0 - 10
- 11 - 19
- 20 - 29
- 30 - 38
- 39 - 47

Epifauna

- 1.00 - 2.98
- 2.99 - 4.96
- 4.97 - 6.94
- 6.95 - 8.92
- 8.93 - 10.90

eCognition Classification

- A - Sandy Silt
- B - Silty Sand
- C - Gravel/Sand
- D - Gravelly Sand
- E - Sandy Gravel

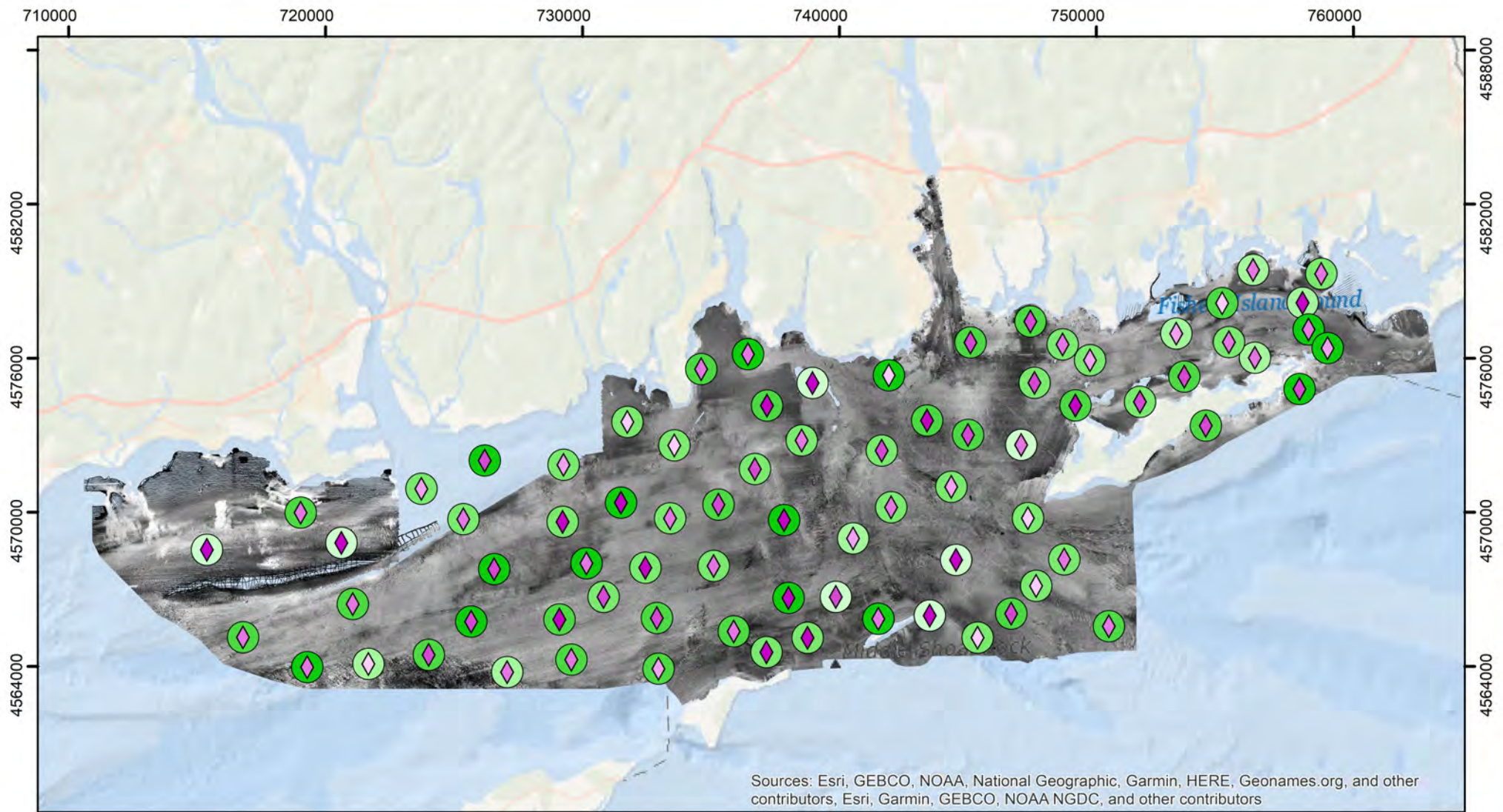


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983

0 1 2 4 6 8 Miles

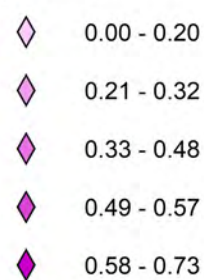


LIS Cable Fund Mapping Phase 2: Diversity (Log H)

Infauna



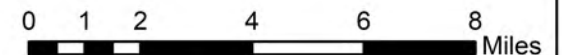
Epifauna

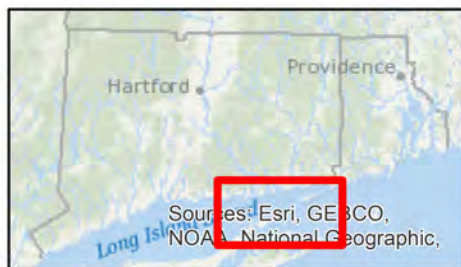
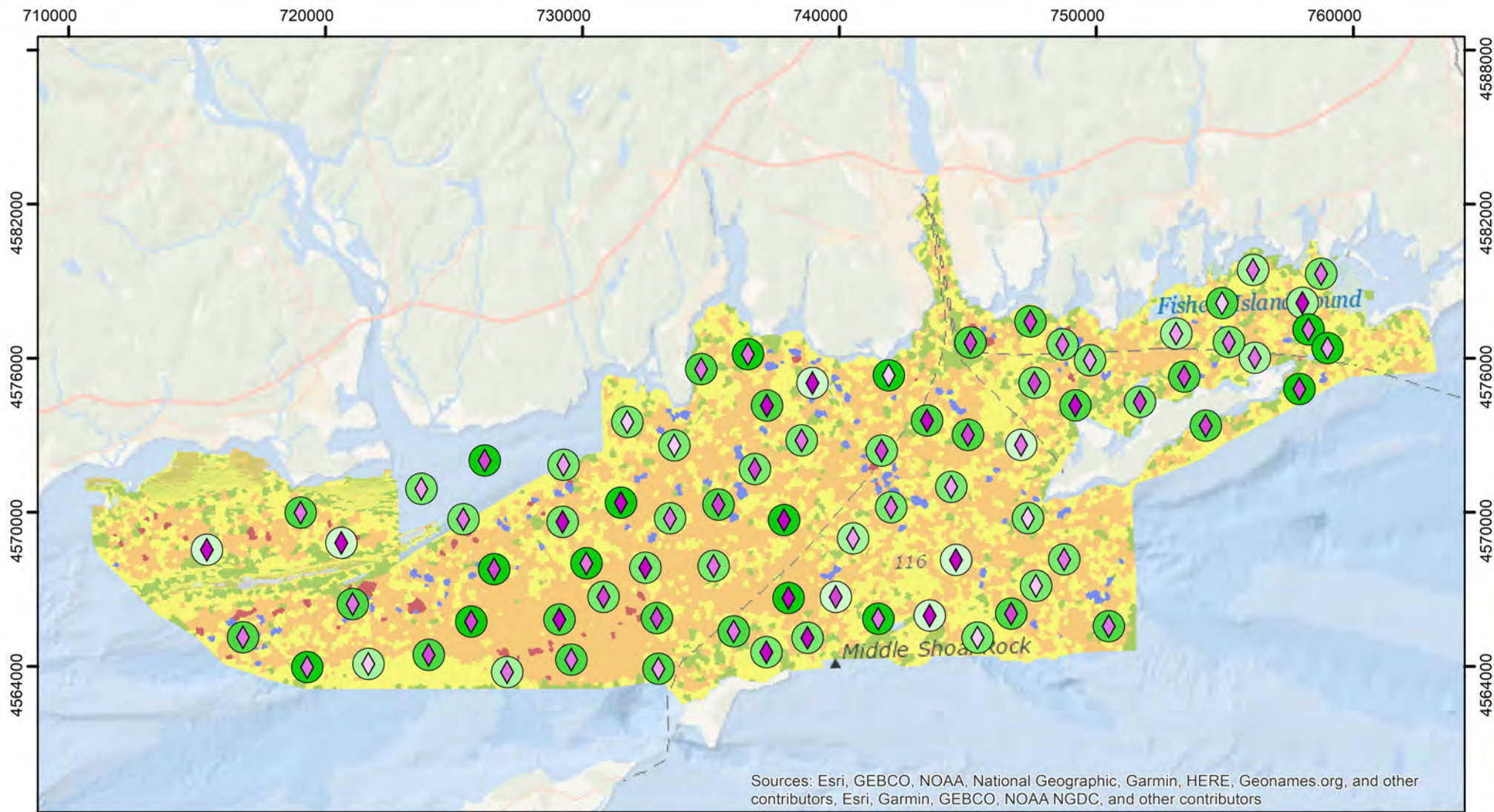


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

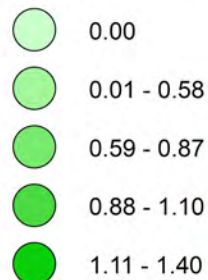
Horizontal Coordinate System UTM Zone 18N, NAD 1983



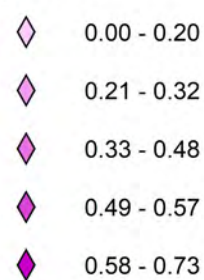


LIS Cable Fund Mapping Phase 2: Diversity (Log H)

Infauna



Epifauna



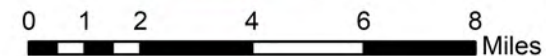
eCognition Classification



Project supported by the US EPA Long Island Sound Study. For information and a full list of partners, please visit:

<https://lismap.uconn.edu/>

Horizontal Coordinate System UTM Zone 18N, NAD 1983



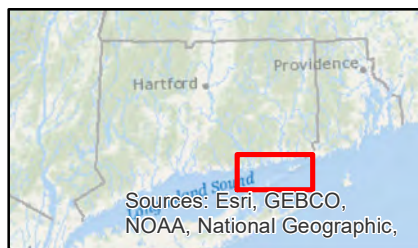
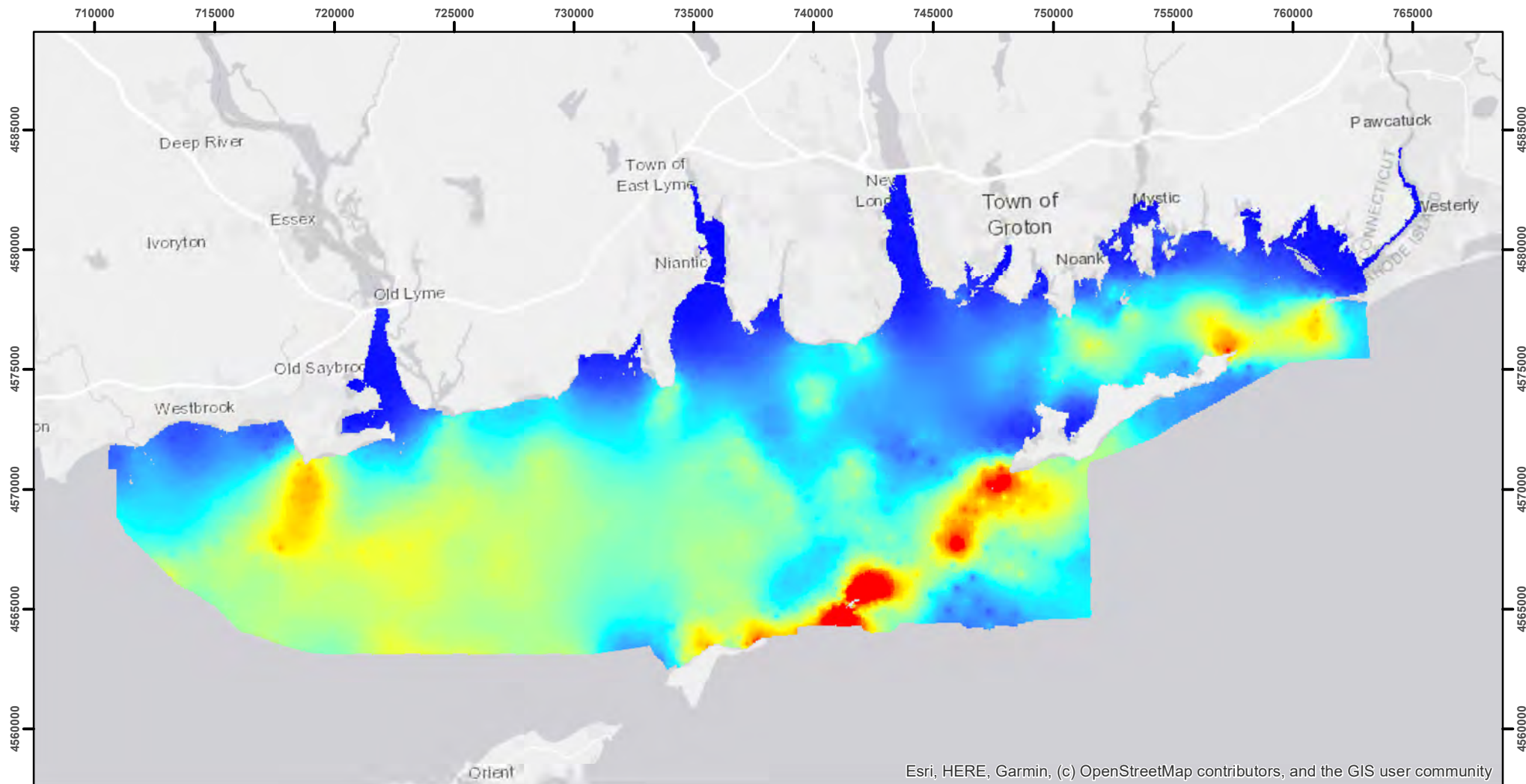
Appendix 1-5: Physical Oceanographic Characterization

Appendix 1-5-1 Bottom stress maps

Appendix 1-5-2 Bottom current maps

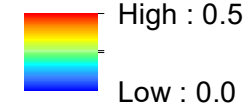
Appendix 1-5-3 Bottom temperature maps

Appendix 1-5-4 Bottom salinity maps



LIS Cable Fund Mapping Phase 2: Physical Characterization: Bottom Stress - Tidal Mean

**Mean Tidal Stress [Pa]
Value**

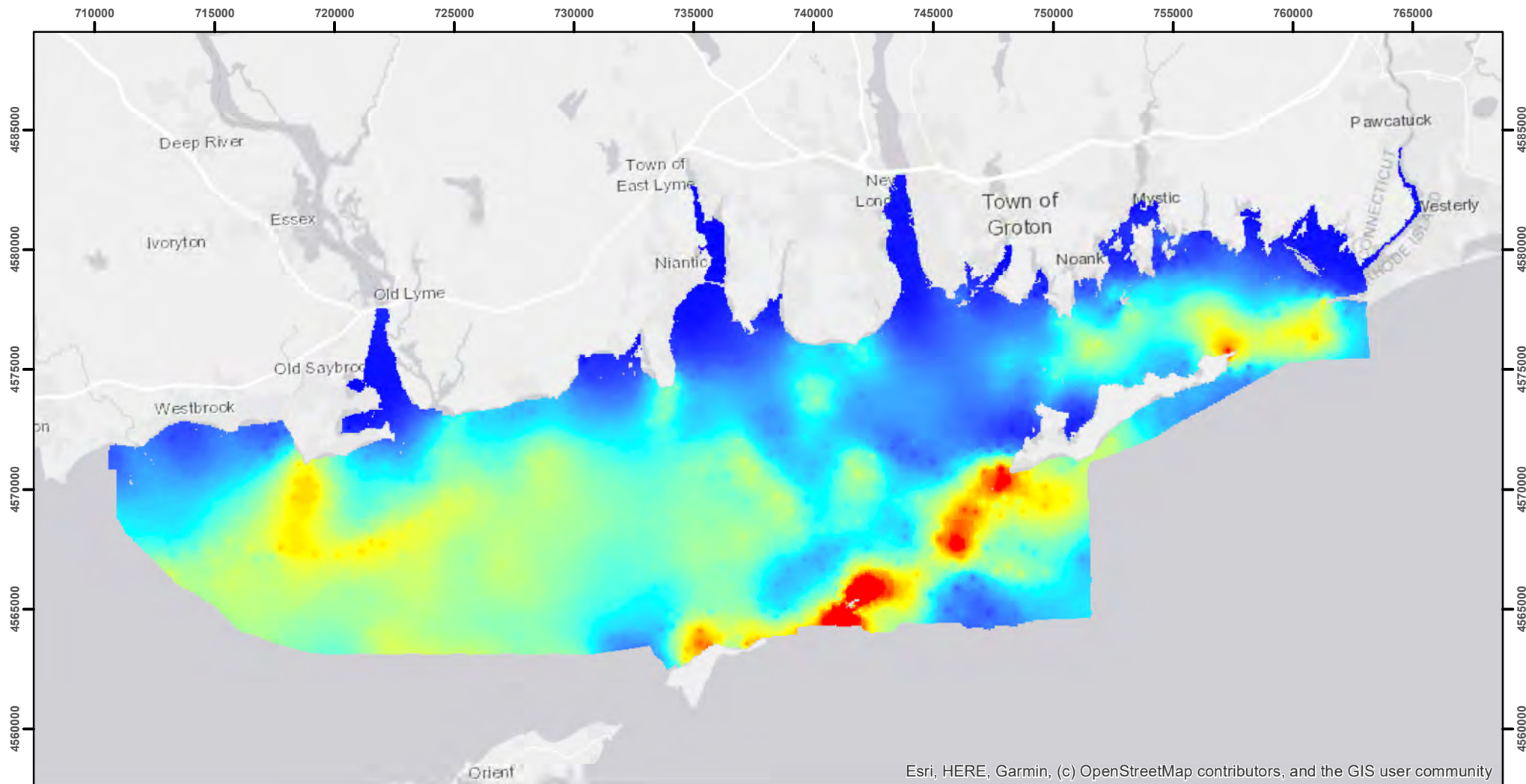


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:

<https://lismap.uconn.edu>

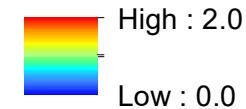
Horizontal Coordinate System: UTM Zone 18,NAD83

0 1.25 2.5 5 7.5 10 Miles



LIS Cable Fund Mapping Phase 2: Physical Characterization: Bottom Stress - Maximum Tidal

Maximum Tidal Stress Value

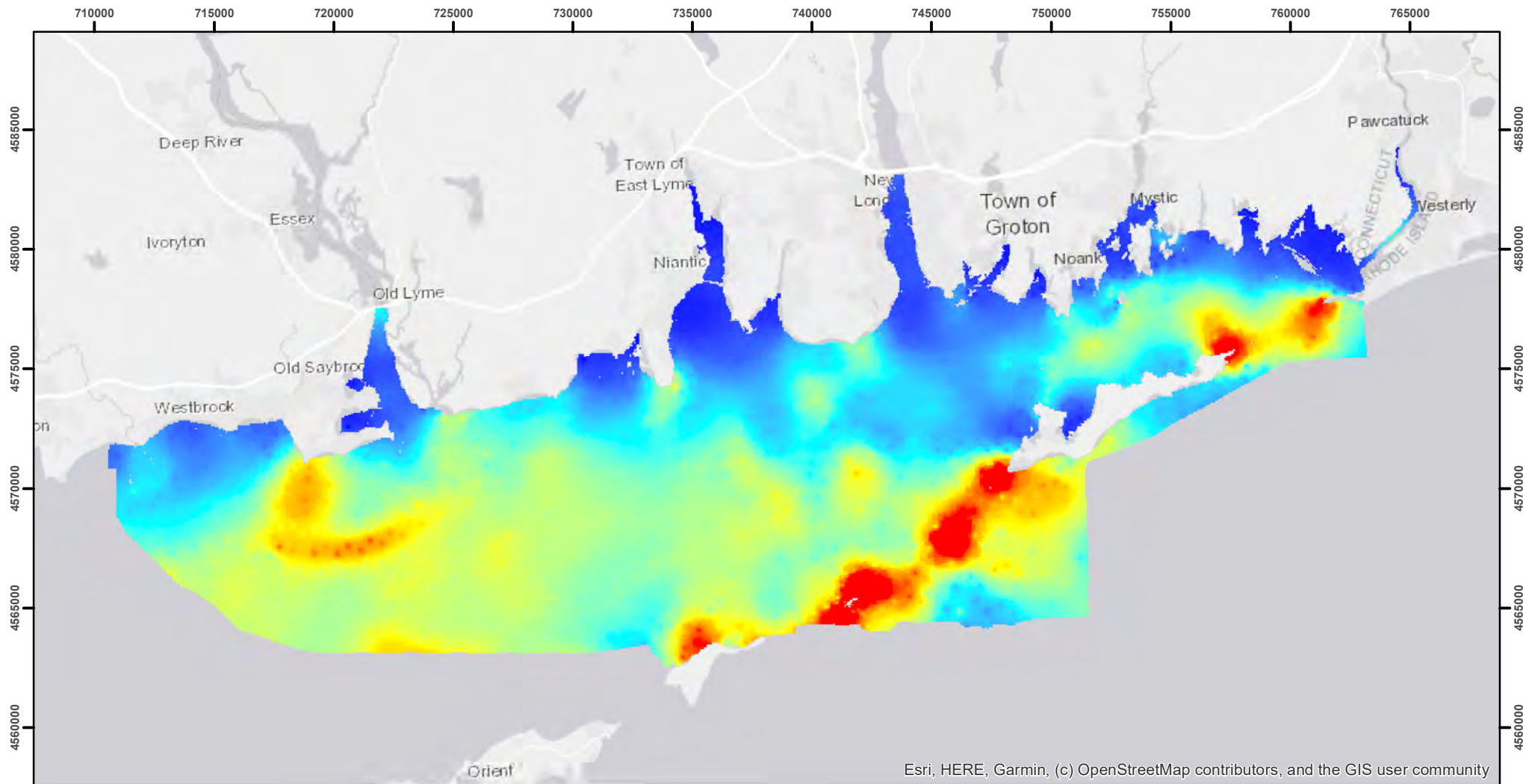


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:

<https://lismap.uconn.edu>

Horizontal Coordinate System: UTM Zone 18,NAD83

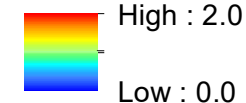
0 1.25 2.5 5 7.5 10 Miles



LIS Cable Fund Mapping Phase 2: Physical Characterization: Bottom Stress - 2017 Maximum

Maximum Stress [Pa]

Value

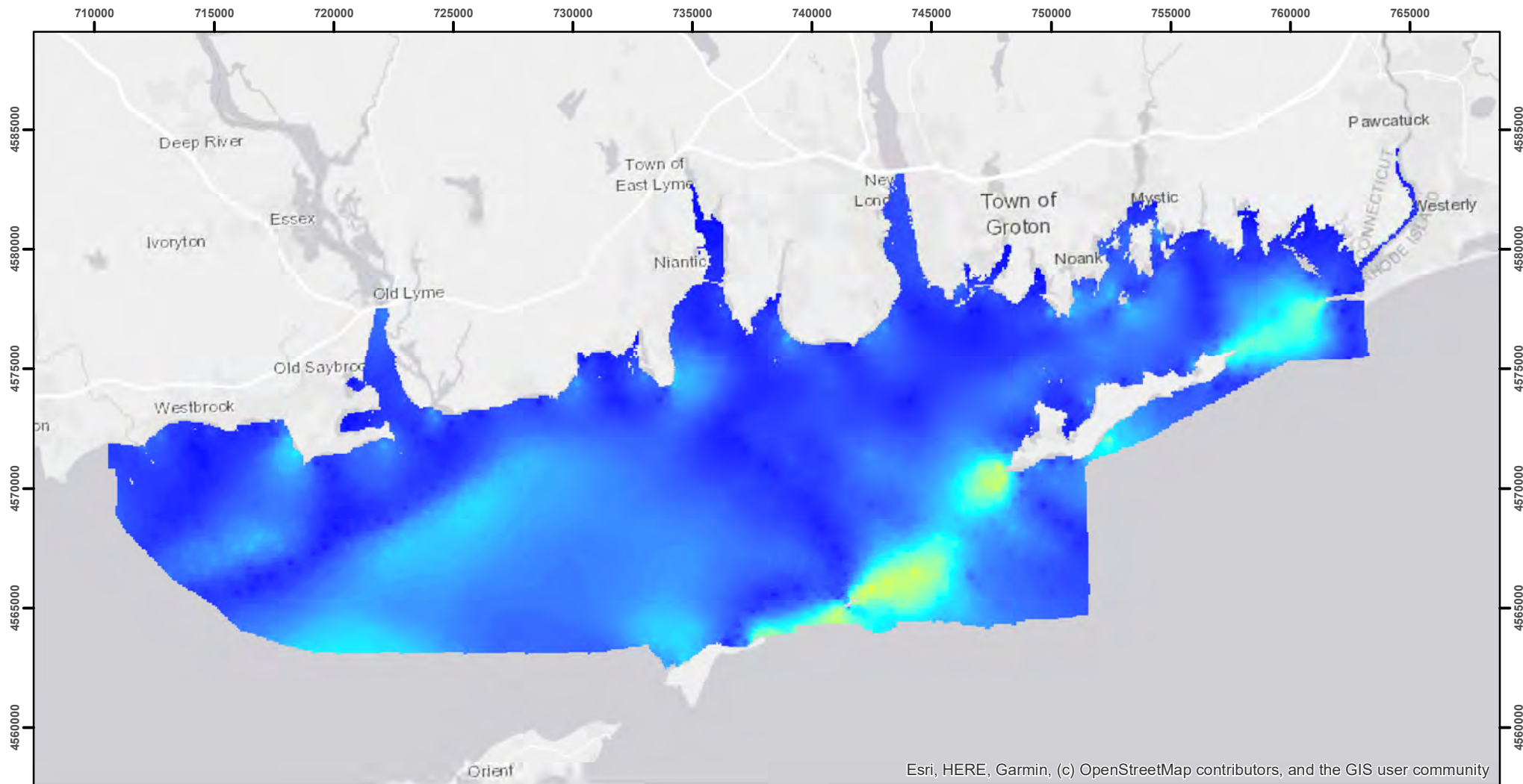


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:

<https://lismap.uconn.edu>

Horizontal Coordinate System: UTM Zone 18,NAD83

0 1.25 2.5 5 7.5 10 Miles



LIS Cable Fund Mapping Phase 2: Physical Characterization: DA Currents - Tidal v amplitude

M2 v amp (N-S) [m/s]

Value



High : 1

Low : 0

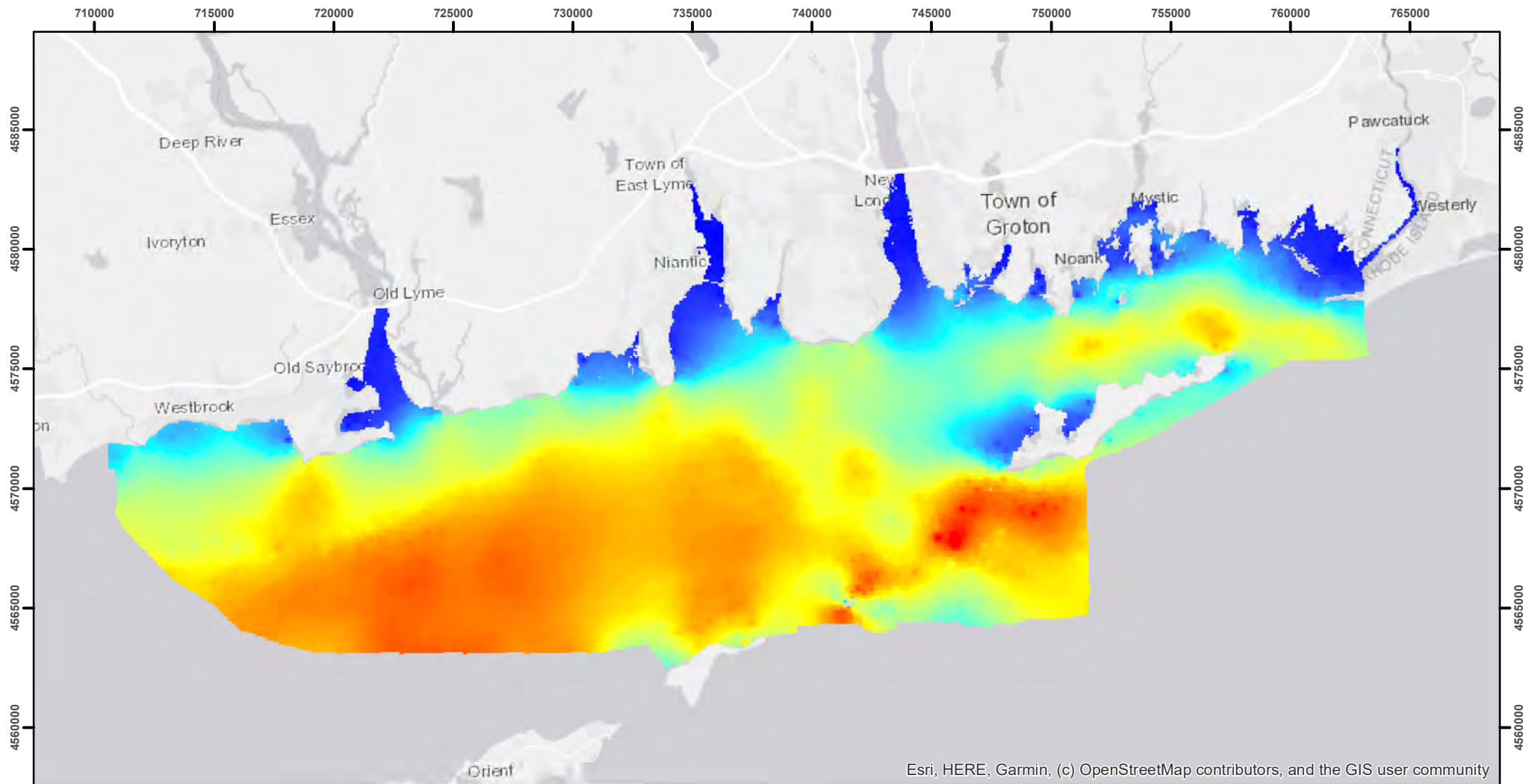


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:

<https://lismap.uconn.edu>

Horizontal Coordinate System: UTM Zone 18,NAD83

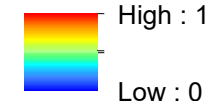
0 1.25 2.5 5 7.5 10 Miles



LIS Cable Fund Mapping Phase 2: Physical Characterization: DA Currents - Tidal u amplitude

M2 u amp (E-W) [m/s]

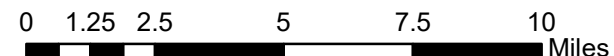
Value

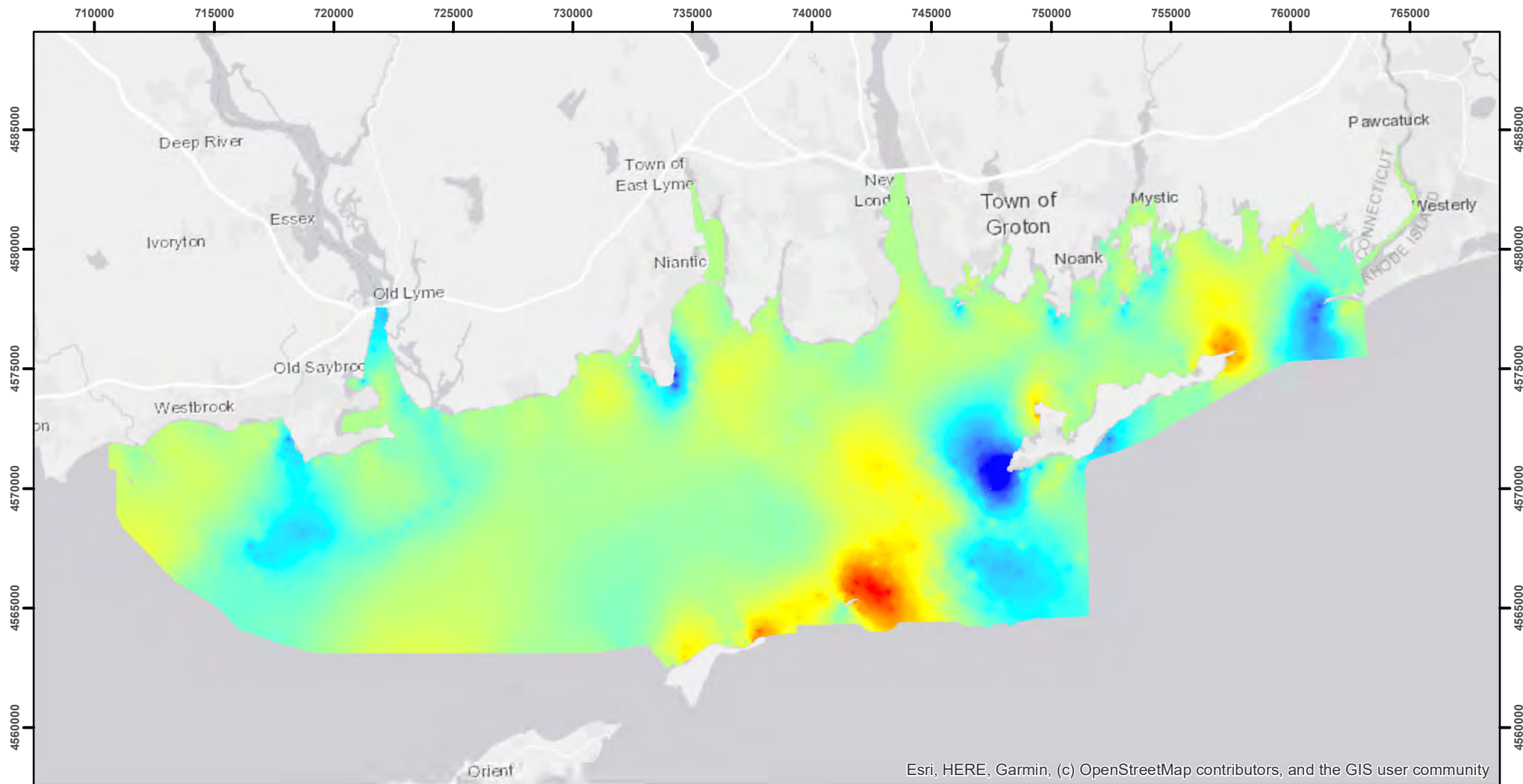


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:

<https://lismap.uconn.edu>

Horizontal Coordinate System: UTM Zone 18,NAD83

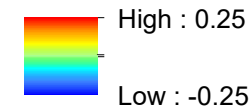




LIS Cable Fund Mapping Phase 2: Physical Characterization: DA Currents - Subtidal v

subtidal v (N+) [m/s]

Value

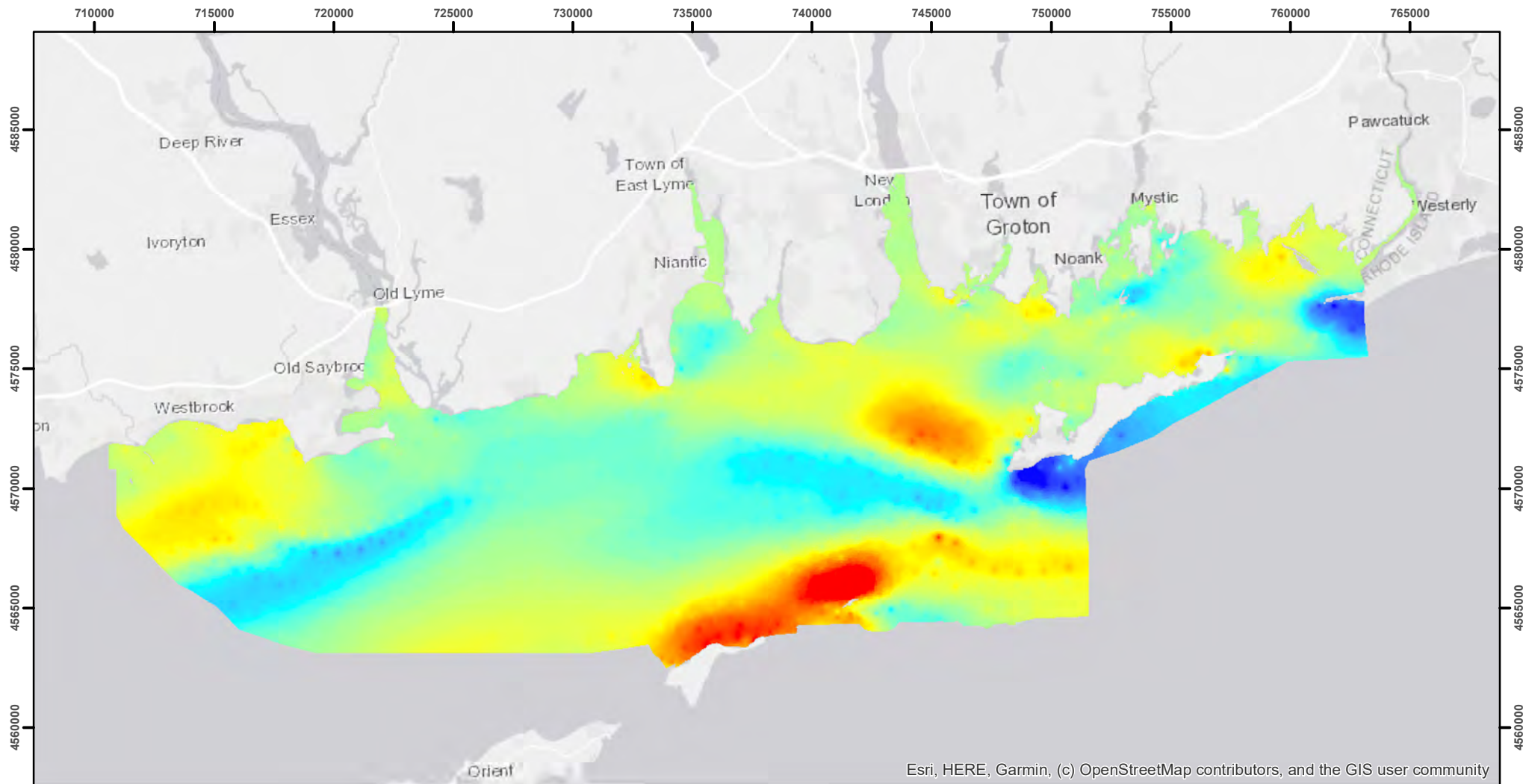


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:

<https://lismap.uconn.edu>

Horizontal Coordinate System: UTM Zone 18,NAD83

0 1.25 2.5 5 7.5 10 Miles



LIS Cable Fund Mapping Phase 2: Physical Characterization: DA Currents - Subtidal u

Subtidal u (E+) [m/s]

Value



High : 0.25

Low : -0.25

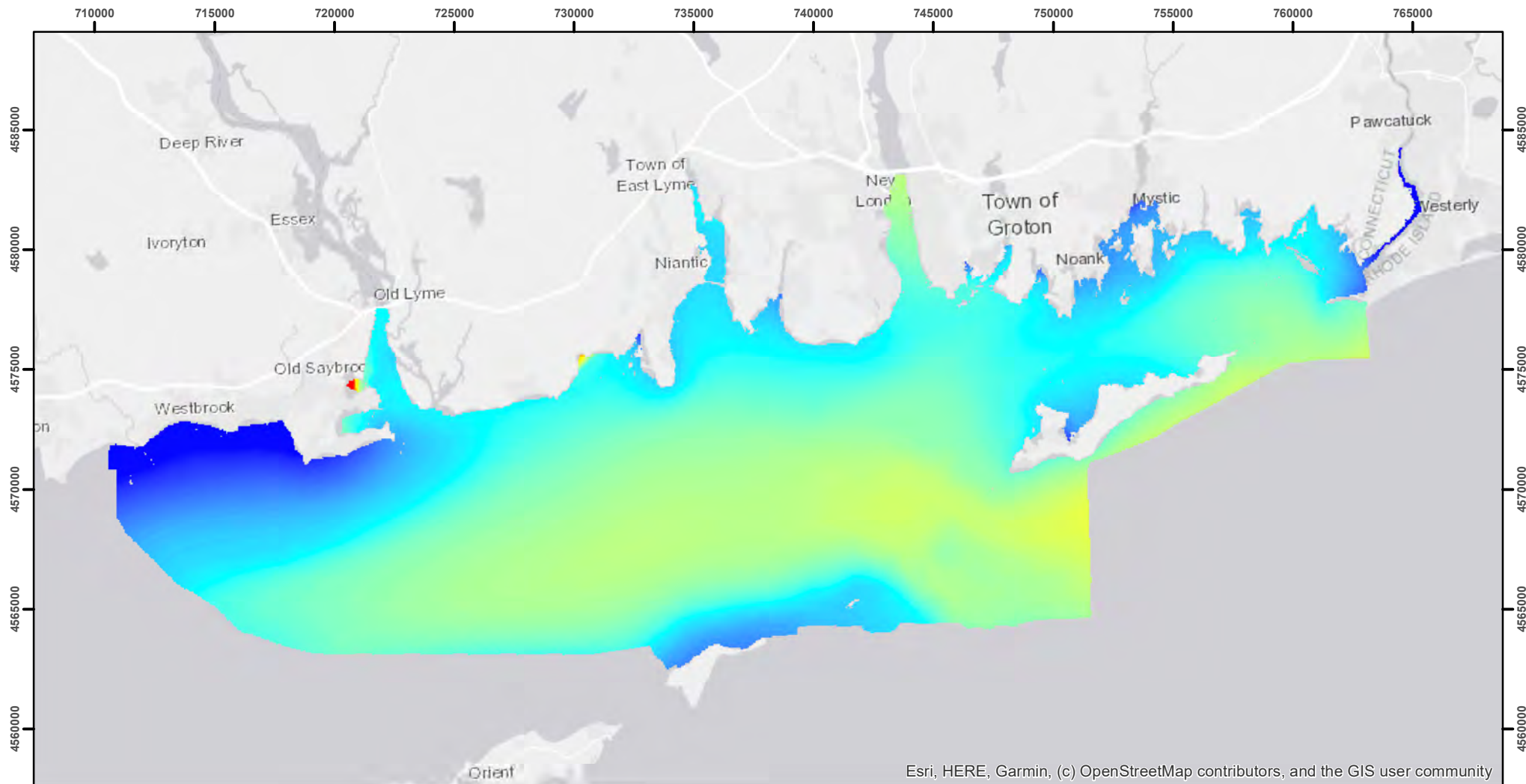


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:

<https://lismap.uconn.edu>

Horizontal Coordinate System: UTM Zone 18,NAD83

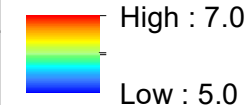
0 1.25 2.5 5 7.5 10 Miles



LIS Cable Fund Mapping Phase 2: Physical Characterization: Bottom Temperature - Mean Jan

Mean NB Temp Jan [oC]

Value

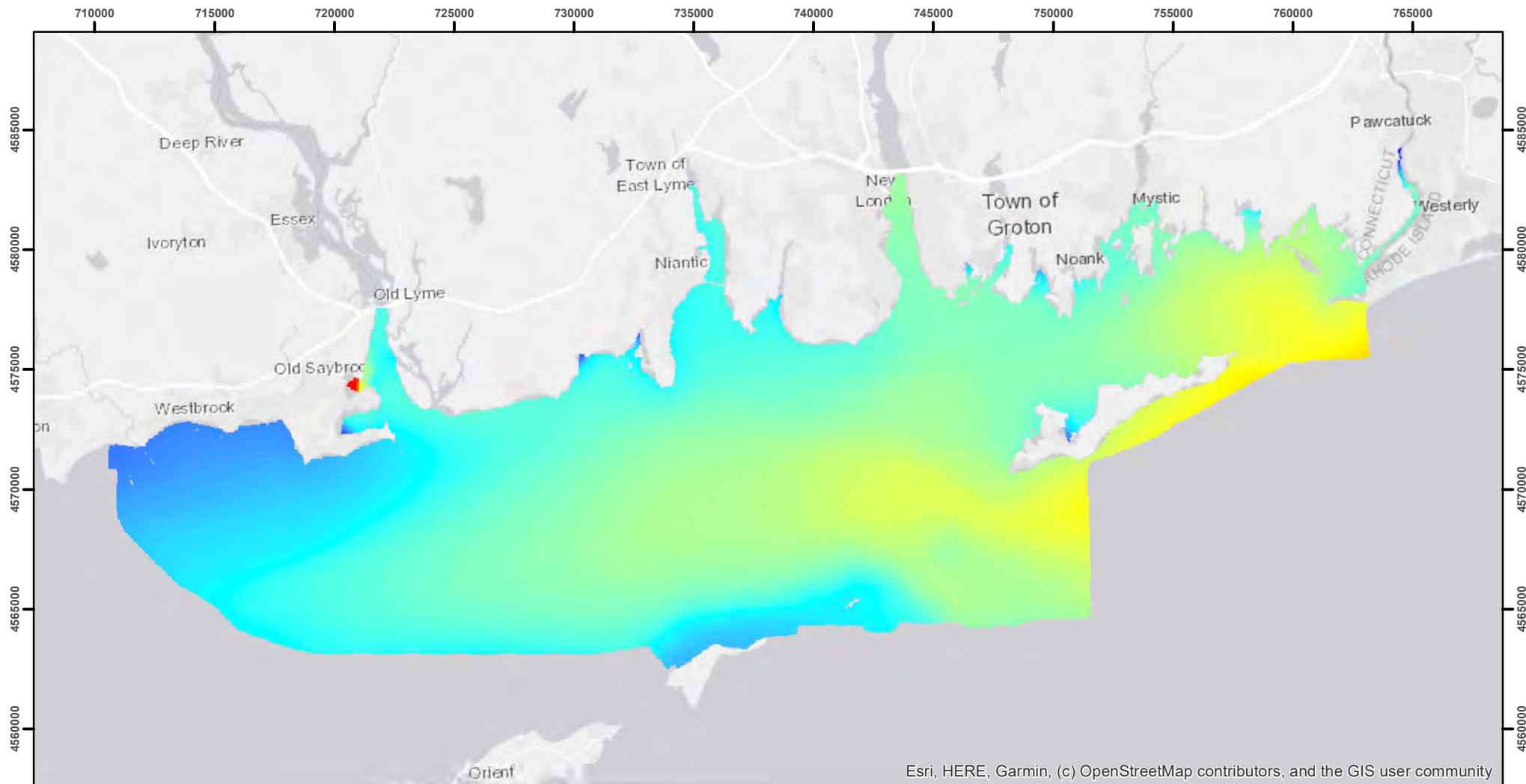


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:

<https://lismap.uconn.edu>

Horizontal Coordinate System: UTM Zone 18,NAD83

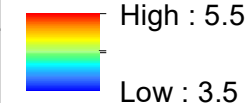
0 1.25 2.5 5 7.5 10 Miles



LIS Cable Fund Mapping Phase 2: Physical Characterization: Bottom Temperature - Mean Feb

Mean NB Temp Feb [oC]

Value

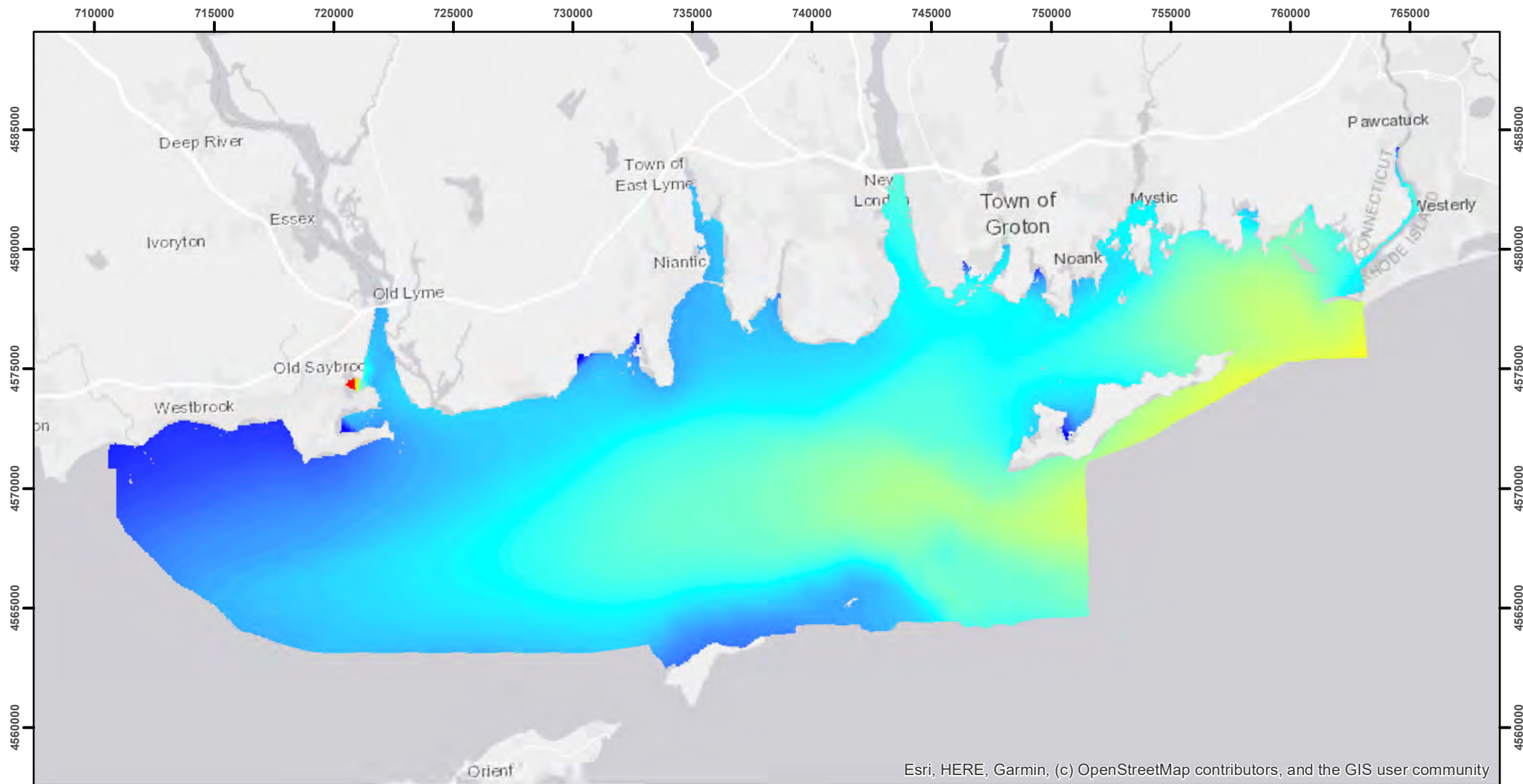


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:

<https://lismap.uconn.edu>

Horizontal Coordinate System: UTM Zone 18,NAD83

0 1.25 2.5 5 7.5 10 Miles



LIS Cable Fund Mapping Phase 2: Physical Characterization: Bottom Temperature - Mean March

Mean NB Temp Mar [oC]

Value



High : 5.5

Low : 3.5

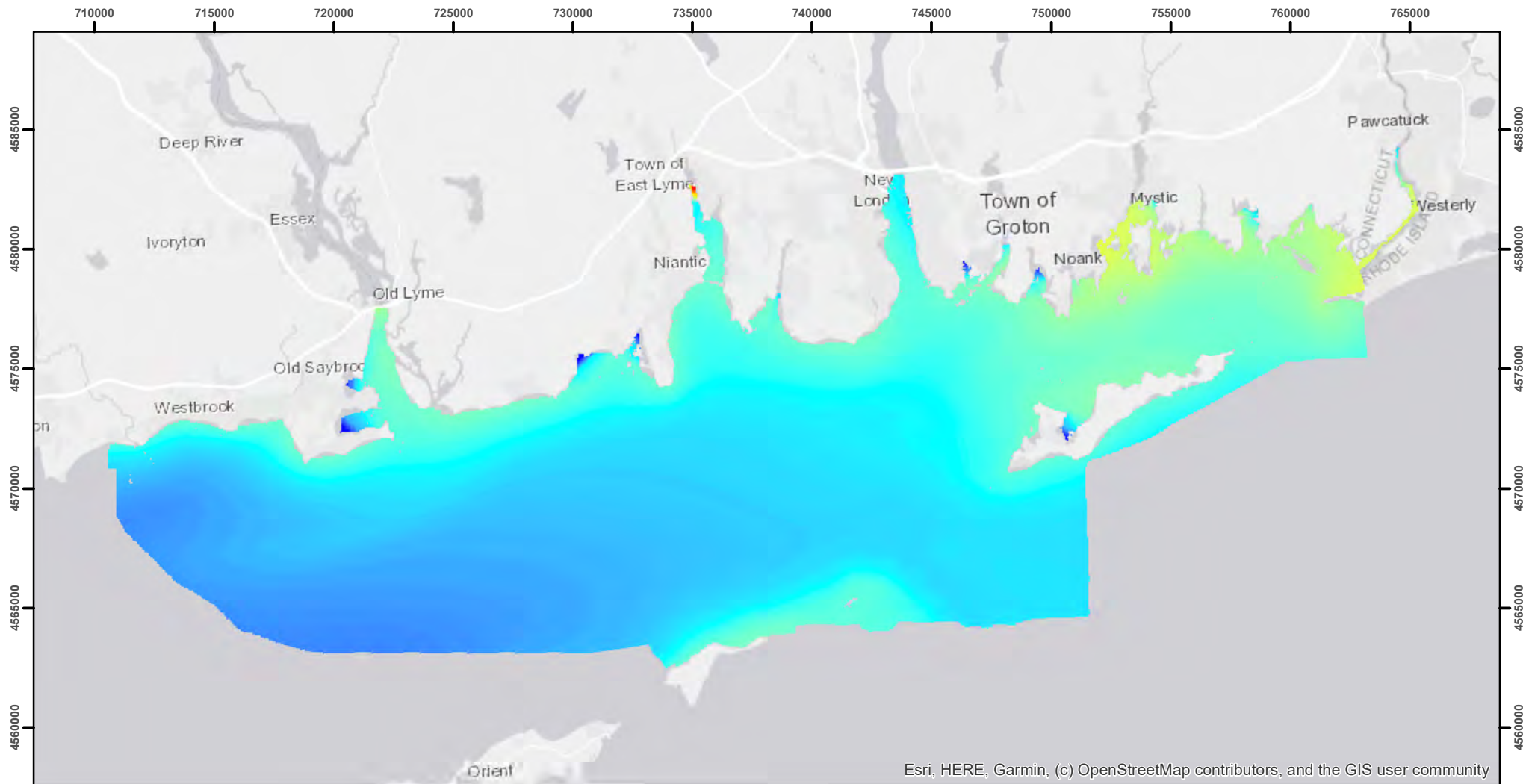


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:

<https://lismap.uconn.edu>

Horizontal Coordinate System: UTM Zone 18,NAD83

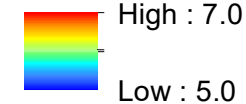
0 1.25 2.5 5 7.5 10 Miles



LIS Cable Fund Mapping Phase 2: Physical Characterization: Bottom Temperature - Mean April

Mean NB Temp Apr [oC]

Value

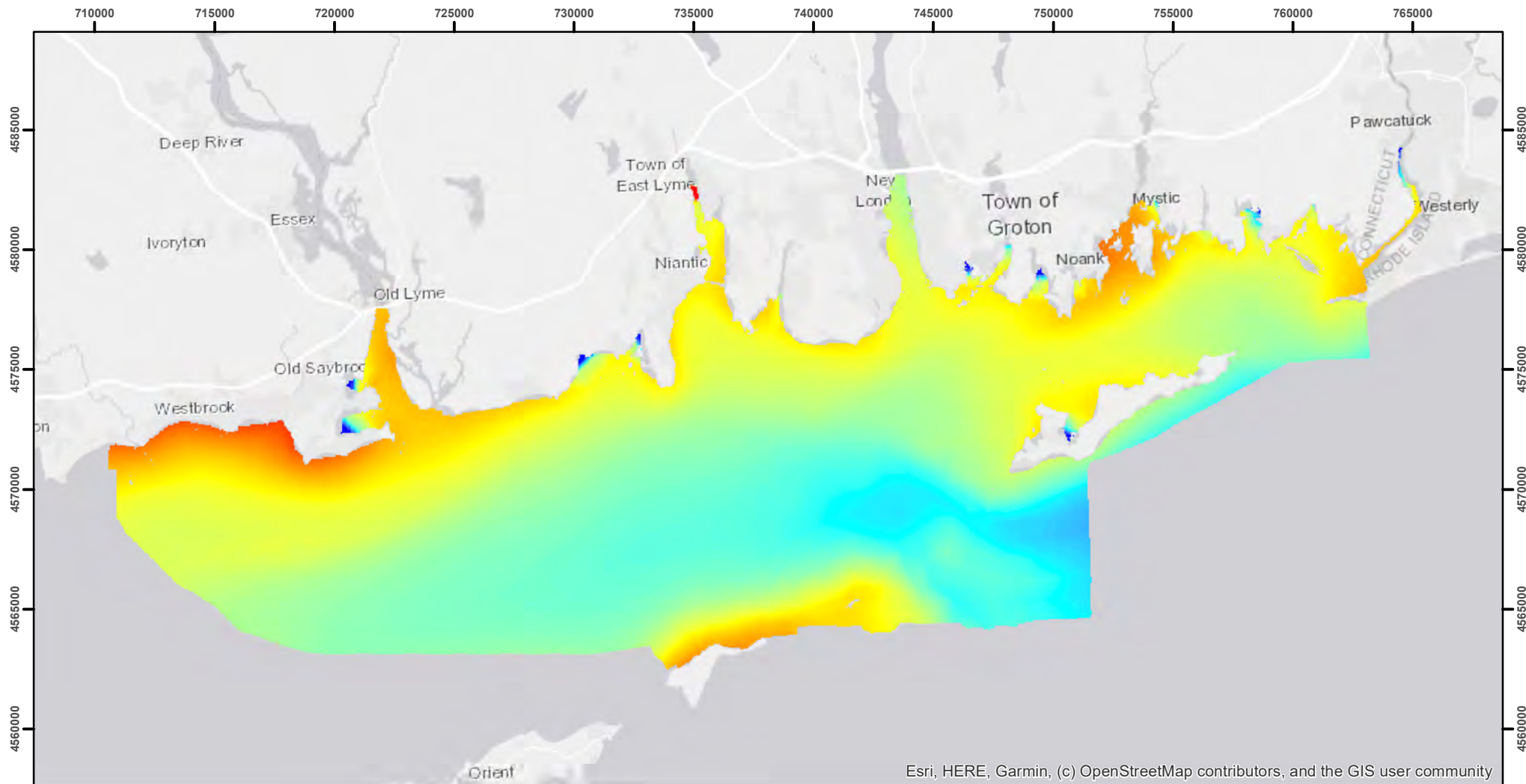


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:

<https://lismap.uconn.edu>

Horizontal Coordinate System: UTM Zone 18,NAD83

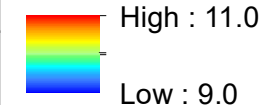
0 1.25 2.5 5 7.5 10 Miles



LIS Cable Fund Mapping Phase 2: Physical Characterization: Bottom Temperature - Mean May

Mean NB Temp May [oC]

Value

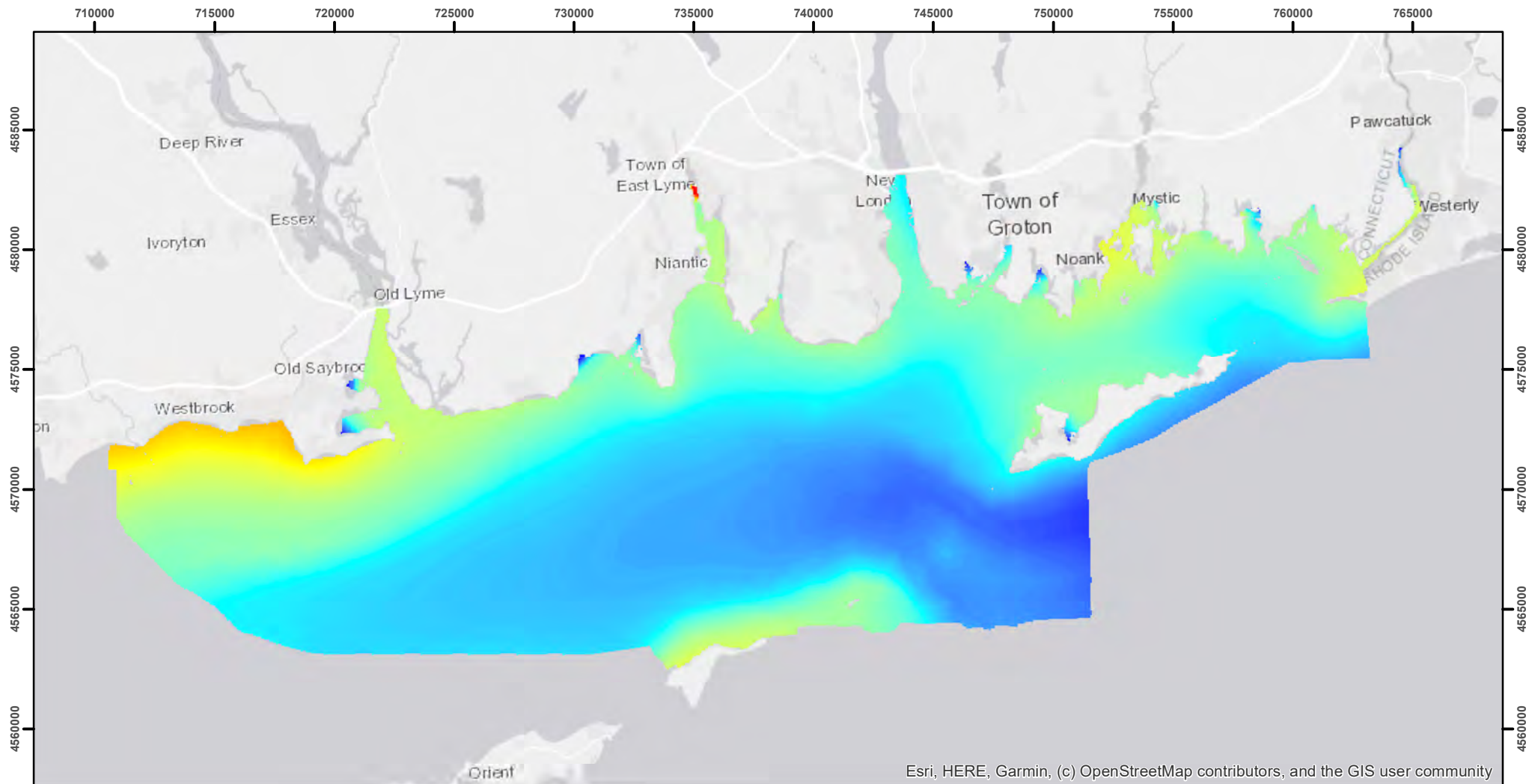


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:

<https://lismap.uconn.edu>

Horizontal Coordinate System: UTM Zone 18, NAD83

0 1.25 2.5 5 7.5 10 Miles



LIS Cable Fund Mapping Phase 2: Physical Characterization: Bottom Temperature - Mean June

Mean NB Temp Jun [oC]

Value



High : 17.0

Low : 13.0

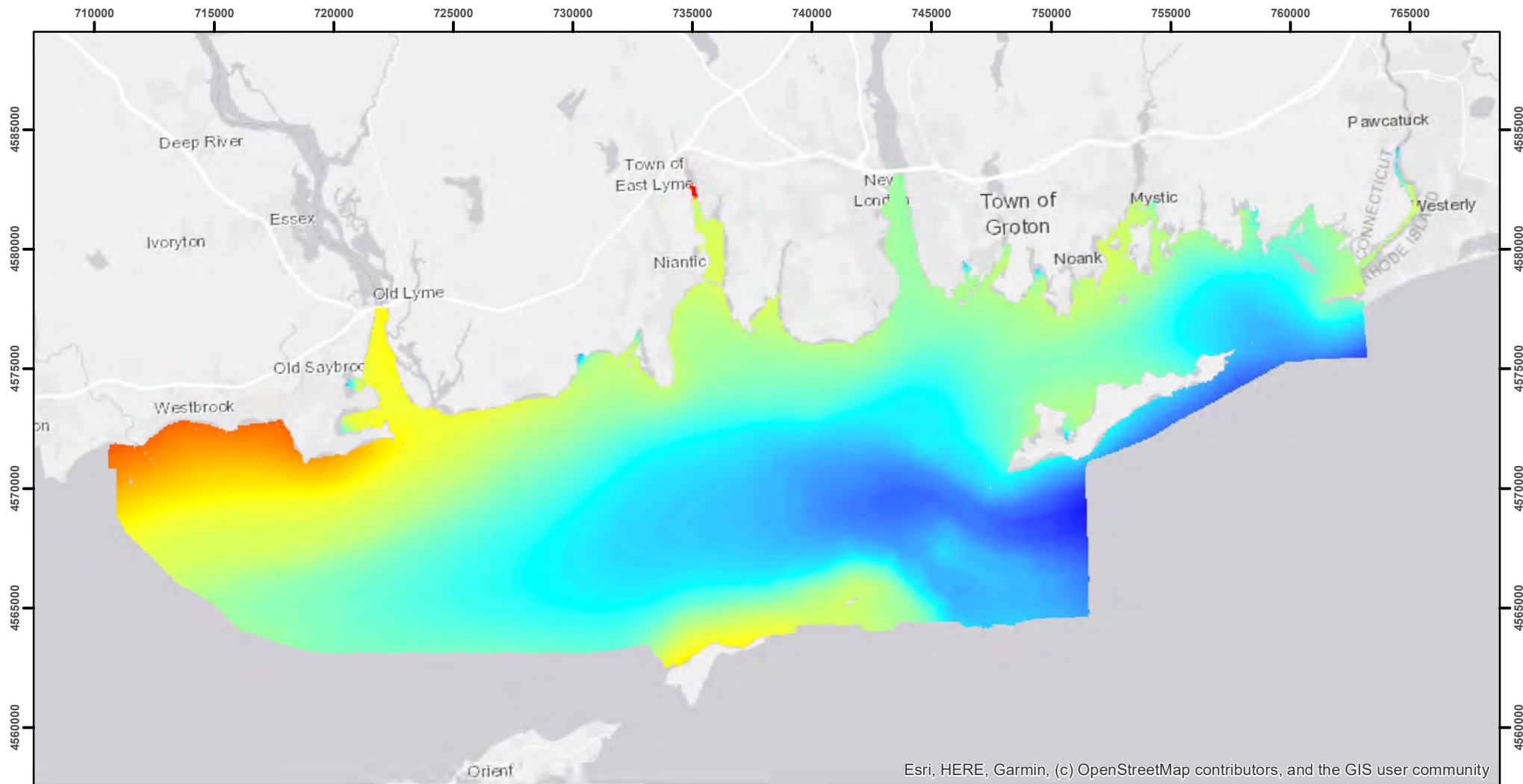


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:

<https://lismap.uconn.edu>

Horizontal Coordinate System: UTM Zone 18,NAD83

0 1.25 2.5 5 7.5 10 Miles



LIS Cable Fund Mapping Phase 2: Physical Characterization: Bottom Temperature - Mean July

Mean NB Temp Jul [oC]

Value



High : 21.0

Low : 17.0

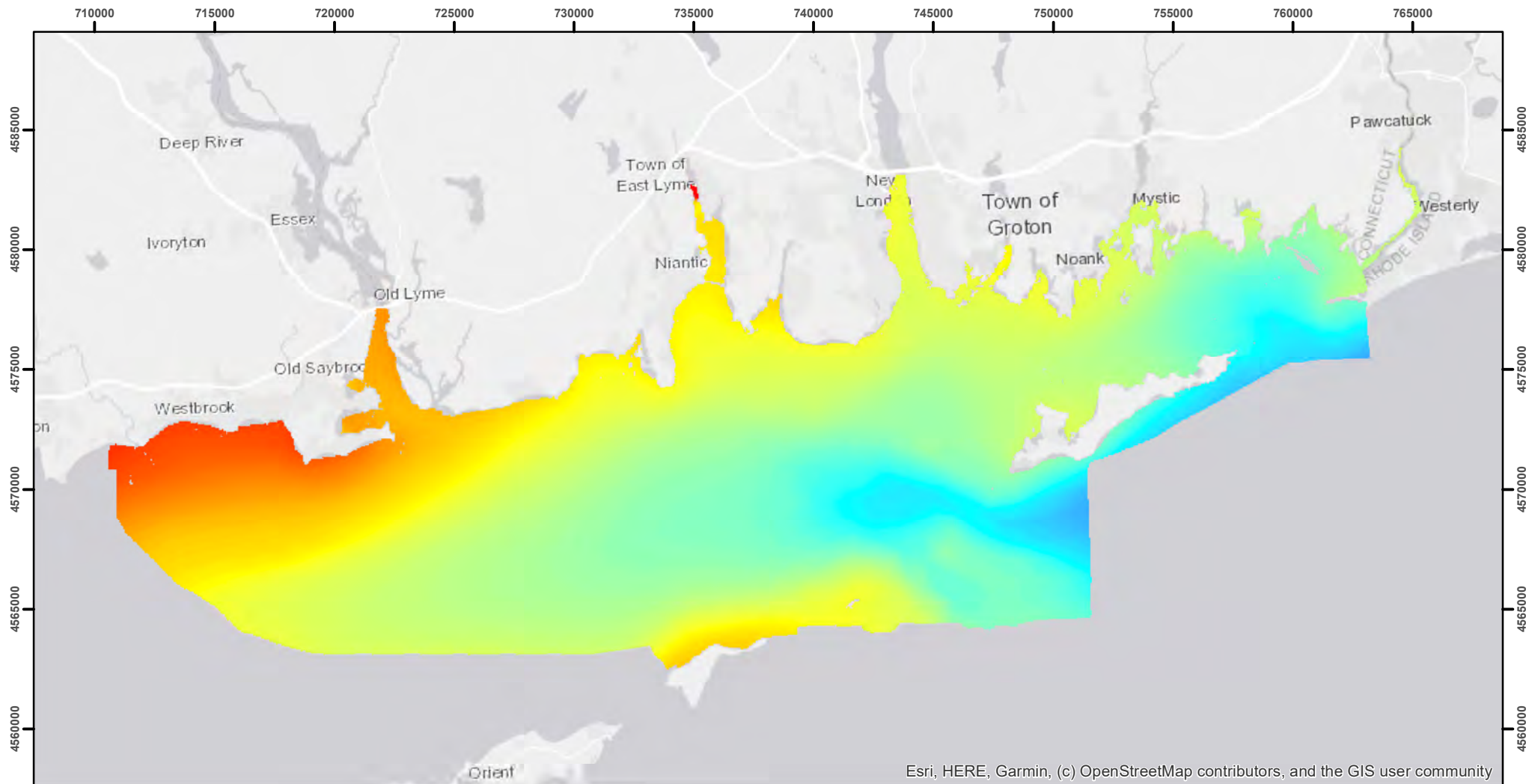


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:

<https://lismap.uconn.edu>

Horizontal Coordinate System: UTM Zone 18,NAD83

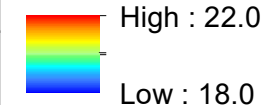
0 1.25 2.5 5 7.5 10 Miles



LIS Cable Fund Mapping Phase 2: Physical Characterization: Bottom Temperature - Mean Aug

Mean NB Temp Aug [oC]

Value

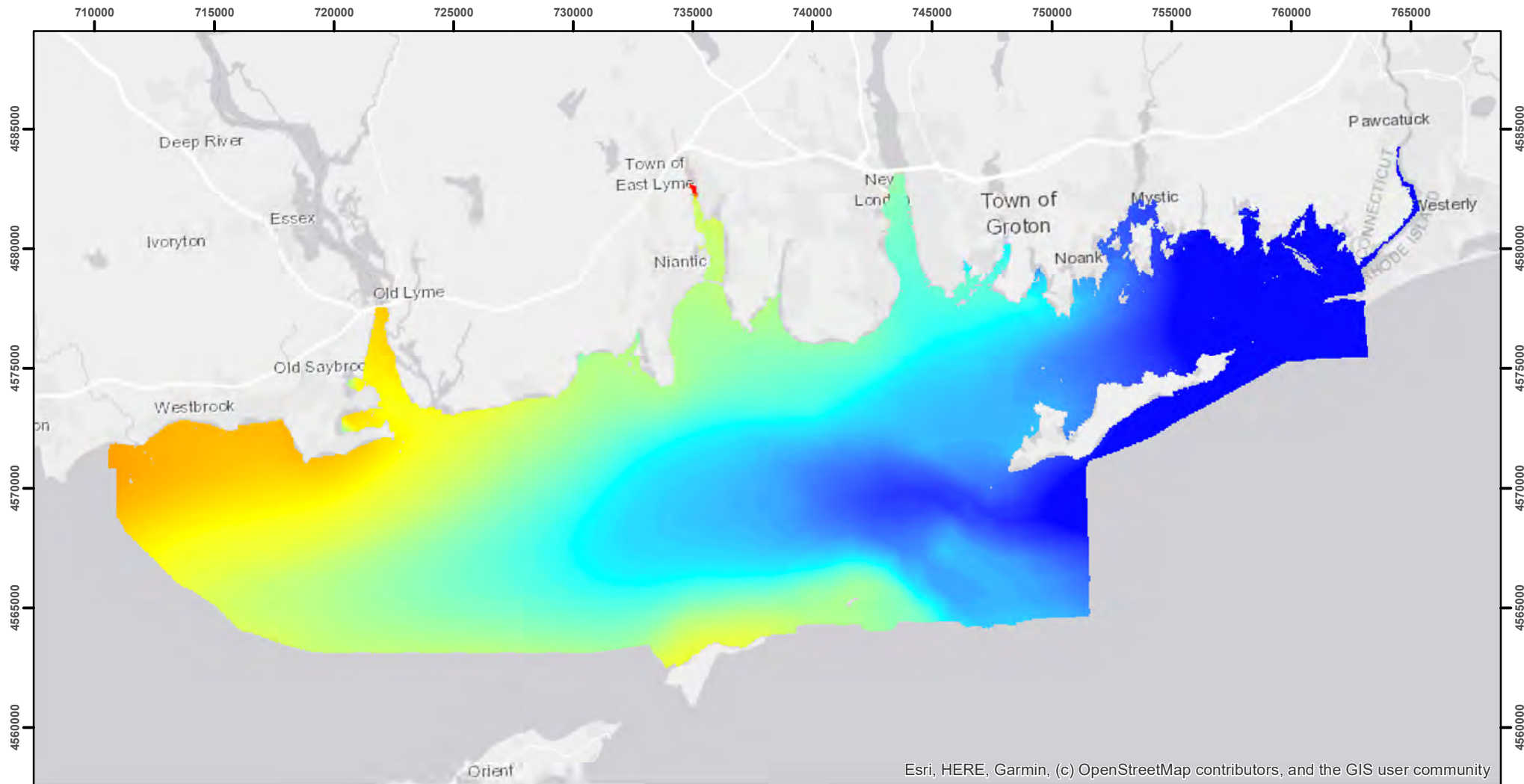


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:

<https://lismap.uconn.edu>

Horizontal Coordinate System: UTM Zone 18,NAD83

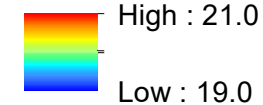
0 1.25 2.5 5 7.5 10 Miles



LIS Cable Fund Mapping Phase 2: Physical Characterization: Bottom Temperature - Mean Sept

Mean NB Temp Sep [oC]

Value

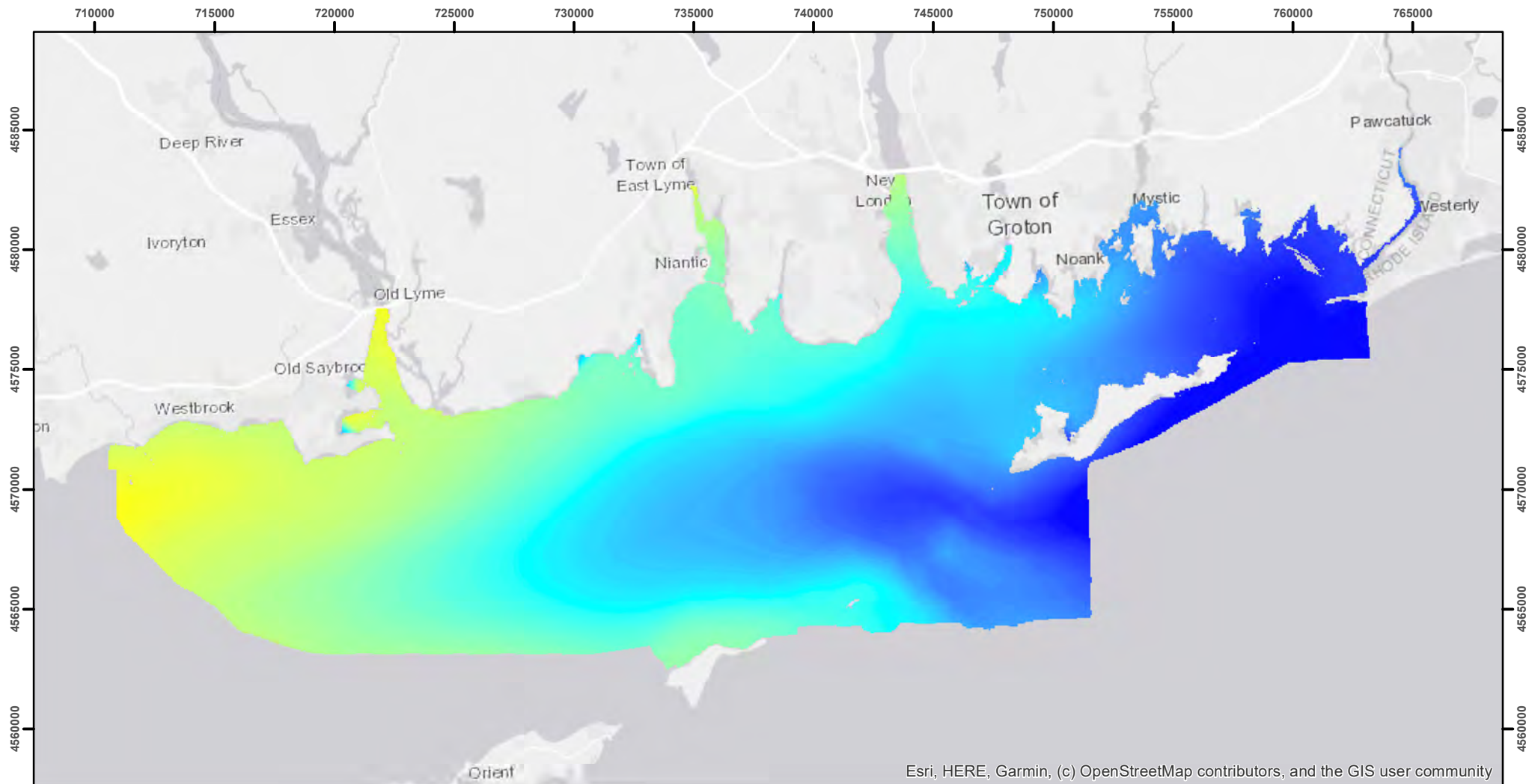


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:

<https://lismap.uconn.edu>

Horizontal Coordinate System: UTM Zone 18,NAD83

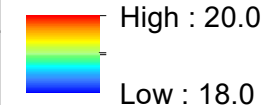
0 1.25 2.5 5 7.5 10 Miles



LIS Cable Fund Mapping Phase 2: Physical Characterization: Bottom Temperature - Mean Oct

Mean NB Temp Oct [oC]

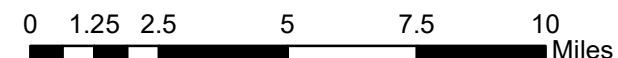
Value

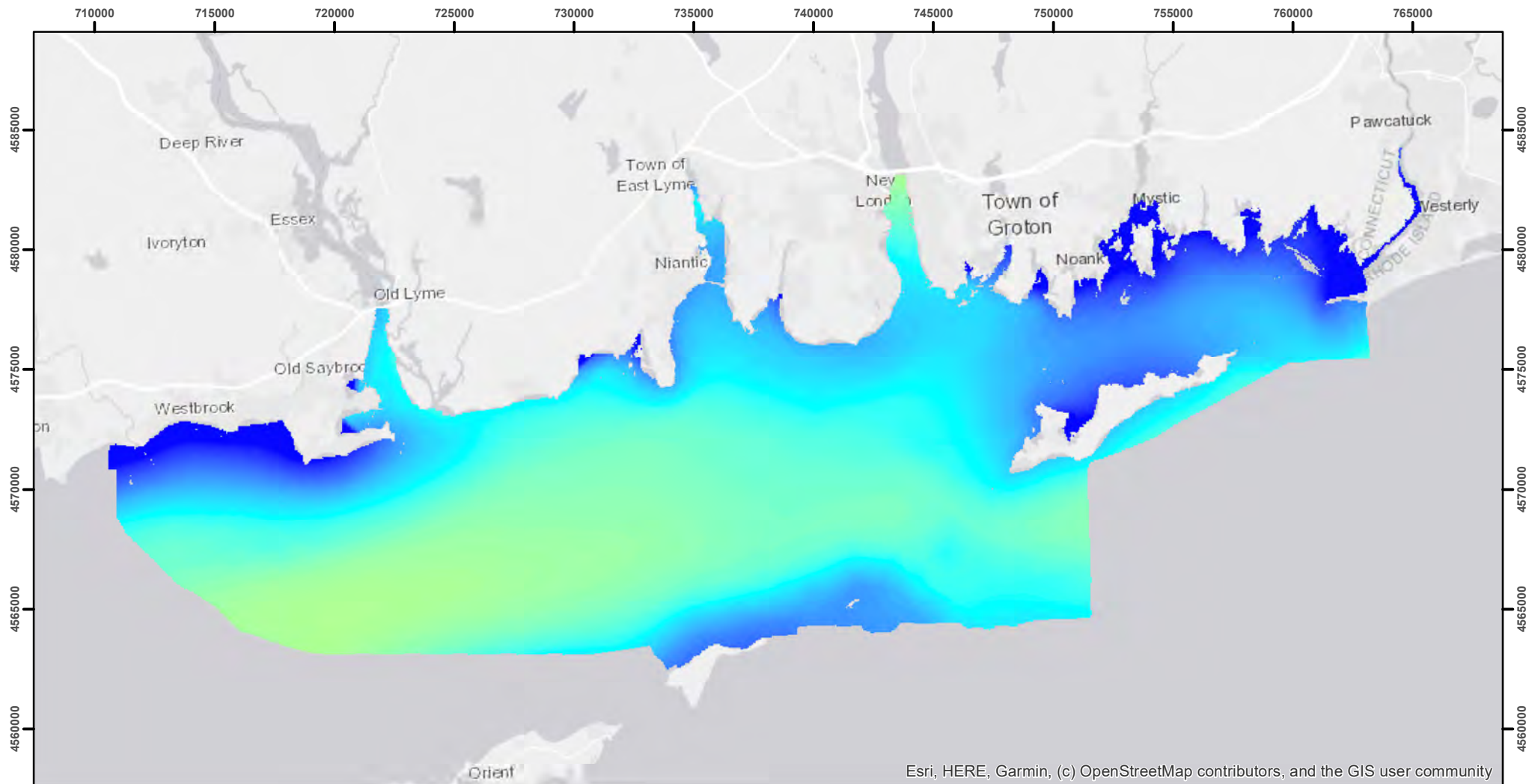


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:

<https://lismap.uconn.edu>

Horizontal Coordinate System: UTM Zone 18,NAD83





LIS Cable Fund Mapping Phase 2: Physical Characterization: Bottom Temperature - Mean Nov

Mean NB Temp Nov [oC]

Value



High : 16.0

Low : 14.0

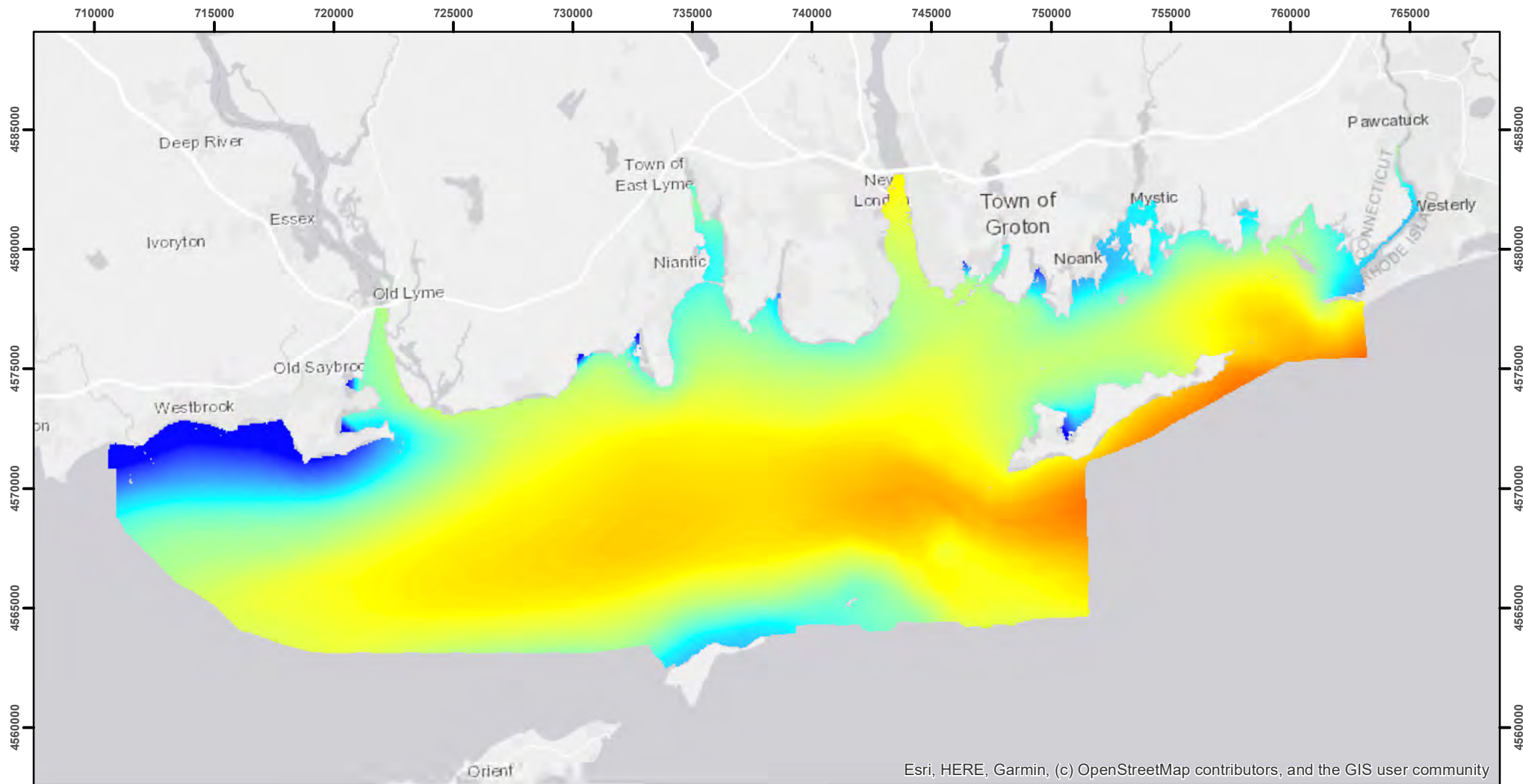


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:

<https://lismap.uconn.edu>

Horizontal Coordinate System: UTM Zone 18,NAD83

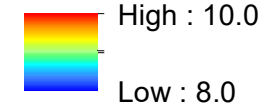
0 1.25 2.5 5 7.5 10 Miles



LIS Cable Fund Mapping Phase 2: Physical Characterization: Bottom Temperature - Mean Dec

Mean NB Temp Dec [oC]

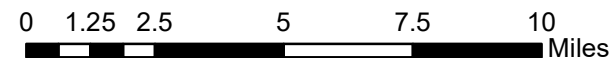
Value

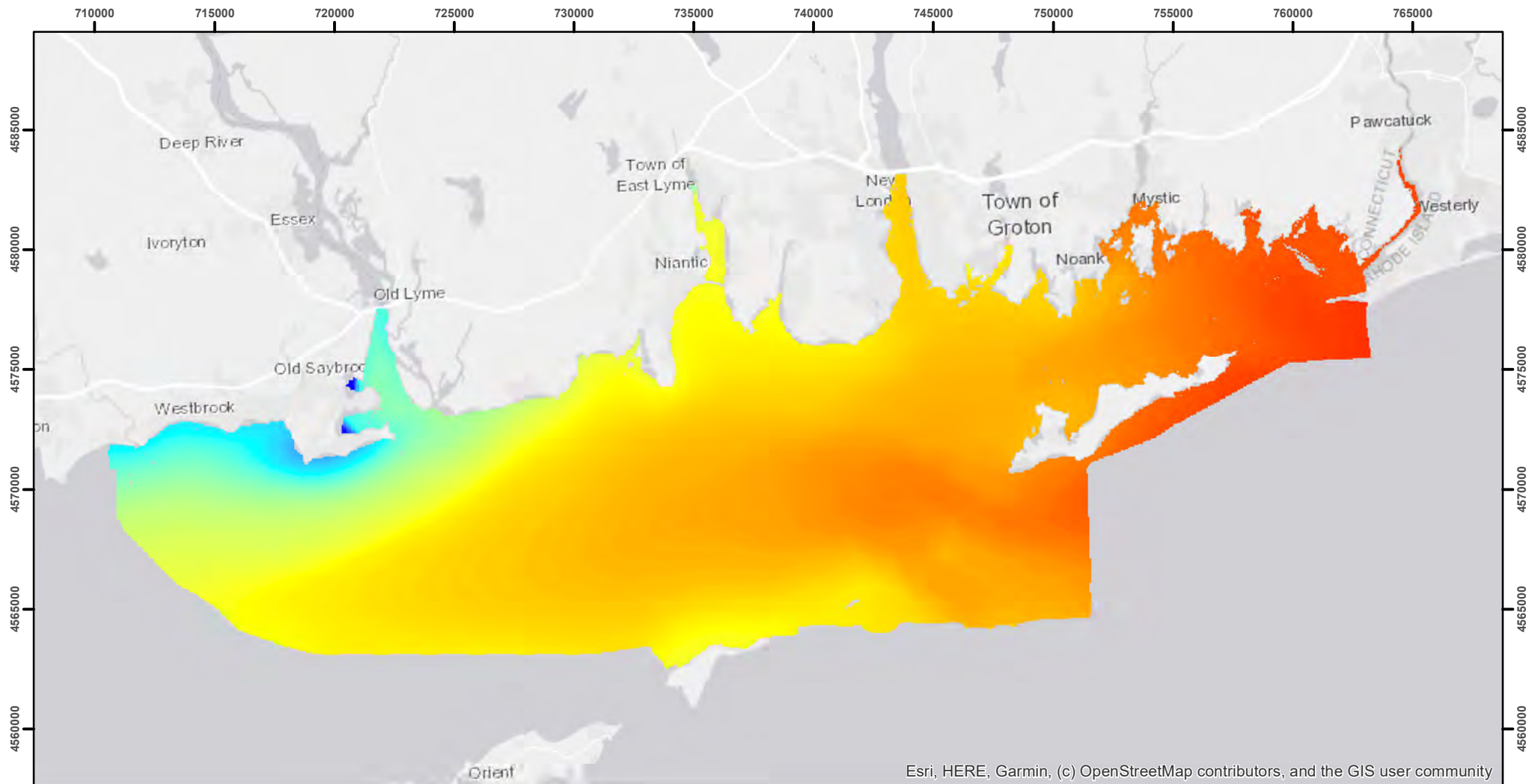


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:

<https://lismap.uconn.edu>

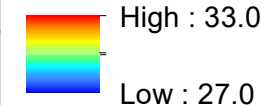
Horizontal Coordinate System: UTM Zone 18,NAD83





LIS Cable Fund Mapping Phase 2: Physical Characterization: Bottom Salinity - Mean Jan

**Mean NB Salinity Jan
Value**

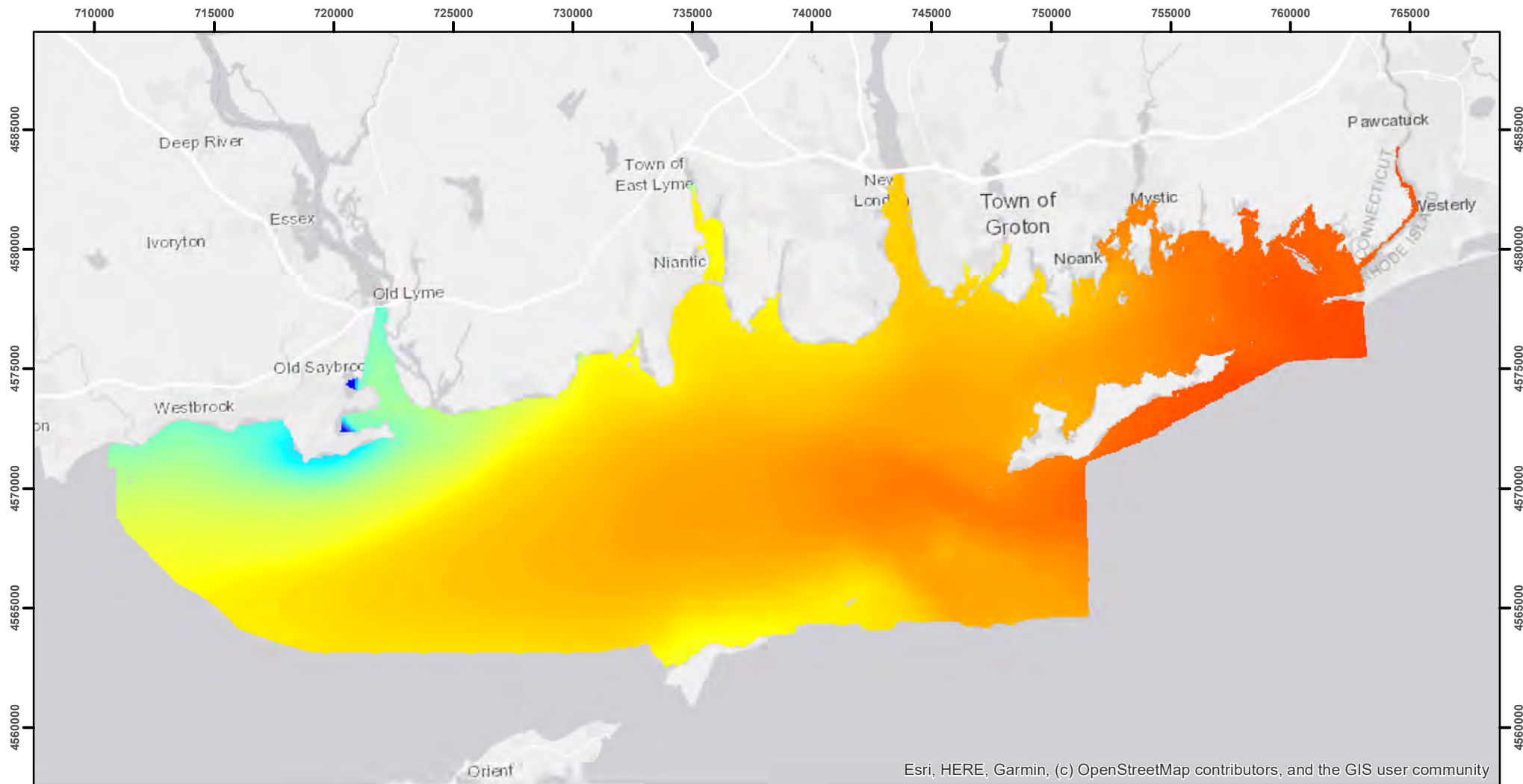


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:

<https://lismap.uconn.edu>

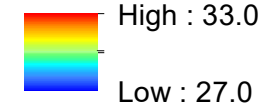
Horizontal Coordinate System: UTM Zone 18,NAD83

0 1.25 2.5 5 7.5 10 Miles



LIS Cable Fund Mapping Phase 2: Physical Characterization: Bottom Salinity - Mean Feb

**Mean NB Salinity Feb
Value**

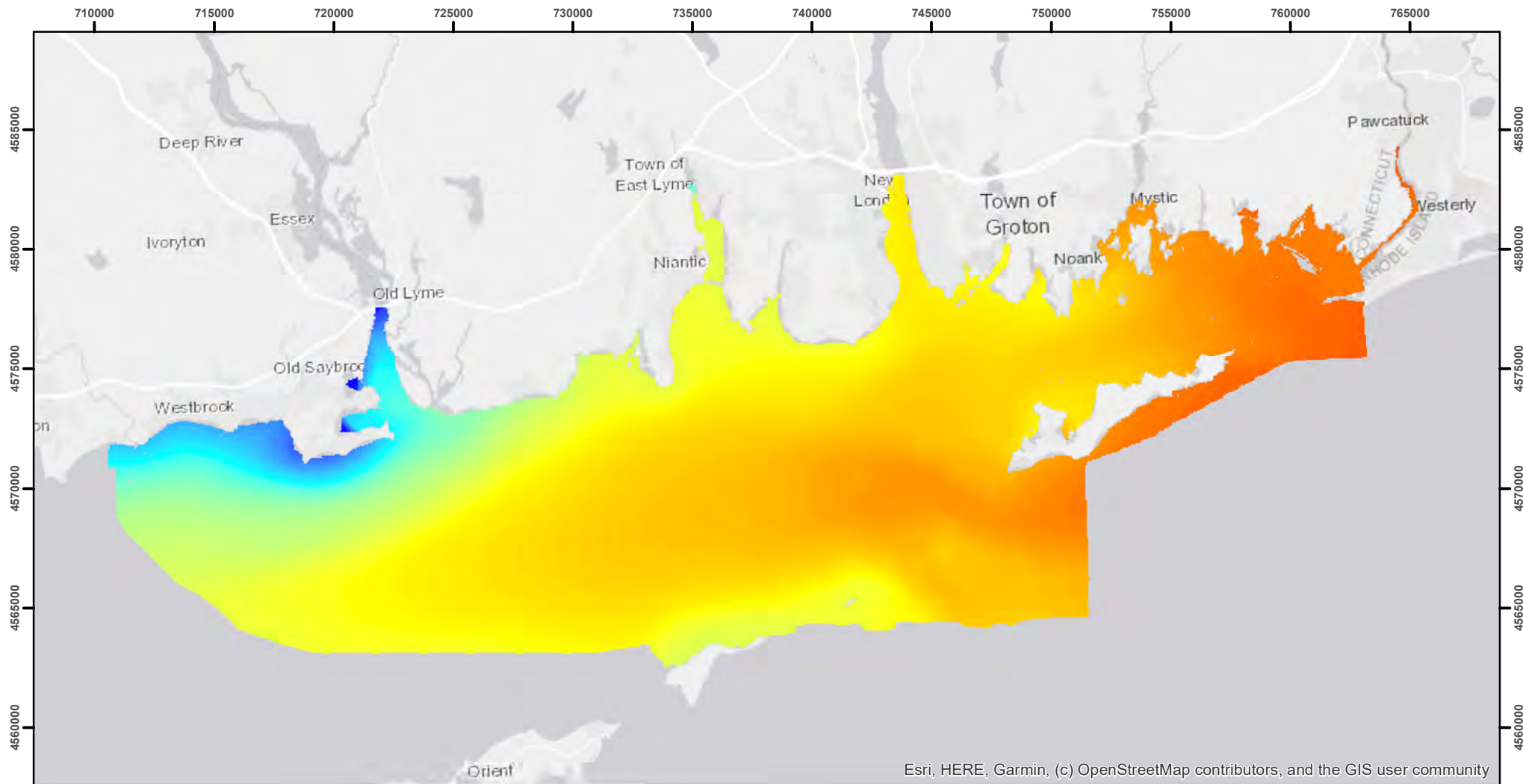


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:

<https://lismap.uconn.edu>

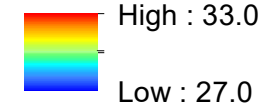
Horizontal Coordinate System: UTM Zone 18,NAD83

0 1.25 2.5 5 7.5 10 Miles



LIS Cable Fund Mapping Phase 2: Physical Characterization: Bottom Salinity - Mean March

**Mean NB Salinity Mar
Value**

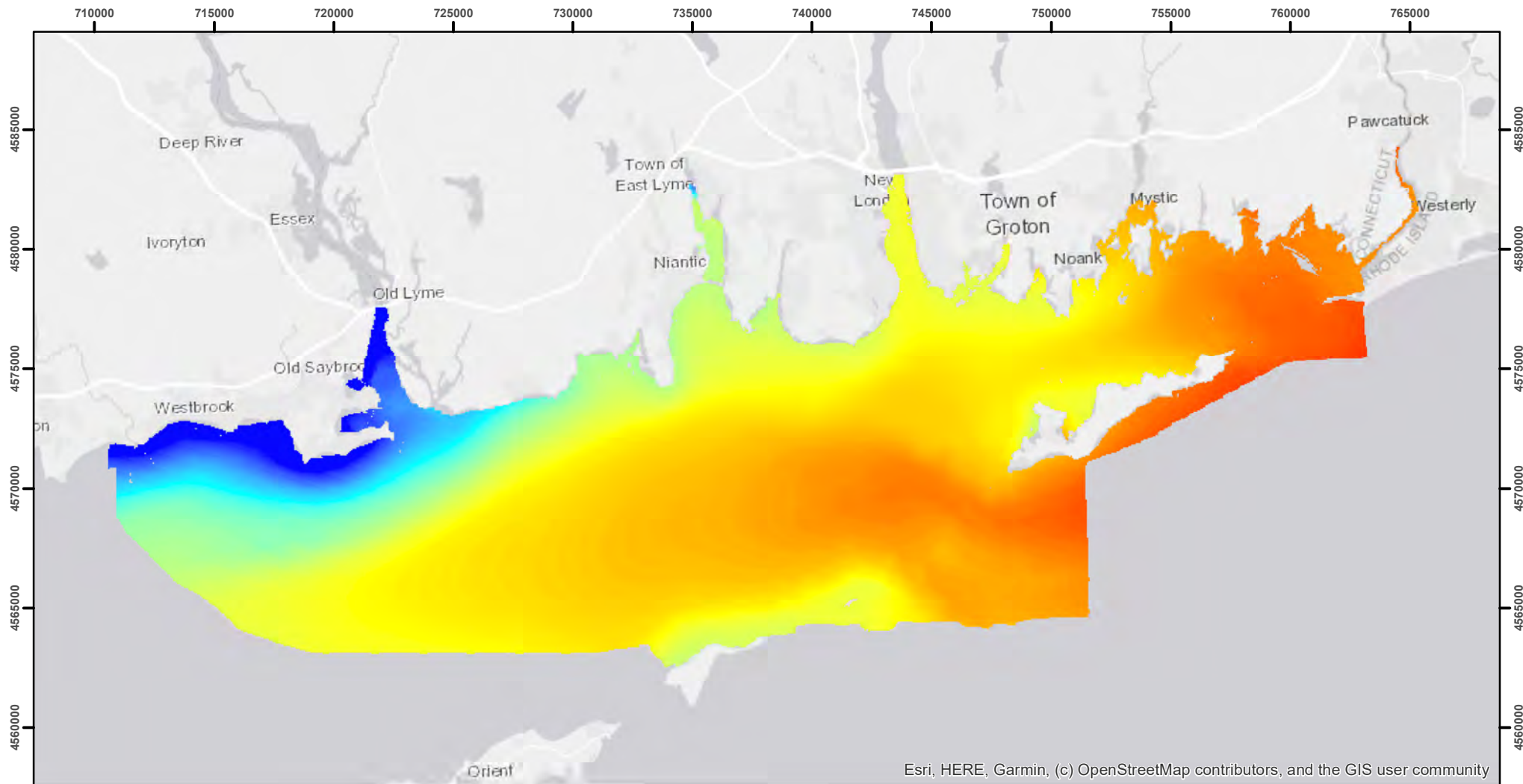


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:

<https://lismap.uconn.edu>

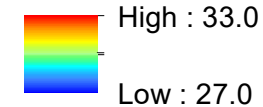
Horizontal Coordinate System: UTM Zone 18,NAD83

0 1.25 2.5 5 7.5 10 Miles



LIS Cable Fund Mapping Phase 2: Physical Characterization: Bottom Salinity - Mean April

**Mean NB Salinity Apr
Value**

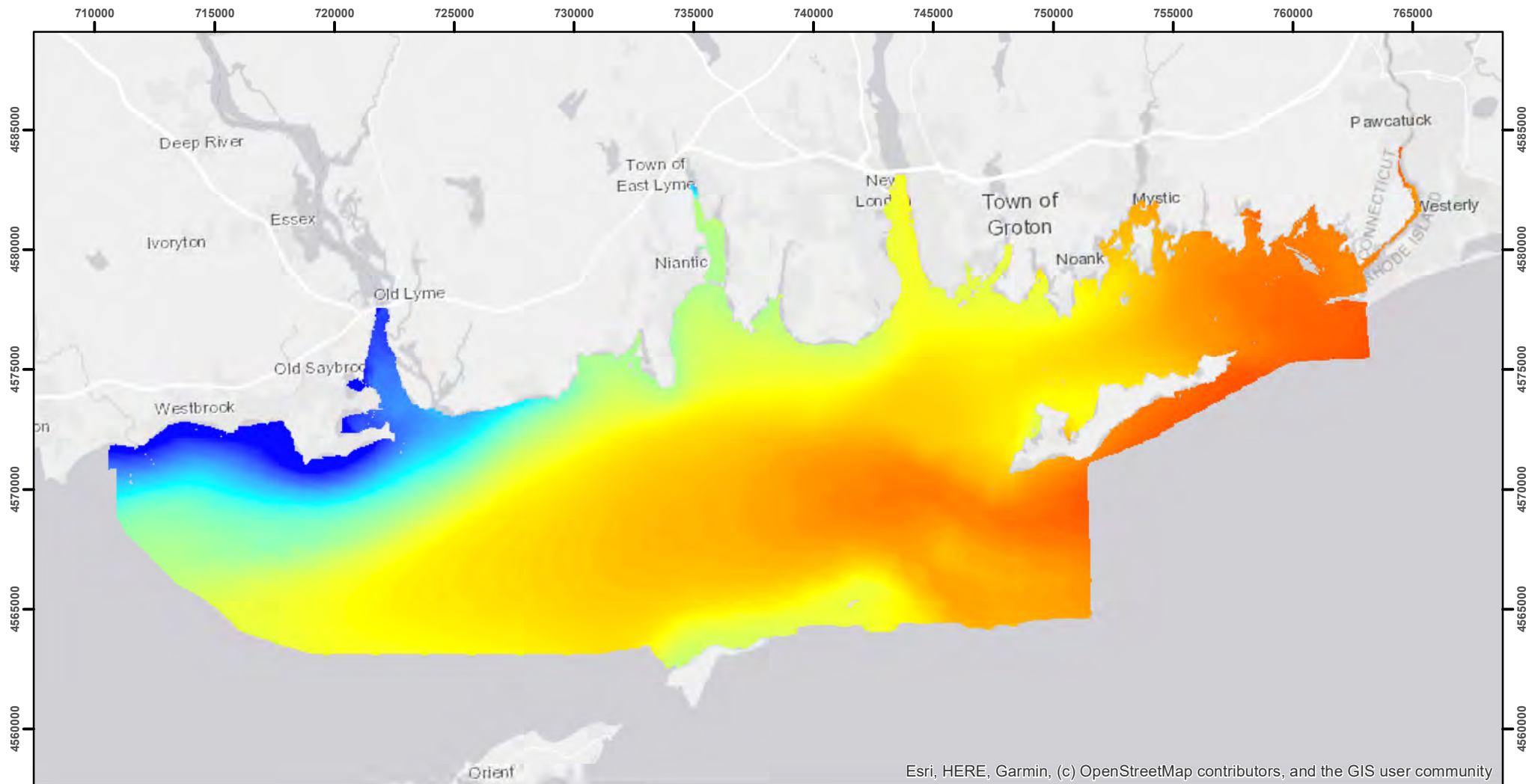


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:

<https://lismap.uconn.edu>

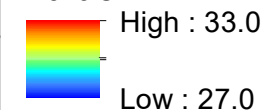
Horizontal Coordinate System: UTM Zone 18,NAD83

0 1.25 2.5 5 7.5 10 Miles



LIS Cable Fund Mapping Phase 2: Physical Characterization: Bottom Salinity - Mean May

Mean NB Salinity May Value

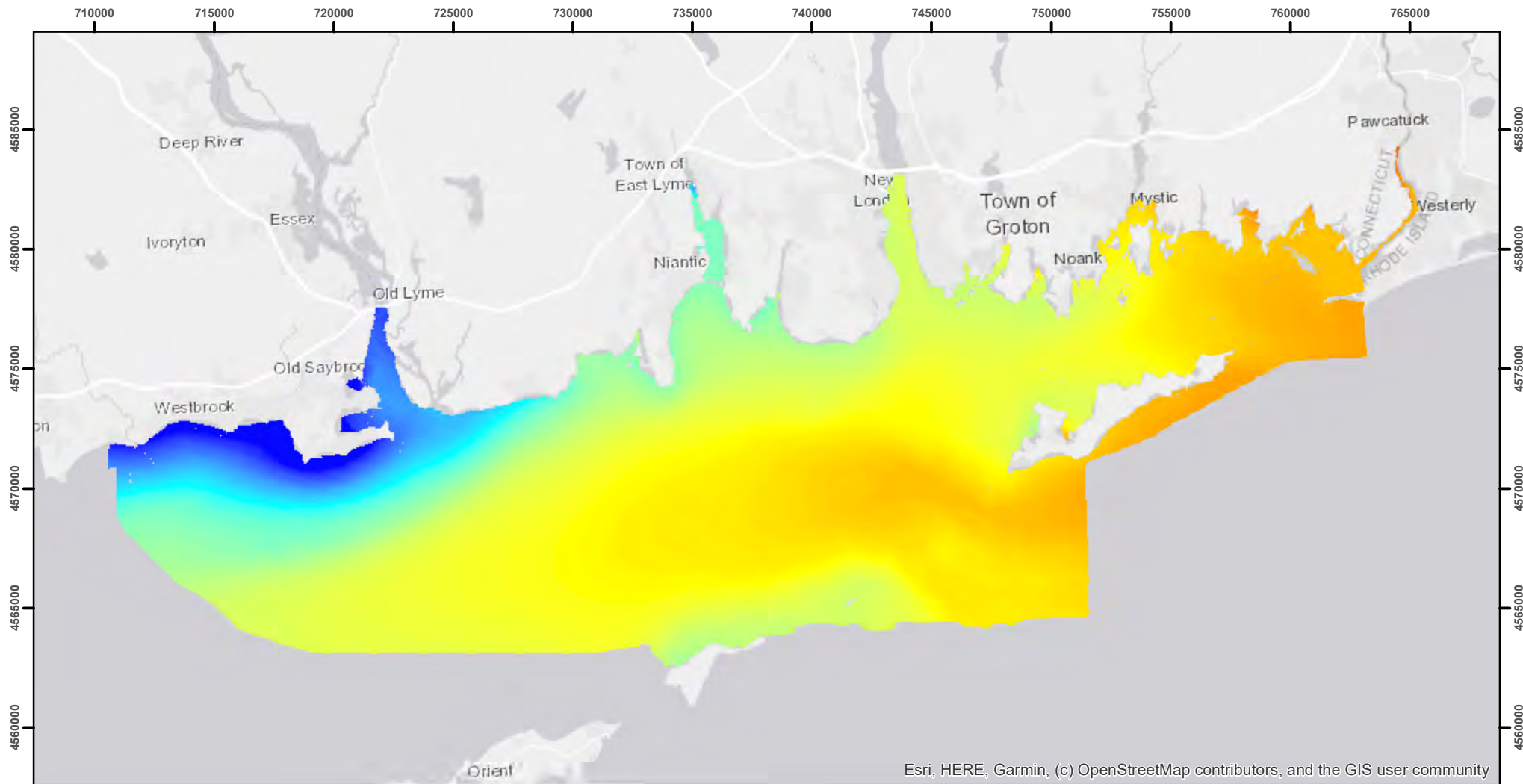


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:

<https://lismap.uconn.edu>

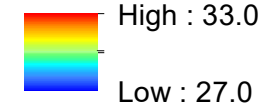
Horizontal Coordinate System: UTM Zone 18,NAD83

0 1.25 2.5 5 7.5 10 Miles



LIS Cable Fund Mapping Phase 2: Physical Characterization: Bottom Salinity - Mean June

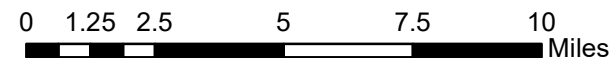
**Mean NB Salinity Jun
Value**

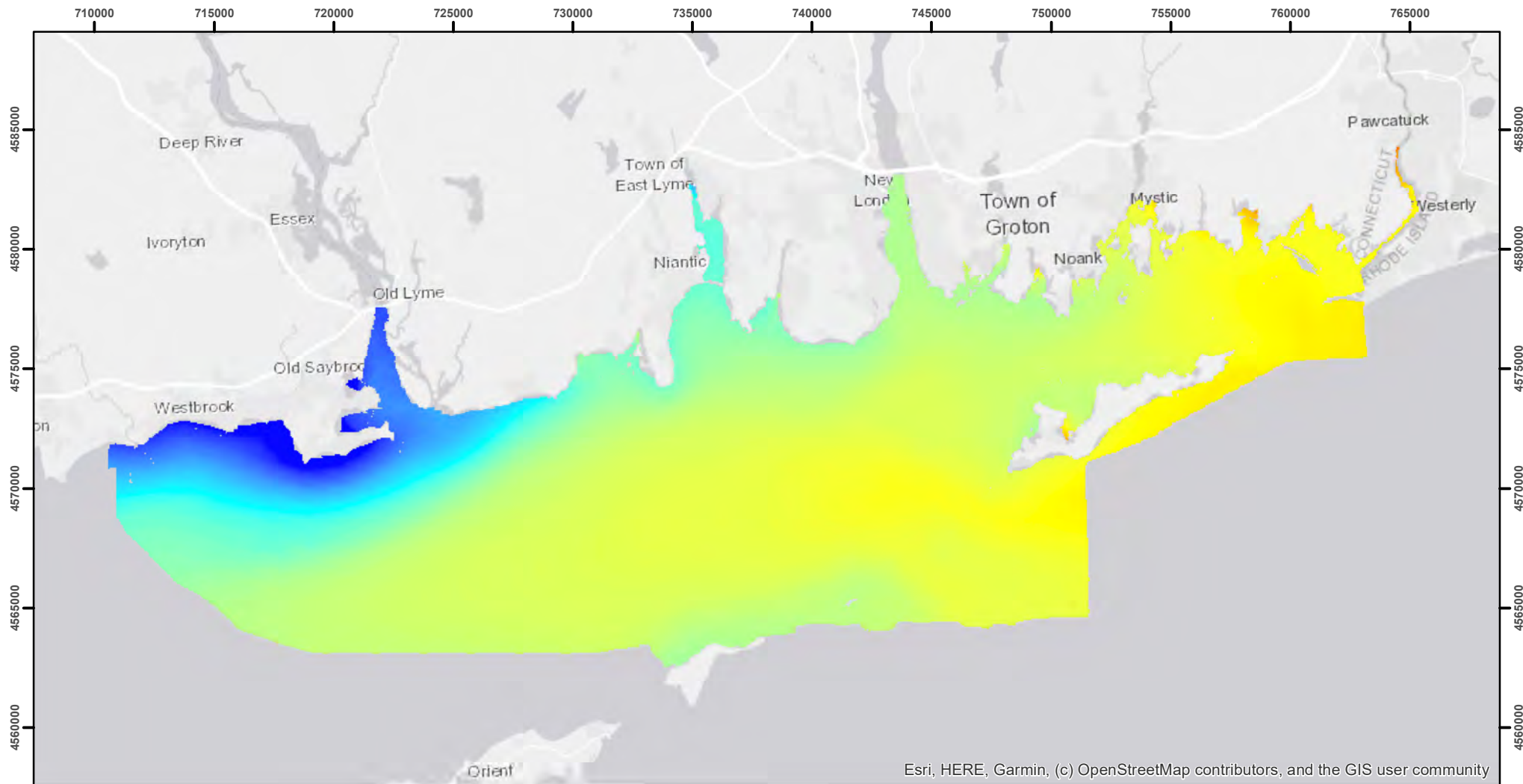


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:

<https://lismap.uconn.edu>

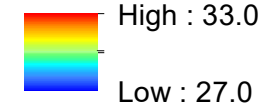
Horizontal Coordinate System: UTM Zone 18,NAD83





LIS Cable Fund Mapping Phase 2: Physical Characterization: Bottom Salinity - Mean July

**Mean NB Salinity Jul
Value**

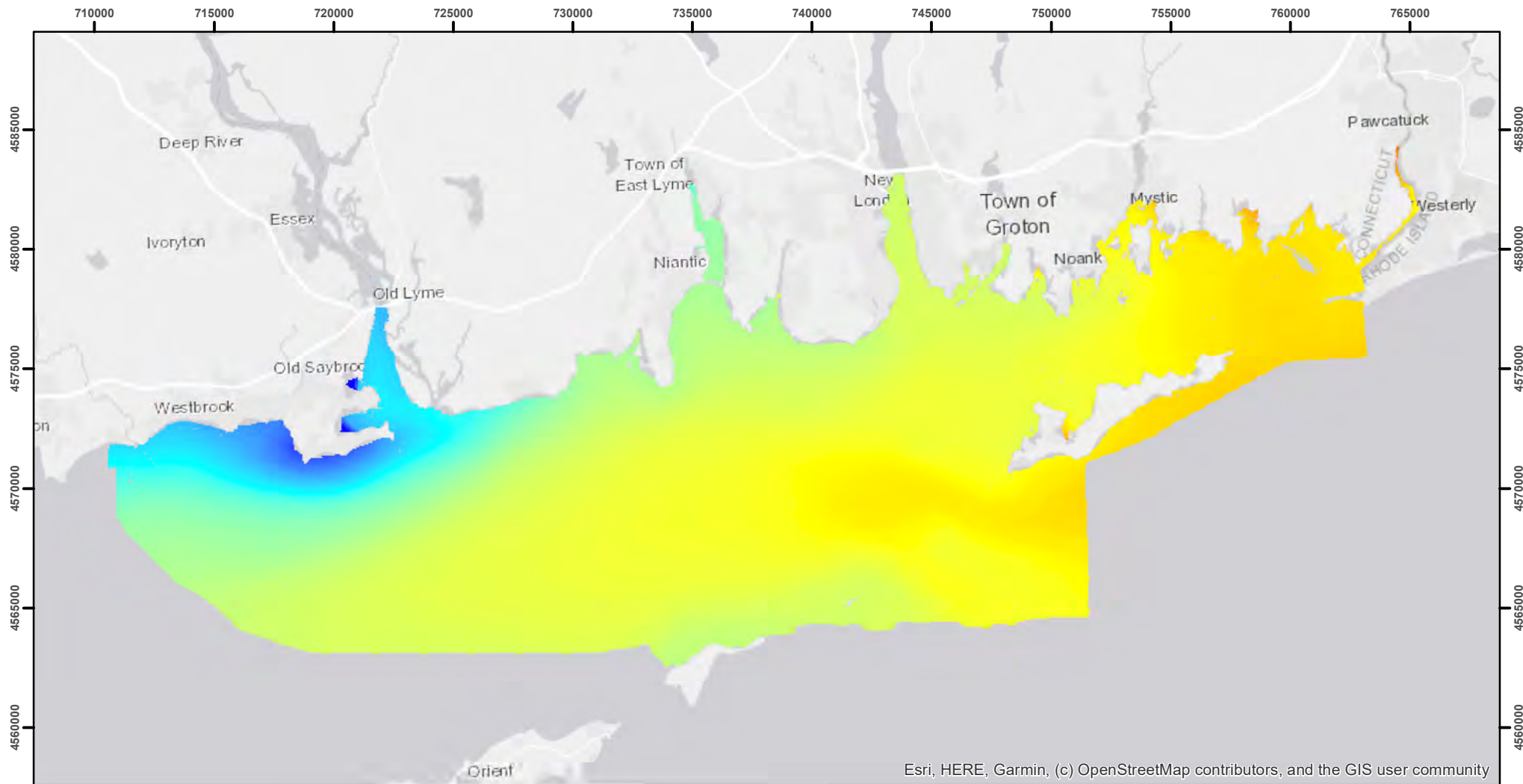


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:

<https://lismap.uconn.edu>

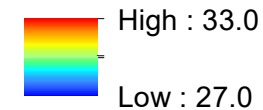
Horizontal Coordinate System: UTM Zone 18,NAD83

0 1.25 2.5 5 7.5 10 Miles



LIS Cable Fund Mapping Phase 2: Physical Characterization: Bottom Salinity - Mean Aug

Mean NB Salinity Aug Value

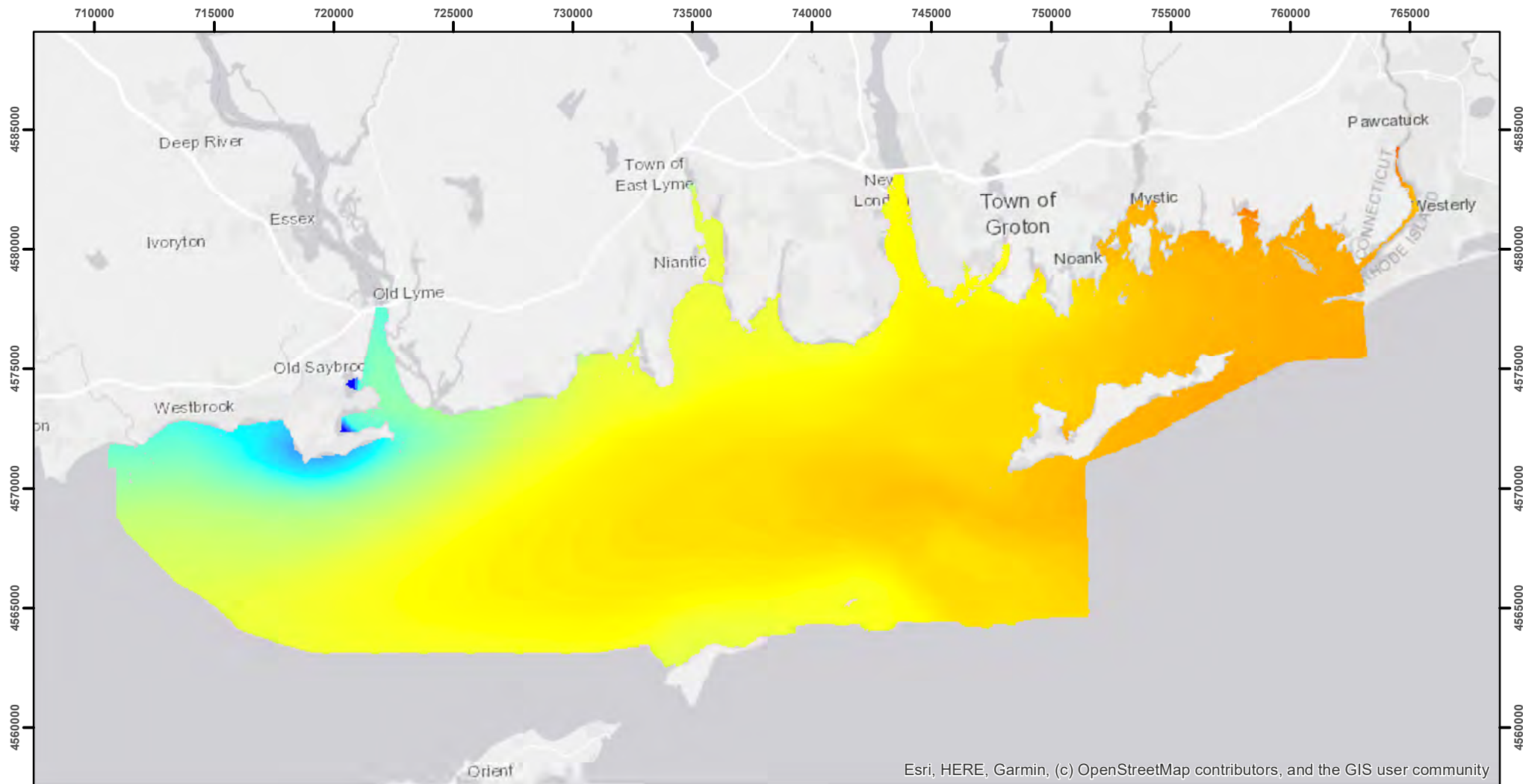


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:

<https://lismap.uconn.edu>

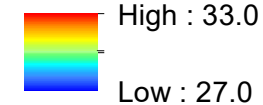
Horizontal Coordinate System: UTM Zone 18,NAD83

0 1.25 2.5 5 7.5 10 Miles



LIS Cable Fund Mapping Phase 2: Physical Characterization: Bottom Salinity - Mean Sept

**Mean NB Salinity Sep
Value**

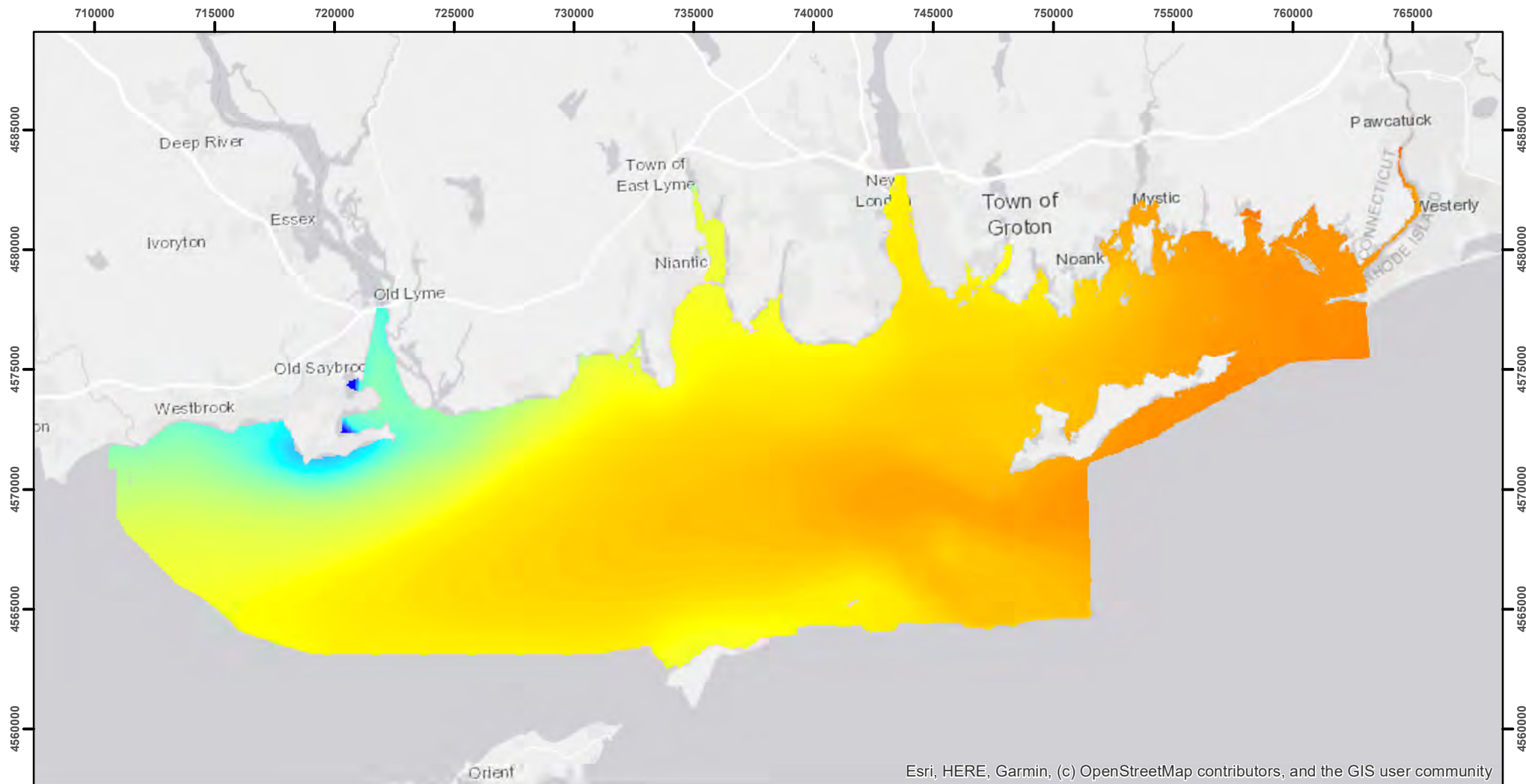


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:

<https://lismap.uconn.edu>

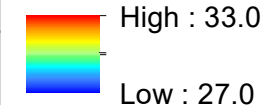
Horizontal Coordinate System: UTM Zone 18,NAD83

0 1.25 2.5 5 7.5 10 Miles



LIS Cable Fund Mapping Phase 2: Physical Characterization: Bottom Salinity - Mean Oct

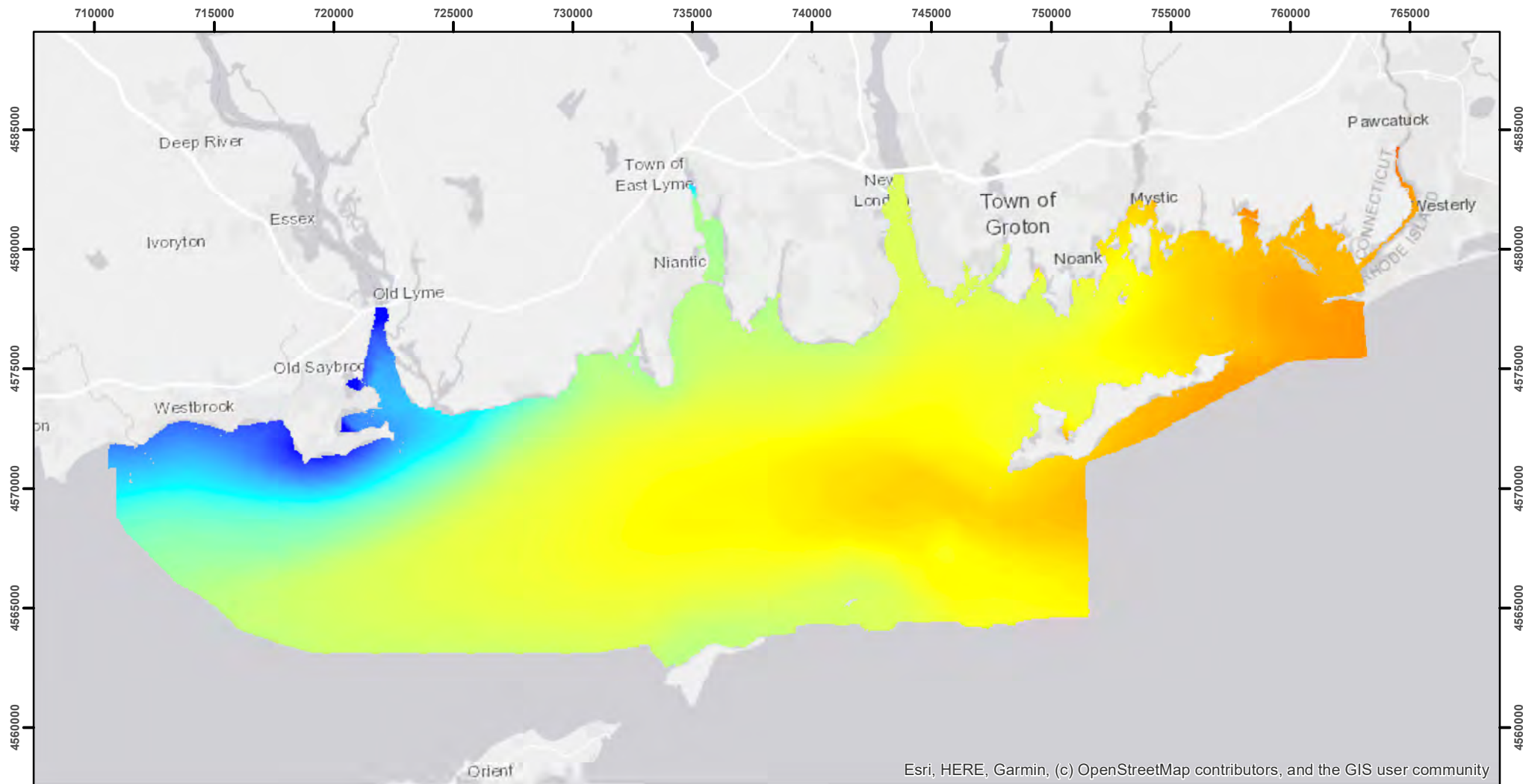
**Mean NB Salinity Oct
Value**



Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:
<https://lismap.uconn.edu>

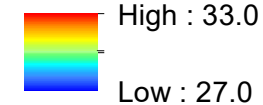
Horizontal Coordinate System: UTM Zone 18,NAD83

0 1.25 2.5 5 7.5 10 Miles



LIS Cable Fund Mapping Phase 2: Physical Characterization: Bottom Salinity - Mean Nov

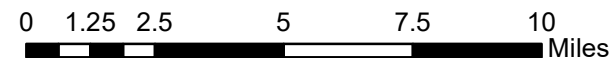
Mean NB Salinity Nov
Value

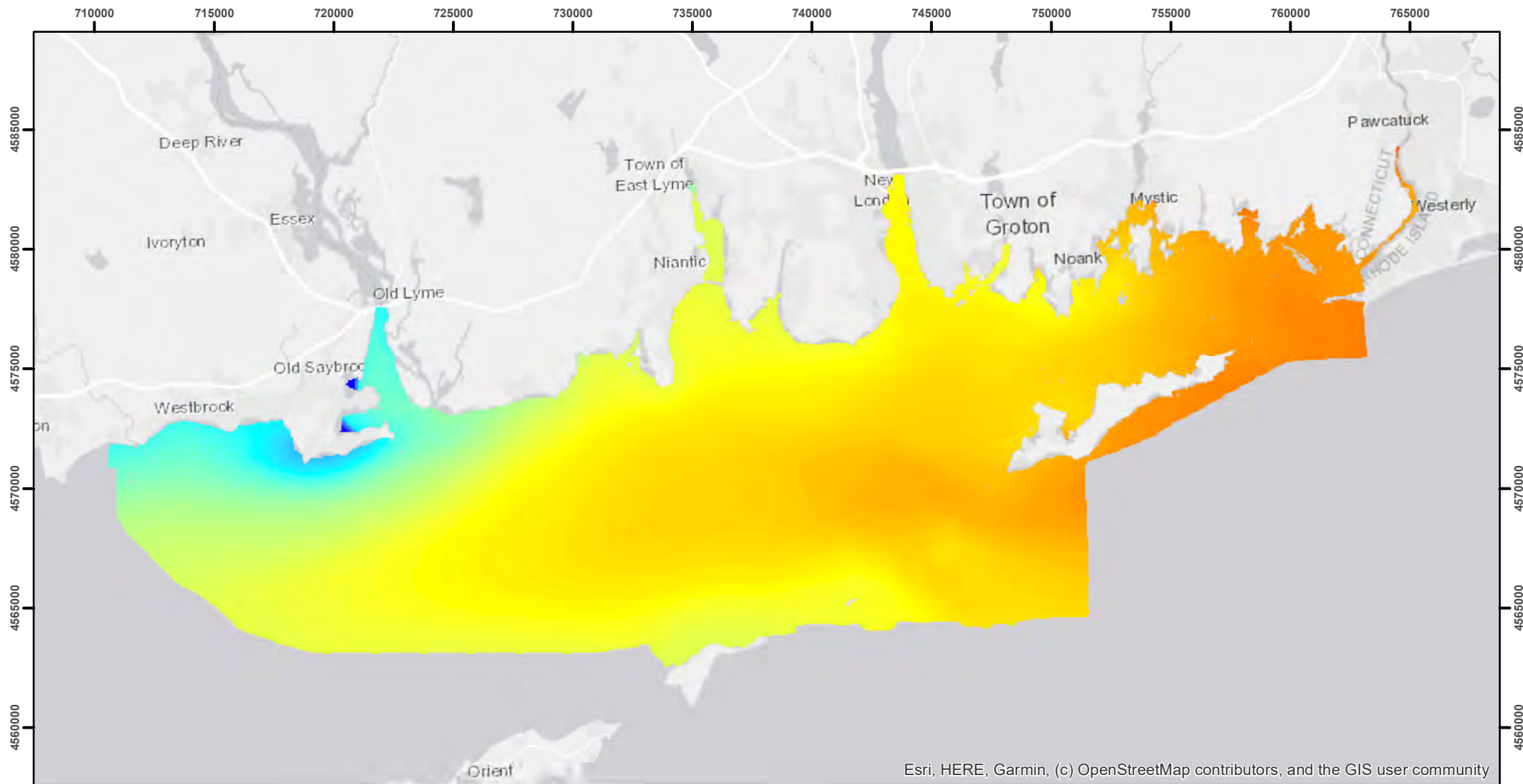


Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:

<https://lismap.uconn.edu>

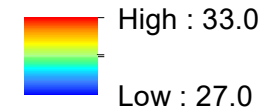
Horizontal Coordinate System: UTM Zone 18,NAD83





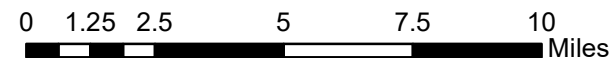
LIS Cable Fund Mapping Phase 2: Physical Characterization: Bottom Salinity - Mean Dec

**Mean NB Salinity Dec
Value**



Project supported by the US EPA Long Island Sound Study. For information and a full list of partners please visit:
<https://lismap.uconn.edu>

Horizontal Coordinate System: UTM Zone 18, NAD83



APPENDIX TWO – METADATA DOCUMENTATION

Appendix 2-1: Shallow Water Acoustic Mapping Metadata

Appendix 2-1-1 – Processed Geoswath bathymetry metadata

Appendix 2-1-2 – Processed Geoswath side scan sonar metadata

Appendix 2-1-3 – Raw Geoswath acoustic, tidal height and sound velocity profile metadata

Processed bathymetry (GeoTIFF grid format raster images) derived from Geoswath multibeam data in Eastern Long Island Sound

METADATA

Dataset Originator: *University of Connecticut: Ivar G. Babb, Dennis Arbige*

Publication Date: *6/30/2021*

Dataset Title: *Processed bathymetry (GeoTIFF grid format raster images) derived from Geoswath multibeam data in Eastern Long Island Sound*

Online Linkage:

LDEO Data Repository - <http://www.marine-geo.org/portals/lis/>

Data_doi= 10.26022/IEDA/329907

Data url="http://www.marine-geo.org/tools/search/Files.php?data_set_uid=29907"

Abstract:

This data set is the processed bathymetric data collected by the University of Connecticut as part of the Long Island Sound Cable Fund Initiative in the Phase II area of eastern Long Island Sound. The data were collected using UConn's Kongsberg Geoswath Phase Measuring Bathymetric Sonar mounted on UConn's Research Vessel Weicker in 2017 and 2018. Specifically, the data were collected in gap areas 23, 24 and 25 identified by NOAA within the Phase II area. The raw data was processed using CARIS software to develop the grid format raster images in the GeoTiff format.

Dataset purpose:

This dataset provides high resolution bathymetric data intended to provide critical subsea landscape features that can assist with the Long Island Sound Cable Fund's goal of habitat mapping. The data should not be used for navigation.

Time period of content:

The acoustic surveys to map the Survey Blocks 23, 24 and 25 were conducted over the course of a little more than one year from April 31, 2017 through to July 19, 2018. Seasonal considerations, ship and crew schedules were the primary drivers for the protracted survey period. A total of 26 survey days were conducted over the time frame, with survey day trips averaging 4.6 hrs, facilitated by the proximity of the survey area to the UConn Avery Point campus.

Dataset Status: *Complete*

Update Frequency: *None planned*

Theme Keywords:

Connecticut, New York, Long Island Sound, Fishers Island Sound, estuary, phase measuring bathymetric sonar, interferometric sonar, Kongsberg Geoswath, RV Lowell Weicker, bathymetry, backscatter, side scan sonar, University of Connecticut, UConn, Long Island Sound Mapping and Research Collaborative, LISMaRC

Access Constraints: *None*

Use Constraints:

*Data and metadata are is licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 3.0 United States License](#). Appropriate acknowledgment with a byline/credit/link **must** be given to both the original scientists/data contributors by reference to their relevant publications and to the Marine Geoscience Data System (www.marine-geo.org) and/or the Long Island Sound Habitat Mapping website (<https://lismap.uconn.edu>). Where citation information has been provided to us by scientists it is included with the relevant database entries, and should be acknowledged when data are used. You may browse freely, but you may not circulate or publish materials you obtained from this site if you do not accept the terms of providing adequate citation.*

Data are provided with the express understanding that they will not be sold to third parties or included in commercial databases.

Users are strongly encouraged to contact the original investigators responsible for data made available on this site. Where appropriate, researchers are also encouraged to consider collaboration and/or co-authorship with original investigators.

Data should not be used for navigation purposes.

Point of Contact:

Ivar G. Babb, Department of Marine Sciences, University of Connecticut, 860-405-9123, ivar.babb@uconn.edu

Dataset Credit:

The Long Island Sound Mapping and Research Collaborative (LISMaRC). LISMaRC is the University of Connecticut, the University of New Haven and the US Geological Survey. Funding provided by the Long Island Sound Seafloor Mapping Fund administered cooperatively by the EPA Long Island Sound Study and the Connecticut Department of Energy and Environmental Protection (DEEP).

Data Quality Considerations: *See below*

Attribute accuracy:

The final bathymetry grids are in GeoTIFF (Raster) grid format, projected in WGS84 UTM 18N (EPSG: 32618) with 1m resolution.

Completeness:

The acoustic data products are complete.

Positional accuracy:

To improve survey accuracy and precision LISMaRC utilized UConn's ACORN (Advanced Continuously Operating Reference Network) that is composed of several receivers (GPS) that stream data to on-campus computers. The computers distribute the information to surveyors and mappers to help them in their work. ACORN allows highly accurate positioning in real time. This means that a location anywhere on or above the earth can be pinpointed within the

space of a dime. The ACORN maintains nine base stations in the state of Connecticut including two that provide coverage within the Phase II area. LISMaRC worked with ACORN staff to integrate this real-time network (RTN) into the navigation system on the Weicker to provide this much improved accuracy. A description of the ACORN can be found at: <http://naturally.uconn.edu/2014/07/29/this-is-not-your-cars-gps/> and the site network is <http://acorn.uconn.edu>

Process Steps:

This data set was acquired with a 250 kHz Kongsberg Geoswath Phase Measuring Bathymetry Sonar (PMBS) system mounted in the moon pool of Research Vessel (RV) Lowell Weicker. With a PMBS system the acoustic energy is propagated from the transducer downward in a beam that is narrow in the along-track dimension and wide in the across-track dimension. This method produces a line of depth measurements across-track, i.e. perpendicular to the research vessel's trackline. As the vessel moves forward, these profiles sweep out a ribbon-shaped surface of depth measurement.

Horizontal accuracy was provided by DGPS augmented by RTK corrections from the Advanced Continuous Operation Reference Network (ACORN). This is a Connecticut statewide system of base stations that provides real-time corrections for GPS equipment, operated by the University of Connecticut through a partnership with CTDOT (<http://acorn.uconn.edu>). Tides were corrected to MLLW based on tide gauge data from NOAA Tide Station at New London, Connecticut (Station ID: 8461490). Sound velocity profiles (SVP) were conducted every three hours to acquire sound speed data using UConn's Valeport SVP system. Data acquisition was performed using the Geoswath+ acquisition software and saved as .rff files for subsequent post-processing. The system recorded bathymetry and sidescan sonar data along with heave, pitch and roll data from a Seatex MRU-5 mounted on the Geoswath transducer. Positional information for all equipment (GPS, transducer, MRU) offsets and latencies can be found in the CARIS vessel file included with the raw data.

The surveys were conducted at a vessel speed between 4-5 knots (10 km/hr) to ensure data density sufficient to meet the NOAA recommendations. Due to the sampling gap at nadir generated by the interferometric (PMBS) system a 100% swath overlap was implemented to provide the recommended 100% coverage of bathymetric and backscatter data. The swath width (line spacing) was also maintained to not exceed the 5 x water depth, a conservative approach for an interferometric system. A survey line spacing of 25 meters/side was used in shallow areas, while a 30-meter spacing was adopted for deeper areas.

The acquired bathymetry data were processed using CARIS software. The data were acquired and processed in two individual blocks. The final bathymetry grids are in GeoTIFF (Raster) grid format, projected in WGS84 UTM 18N (EPSG: 32618) with 1m resolution. The data were collected and assembled as part of the "The Long Island Sound Seafloor Mapping Initiative Phase II – Eastern Long Island Sound" project conducted by the Long Island Sound Mapping and Research Collaborative (LISMaRC, Principal Investigator: Ivar G. Babb).

Process Contact: Dennis Arbige, University of Connecticut, dennis.arbige@uconn.edu

Attributes:

Attribute: GeoTIFF - The bathymetry grids are in GeoTIFF (Raster) grid format, projected in WGS84 UTM 18N (EPSG: 32618) with 1m resolution

Metadata reference: *Ivar G. Babb, University of Connecticut, Department of Marine Sciences, 860-405-9123, ivar.babb@uconn.edu*

Processed side scan sonar (GeoTIFF grid format raster images) derived from Geoswath multibeam data in Eastern Long Island Sound

METADATA

Dataset Originator: *University of Connecticut: Ivar G. Babb, Dennis Arbige*

Publication Date: *6/30/2021*

Dataset Title: *Processed side scan sonar (GeoTIFF grid format raster images) derived from Geoswath multibeam data in Eastern Long Island Sound*

Online Linkage:

LDEO Data Repository - <http://www.marine-geo.org/portals/lis/>

Data_doi="10.26022/IEDA/329907"

Data url="http://www.marine-geo.org/tools/search/Files.php?data_set_uid=29907"

Abstract:

This data set is the processed bathymetric data collected by the University of Connecticut as part of the Long Island Sound Cable Fund Initiative in the Phase II area of eastern Long Island Sound. The data were collected using UConn's Kongsberg Geoswath Phase Measuring Bathymetric Sonar mounted on UConn's Research Vessel Weicker in 2017 and 2018. Specifically, the data were collected in gap areas 23, 24 and 25 identified by NOAA within the Phase II area. The raw data was processed using CARIS software to develop the grid format raster images in the GeoTiff format.

Dataset purpose:

This dataset provides high resolution bathymetric data intended to provide critical subsea landscape features that can assist with the Long Island Sound Cable Fund's goal of habitat mapping. The data should not be used for navigation.

Time period of content:

The acoustic surveys to map the Survey Blocks 23, 24 and 25 were conducted over the course of a little more than one year from April 31, 2017 through to July 19, 2018. Seasonal considerations, ship and crew schedules were the primary drivers for the protracted survey period. A total of 26 survey days were conducted over the time frame, with survey day trips averaging 4.6 hrs, facilitated by the proximity of the survey area to the UConn Avery Point campus.

Dataset Status: *Complete*

Update Frequency: *None planned*

Theme Keywords:

Connecticut, New York, Long Island Sound, Fishers Island Sound, estuary, phase measuring bathymetric sonar, interferometric sonar, Kongsberg Geoswath, RV Lowell Weicker, bathymetry, backscatter, side scan sonar, University of Connecticut, UConn, Long Island Sound Mapping and Research Collaborative, LISMaRC

Access Constraints: *None*

Use Constraints:

*Data and metadata are is licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 3.0 United States License](#). Appropriate acknowledgment with a byline/credit/link **must** be given to both the original scientists/data contributors by reference to their relevant publications and to the Marine Geoscience Data System (www.marine-geo.org) and/or the Long Island Sound Habitat Mapping website (<https://lismap.uconn.edu>). Where citation information has been provided to us by scientists it is included with the relevant database entries, and should be acknowledged when data are used. You may browse freely, but you may not circulate or publish materials you obtained from this site if you do not accept the terms of providing adequate citation.*

Data are provided with the express understanding that they will not be sold to third parties or included in commercial databases.

Users are strongly encouraged to contact the original investigators responsible for data made available on this site. Where appropriate, researchers are also encouraged to consider collaboration and/or co-authorship with original investigators.

Data should not be used for navigation purposes.

Point of Contact:

Ivar G. Babb, Department of Marine Sciences, University of Connecticut, 860-405-9123, ivar.babb@uconn.edu

Dataset Credit:

The Long Island Sound Mapping and Research Collaborative (LISMaRC). LISMaRC is the University of Connecticut, the University of New Haven and the US Geological Survey. Funding provided by the Long Island Sound Seafloor Mapping Fund administered cooperatively by the EPA Long Island Sound Study and the Connecticut Department of Energy and Environmental Protection (DEEP).

Data Quality Considerations: *See below*

Attribute accuracy:

The final bathymetry grids are in GeoTIFF (Raster) grid format, projected in WGS84 UTM 18N (EPSG: 32618) with 1m resolution.

Completeness:

The acoustic data products are complete.

Positional accuracy:

To improve survey accuracy and precision LISMaRC utilized UConn's ACORN (Advanced Continuously Operating Reference Network) that is composed of several receivers (GPS) that stream data to on-campus computers. The computers distribute the information to surveyors and mappers to help them in their work. ACORN allows highly accurate positioning in real time. This means that a location anywhere on or above the earth can be pinpointed within the

space of a dime. The ACORN maintains nine base stations in the state of Connecticut including two that provide coverage within the Phase II area. LISMaRC worked with ACORN staff to integrate this real-time network (RTN) into the navigation system on the Weicker to provide this much improved accuracy. A description of the ACORN can be found at: <http://naturally.uconn.edu/2014/07/29/this-is-not-your-cars-gps/> and the site network is <http://acorn.uconn.edu>

Process Steps:

This data set was acquired with a 250 kHz Kongsberg Geoswath Phase Measuring Bathymetry Sonar (PMBS) system mounted in the moon pool of Research Vessel (RV) Lowell Weicker. With a PMBS system the acoustic energy is propagated from the transducer downward in a beam that is narrow in the along-track dimension and wide in the across-track dimension. This method produces a line of depth measurements across-track, i.e. perpendicular to the research vessel's trackline. As the vessel moves forward, these profiles sweep out a ribbon-shaped surface of depth measurement.

Horizontal accuracy was provided by DGPS augmented by RTK corrections from the Advanced Continuous Operation Reference Network (ACORN). This is a Connecticut statewide system of base stations that provides real-time corrections for GPS equipment, operated by the University of Connecticut through a partnership with CTDOT (<http://acorn.uconn.edu>). Tides were corrected to MLLW based on tide gauge data from NOAA Tide Station at New London, Connecticut (Station ID: 8461490). Sound velocity profiles (SVP) were conducted every three hours to acquire sound speed data using UConn's Valeport SVP system. Data acquisition was performed using the Geoswath+ acquisition software and saved as .rff files for subsequent post-processing. The system recorded bathymetry and sidescan sonar data along with heave, pitch and roll data from a Seatex MRU-5 mounted on the Geoswath transducer. Positional information for all equipment (GPS, transducer, MRU) offsets and latencies can be found in the CARIS vessel file included with the raw data.

The surveys were conducted at a vessel speed between 4-5 knots (10 km/hr) to ensure data density sufficient to meet the NOAA recommendations. Due to the sampling gap at nadir generated by the interferometric system a 100% swath overlap was implemented to provide the recommended 100% coverage of bathymetric and backscatter data. The swath width (line spacing) was also maintained to not exceed the 5 x water depth, which in reality is a conservative approach for an interferometric system. A survey line spacing of 25 meters/side was used in shallow areas, while a 30-meter spacing was adopted for deeper areas.

The acquired bathymetry data were processed using CARIS software. The data were acquired and processed in two individual blocks. The final bathymetry grids are in GeoTIFF (Raster) grid format, projected in WGS84 UTM 18N (EPSG: 32618) with 1m resolution. The data were collected and assembled as part of the "The Long Island Sound Seafloor Mapping Initiative Phase II – Eastern Long Island Sound" project conducted by the Long Island Sound Mapping and Research Collaborative (LISMaRC, Principal Investigator: Ivar G. Babb).

Process Contact: Dennis Arbige, University of Connecticut, dennis.arbige@uconn.edu

Attributes:

Attribute: GeoTIFF - The bathymetry grids are in GeoTIFF (Raster) grid format, projected in WGS84 UTM 18N (EPSG: 32618) with 1m resolution

Metadata reference: *Ivar G. Babb, University of Connecticut, Department of Marine Sciences, 860-405-9123, ivar.babb@uconn.edu*

RAW GEOSWATH ACOUSTIC, TIDAL HEIGHT AND SOUND VELOCITY PROFILE DATA

METADATA

Dataset Originator: *University of Connecticut: Ivar G. Babb, Dennis Arbige*

Publication Date: 6/30/2021

Dataset Title: *Raw Geoswath Acoustic, Tidal Height And Sound Velocity Profile Data*

Online Linkage:

LDEO Data Repository - <http://www.marine-geo.org/portals/lis/>

Data_doi= [10.26022/IEDA/329913](https://doi.org/10.26022/IEDA/329913)

Data url= https://www.marine-geo.org/tools/search/Files.php?data_set_uid=29913

Abstract:

This data set is a compilation of the raw acoustic data and attendant auxiliary files (tidal heights, sound velocity profiles) collected by the University of Connecticut as part of the Long Island Sound Cable Fund Initiative in the Phase II area of eastern Long Island Sound. The data were collected using UConn's Kongsberg Geoswath Phase Measuring Bathymetric Sonar mounted on UConn's Research Vessel Weicker in 2017 and 2018. Specifically, the data were collected in gap areas 23, 24 and 25 identified by NOAA within the Phase II area. The raw data was archived in the native Geoswath .rff format and binned in "A" and "B" collections for the survey blocks 24 and 25 and block 23, respectively.

Dataset purpose:

This dataset provides the first order acoustic data collected along with the necessary tidal height and sound velocity profile data collected during the surveys. As such this data set could be utilized by others for re-analysis or integration with other similar data from the Long Island Sound. The data should not be used for navigation.

Time period of content:

The acoustic surveys to map the Survey Blocks 23, 24 and 25 were conducted over the course of a little more than one year from April 31, 2017 through to July 19, 2018. Seasonal considerations, ship and crew schedules were the primary drivers for the protracted survey period. A total of 26 survey days were conducted over the time frame, with survey day trips averaging 4.6 hours, facilitated by the proximity of the survey area to the UConn Avery Point campus.

Dataset Status: *Complete*

Update Frequency: *None planned*

Theme Keywords:

Connecticut, New York, Long Island Sound, Fishers Island Sound, estuary, phase measuring bathymetric sonar, interferometric sonar, , Kongsberg Geoswath, RV Lowell Weicker,

bathymetry, backscatter, side scan sonar, raw data, tidal height, sound velocity profile, University of Connecticut, UConn, Long Island Sound Mapping and Research Collaborative, LISMaRC

Access Constraints: *None*

Use Constraints:

*Data and metadata are is licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 3.0 United States License](#). Appropriate acknowledgment with a byline/credit/link **must** be given to both the original scientists/data contributors by reference to their relevant publications and to the Marine Geoscience Data System (www.marine-geo.org) and/or the Long Island Sound Habitat Mapping website (<https://lismap.uconn.edu>). Where citation information has been provided to us by scientists it is included with the relevant database entries, and should be acknowledged when data are used. You may browse freely, but you may not circulate or publish materials you obtained from this site if you do not accept the terms of providing adequate citation.*

Data are provided with the express understanding that they will not be sold to third parties or included in commercial databases.

Users are strongly encouraged to contact the original investigators responsible for data made available on this site. Where appropriate, researchers are also encouraged to consider collaboration and/or co-authorship with original investigators.

Data should not be used for navigation purposes.

Point of Contact:

Ivar G. Babb, Department of Marine Sciences, University of Connecticut, 860-405-9123, ivar.babb@uconn.edu

Dennis Arbige, University of Connecticut, dennis.arbige@uconn.edu

Dataset Credit:

The Long Island Sound Mapping and Research Collaborative (LISMaRC). LISMaRC is the University of Connecticut, the University of New Haven and the US Geological Survey. Funding provided by the Long Island Sound Seafloor Mapping Fund administered cooperatively by the EPA Long Island Sound Study and the Connecticut Department of Energy and Environmental Protection (DEEP).

Data Quality Considerations: *See below*

Attribute accuracy:

Raw Acoustic Data – Data acquisition was performed with a Kongsberg Geoswath Phase Measuring Bathymetric Sonar operating at 250 kHz using the Geoswath+ acquisition software to save raw data as .rff files. The system recorded bathymetry and sidescan sonar data with the following attributes:

<i>Sonar Frequency</i>	<i>Max water depth</i>	<i>Max swath width</i>	<i>Range</i>	<i>Resolution across track</i>	<i>2-way beam width</i>	<i>Depth resolution</i>	<i>Swath update rate (max)</i>
250 kHz	100 m	390 m	Up to 12x depth	1.5 cm	0.5° Azimuth	3 mm	Up to 30/s (range dependent)

Heave, pitch and roll data were recorded from a Seatex MRU-5 mounted on the Geoswath transducer, with the following attributes:

Model	Roll/pitch	Acceleration	Heave	PFree Heave	Period	PFree Period
MRU 5	0.02°	0.01 m/s ²	5 cm	2 cm	25 s	50s

Positional was ensured by the process outlined below, and positional information for all equipment (GPS, transducer, MRU) offsets and latencies can be found in the CARIS vessel file included with the raw data.

Sound Velocity Profiles - Sound velocity profiles (SVP) were conducted every three hours to acquire sound speed data using UConn's Valeport MiniSVP (S/N 41907) probe which was last factory calibrated on 21/02/2013. The unit was checked for drift in UConn's seawater test tank against a currently calibrated YSI unit before surveys were conducted. The SVP data files were edited and formatted for CARIS processing.

Tide Data – Tides were corrected to MLLW based on tide gauge data from NOAA Tide Station at New London, Connecticut (Station ID: 8461490). The tide data files are edited and formatted for CARIS processing.

Completeness:

The acoustic data products are complete.

Positional accuracy:

To improve survey accuracy and precision LISMaRC utilized UConn's ACORN (Advanced Continuously Operating Reference Network) that is composed of several receivers (GPS) that stream data to on-campus computers. The computers distribute the information to surveyors and mappers to help them in their work. ACORN allows highly accurate positioning in real time. This means that a location anywhere on or above the earth can be pinpointed within the space of a dime. The ACORN maintains nine base stations in the state of Connecticut including two that provide coverage within the Phase II area. LISMaRC worked with ACORN staff to integrate this real-time network (RTN) into the navigation system on the Weicker to provide this much improved accuracy. A description of the ACORN can be found at: <http://naturally.uconn.edu/2014/07/29/this-is-not-your-cars-gps/> and the site network is <http://acorn.uconn.edu>

Process Steps:

This data set was acquired with a 250 kHz Kongsberg Geoswath Phase Measuring Bathymetry Sonar (PMBS) system mounted in the moon pool of Research Vessel (RV) Lowell Weicker. With a PMBS system the acoustic energy is propagated from the transducer downward in a beam that is narrow in the along-track dimension and wide in the across-track dimension. This method produces a line of depth measurements across-track, i.e. perpendicular to the research vessel's trackline. As the vessel moves forward, these profiles sweep out a ribbon-shaped surface of depth measurement.

Horizontal accuracy was provided by DGPS augmented by RTK corrections from the Advanced Continuous Operation Reference Network (ACORN). This is a Connecticut statewide system of base stations that provides real-time corrections for GPS equipment, operated by the University of Connecticut through a partnership with CTDOT (<http://acorn.uconn.edu>). Tides were corrected to MLLW based on tide gauge data from NOAA Tide Station at New London, Connecticut (Station ID: 8461490). Sound velocity profiles (SVP) were conducted every three hours to acquire sound speed data using UConn's Valeport SVP system. Data acquisition was performed using the Geoswath+ acquisition software and saved as .rff files for subsequent post-processing. The system recorded bathymetry and sidescan sonar data along with heave, pitch and roll data from a Seatex MRU-5 mounted on the Geoswath transducer. Positional information for all equipment (GPS, transducer, MRU) offsets and latencies can be found in the CARIS vessel file included with the raw data.

The surveys were conducted at a vessel speed between 4-5 knots (10 km/hr) to ensure data density sufficient to meet the NOAA recommendations. Due to the sampling gap at nadir generated by the interferometric (PMBS) system a 100% swath overlap was implemented to provide the recommended 100% coverage of bathymetric and backscatter data. The swath width (line spacing) was also maintained to not exceed the 5 x water depth, a conservative approach for an interferometric system. A survey line spacing of 25 meters/side was used in shallow areas, while a 30-meter spacing was adopted for deeper areas.

The acquired side scan sonar data were processed using CARIS software. The data were acquired and processed in two individual blocks. The final side scan sonar mosaics are in GeoTIFF (Raster) grid format, projected in WGS84 UTM 18N (EPSG: 32618) with 1m resolution. The data were collected and assembled as part of the "The Long Island Sound Seafloor Mapping Initiative Phase II – Eastern Long Island Sound" project conducted by the Long Island Sound Mapping and Research Collaborative (LISMaRC, Principal Investigator: Ivar G. Babb).

Process Contact: Dennis Arbige, University of Connecticut, dennis.arbige@uconn.edu

Attributes:

Raw Data Files: *The Geoswath system recorded both bathymetry and sidescan sonar data*

Sound Velocity Profiles: *Data were recorded as .txt files, with columns for depth (meters), temperature (Celsius), and Sound Velocity (m/s).*

Tide Data: Data are presented in multiple formats including .csv (comma separated values), with columns for date/time (GMT) and depth (meters MLLW Verified).

Metadata reference: Ivar G. Babb, University of Connecticut, Department of Marine Sciences, 860-405-9123, ivar.babb@uconn.edu

Appendix 2-2: Sediment Texture and Grain Size Distribution Metadata

Sediment Texture and Grain Size Distribution Metadata

Note: the following metadata is presented using the Long Island Sound Cable Fund template, for the complete FGDC metadata see:

<https://www.sciencebase.gov/catalog/item/5de9be03e4b02caea0eeda45>

Dataset Originator: *US Geological Survey*

Publication Date: 2020/11/23

Dataset Title: *Location and grain-size analysis results of sediment samples collected in Long Island Sound, Connecticut and New York, in fall 2017 and spring 2018 by the U.S. Geological Survey, University of Connecticut, and University of New Haven during field activities 2017-056-FA and 2018-018-FA (simplified point shapefile and CSV files.*

Online Linkage:

<https://www.sciencebase.gov/catalog/file/get/5de9be03e4b02caea0eeda45>

<https://doi.org/10.5066/P9GK29NM>

Abstract: *Two marine geological surveys were conducted in Long Island Sound, Connecticut and New York, in fall 2017 and spring 2018 by the U.S. Geological Survey (USGS), University of Connecticut, and University of New Haven through the Long Island Sound Mapping and Research Collaborative. Sea-floor images and videos were collected at 210 sampling sites within the survey area, and surficial sediment samples were collected at 179 of the sites. The sediment data and the observations from the images and videos are used to identify sediment texture and sea-floor habitats.*

Dataset purpose: *This dataset provides access to the locations and grain-size analysis results of surficial sediments collected with a modified Van Veen grab sampler on the SEABed Observation and Sampling System (SEABOSS) aboard the Research Vessel (R/V) Connecticut during USGS field activities 2017-056-FA (November 28 to December 3, 2017) and 2018-018-FA (May 8 to 15, 2018). These data were collected to explore the nature of the sea floor and to characterize the seabed by identifying sediment texture. The sediments were analyzed using two different methods: the Beckman Coulter Multisizer 3 and sieving of the 4-phi fraction, and the HORIBA LA-960 laser diffraction analyzer and sieving of the -2-phi fraction. The HORIBA LA-960 laser diffraction analyzer is a new method for analyzing grain-size distribution at the sediment laboratory at the USGS Woods Hole Coastal and Marine Science Center. This dataset was analyzed using both methods so that the results could be compared. Results of the comparison are not included in this data release.*

Time period of content: Data were collected on the following dates: 2017/11/28-2017/12/03 and 2018/05/08-2018/05/15

Dataset Status: *Complete*

Update Frequency: *None planned*

Theme Keywords:

U.S. Geological Survey
USGS
Coastal and Marine Hazards and Resources Program
CMHRP
Woods Hole Coastal and Marine Science Center
WHCMSC
University of Connecticut
UConn
Northeast Underwater Research, Technology and Education Center
NURTEC
University of New Haven
Long Island Sound Habitat Mapping
Long Island Sound Mapping and Research Collaborative
LISMaRC
ground-truth
seafloor samples
sediment samples
sediment data
surficial sediment classification
stations
seafloor
sea floor
marine geology
sediments
SEABOSS
SEABed Observation and Sampling System
Van Veen grab sampler
Beckman Coulter Multisizer 3
HORIBA LA-960 laser diffraction analyzer
gravel
sand
silt
clay
CSV
shapefile
field activity 2017-056-FA
field activity 2018-018-FA
R/V Connecticut
grab sampling
grain-size analysis
marine geology
sea-floor characteristics

North America
United States
Atlantic Ocean
Connecticut
New York

*Long Island Sound
Fishers Island
Fishers Island Sound*

Access Constraints: *None*

Use Constraints:

Public domain data from the U.S. Government are freely redistributable with proper metadata and source attribution. Please recognize the U.S. Geological Survey as the originator of the dataset.

*“Data and metadata are is licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 3.0 United States License](#). Appropriate acknowledgment with a byline/credit/link **must** be given to both the original scientists/data contributors by reference to their relevant publications and to the Marine Geoscience Data System (www.marine-geo.org). Where citation information has been provided to us by scientists it is included with the relevant database entries, and should be acknowledged when data are used. You may browse freely, but you may not circulate or publish materials you obtained from this site if you do not accept the terms of providing adequate citation.*

Data are provided with the express understanding that they will not be sold to third parties or included in commercial databases.

Users are strongly encouraged to contact the original investigators responsible for data made available on this site. Where appropriate, researchers are also encouraged to consider collaboration and/or co-authorship with original investigators.

Data should not be used for navigation purposes.”

Point of Contact: *Seth Ackerman, U.S. Geological Survey, 384 Woods Hole Road, Woods Hole, MA 02543-1598 USA. Phone: 508-548-8700 x2315, Fax: 508-457-2310, email: sackerman@usgs.gov*

Dataset Credit: *US Geological Survey*

Data Quality Considerations:

Attribute accuracy: *All attributes were evaluated during data processing as standard quality control to ensure attributes contain accurate and relevant information and values. Due to rounding, the sum of the aggregate class percentages (e.g., GRAVEL (wt%), GRAVEL_PCT, etc.) and the sum of the phi fraction percentages (e.g., PHI_11, PHI_10, etc.) may not always add up to exactly 100.000%.*

The sediment samples were all collected with the same modified Van Veen grab sampler mounted on the SEABOSS. The sediment samples were usually collected at the end of the video trackline, but some samples were collected in the middle of the transect (sites NB30, SB50_3, NB65, SB65_2, and 2018-018-112). The samples were analyzed using two methods; separate subsamples were taken for each grain-size analysis. For the spring 2018 survey, the University of Connecticut's Northeast Underwater Research, Technology and Education Center (NURTEC) assigned different names to the sites, which are available in the comments field (COMMENTS). Some USGS site numbers (FIELD_NO) have the same NURTEC site

name (e.g., sites 2018-018-011 and 2018-018-012 are both NURTEC site NB64-T) because the NURTEC site names are based on the target sampling site names.

Physical sediment samples were collected at 179 of the 210 sites occupied during field activities 2017-056-FA and 2018-018-FA; however, locations for all 210 sites are included in the Multisizer analysis results (2017-056-FA_and_2018-018-FA_samples_GS-MS.csv and 2017-056-FA_and_2018-018-FA_samples_GS-MS.shp) with no data values (i.e., -9999) for those sites with no sediment sample analysis. Sediment samples were only attempted in areas where collecting a sample would not damage the SEABOSS; therefore, no samples were collected in areas with a cobble, boulder, or rocky seabed, as identified in real time using the topside live video feed. Samples were also not attempted if the current was too strong, if the deployment was aborted due to the strobe malfunctioning, or if the grab sampler accidentally tripped earlier in the deployment. Each deployment of the SEABOSS is generally considered a unique site; however, five sites (sites SB64_2, 2018-018-024, 2018-018-089, 2018-018-094, and 2018-018-104) had two separate deployments because a sediment grab was not successfully collected during the first deployment. The sediment sample locations for these five sites are from the second deployment when a grab sample was successfully collected. For the spring 2018 data, 14 samples were randomly selected and run as replicates using the laser diffraction analyzer for internal testing purposes. The replicate results are not included in this publication.

Completeness: *Complete*

Positional accuracy:

Horizontal Positional Accuracy: Navigation for field activities 2017-056-FA and 2018-018-FA used Wide Area Augmentation System (WAAS)-enabled GPS. The GPS was set to receive fixes at a 2-second interval in geographic coordinates (World Geodetic System of 1984 [WGS 84]). The recorded position of each sediment sample is the position of the GPS antenna on the survey vessel, located on the aft port side of the R/V Connecticut, not the location of the SEABOSS. The antenna was located approximately 5 meters from the SEABOSS deployment location in fall 2017 and 3 meters in spring 2018. No layback or offset was applied to the recorded position. In addition, the SEABOSS may drift away from the survey vessel when deployed to the sea floor. Based on the various sources of horizontal offsets, a conservative estimate of the horizontal accuracy of the sediment sample locations is 10 meters. The sites with no successful grab included in the Multisizer results are located along the bottom video trackline at the start of the SEABOSS retrieval. Some of these site locations did not originally intersect a bottom video trackline and were moved to the last navigation fix along the site's bottom video trackline.

Vertical Positional Accuracy: The depths recorded for each sample are approximate and were derived from an unpublished composite bathymetry dataset used by the Long Island Sound Mapping and Research Collaborative project.

Process Steps:

Step 1: Collected data.

Two marine geological surveys were conducted in Long Island Sound, Connecticut and New York, in fall 2017 and spring 2018. The R/V Connecticut occupied one of the target sites and

the SEABOSS was deployed off the vessel's A-frame on the stern of the ship. The SEABOSS was equipped with a modified Van Veen grab sampler, a Nikon D300 digital still camera with a Photosea strobe, two video cameras (one forward-looking so that a shipboard operator could monitor for proper tow depth and obstacles, and one downward-looking, a Kongsberg Simrad OE1365 in this setup, that overlapped with the field of view of the still camera) with a topside feed, a GoPro HERO4 Black camera recording backup video, and lights to illuminate the sea floor for video and photograph collection. The elements of this particular SEABOSS were held within a stainless-steel frame that measured 1.15 x 1.15 meters. The frame had a stabilizer fin that oriented the system as it drifted over the seabed. The winch operator lowered the SEABOSS until the sea floor was observed in the topside live video feed. For those sites that were primarily targeted for a sediment grab, the vessel and SEABOSS then drifted with wind and current for up to a few minutes to ensure a decent image with a clear view of the sea floor was acquired; for those sites that were targeted for both a video transect of the sea floor and a sediment grab, the vessel was navigated along a planned transect for up to an hour. A scientist monitored the real-time bottom video and acquired bottom photographs at points of interest by remotely triggering the Nikon camera shutter. Bottom video was also recorded during the drift from the downward-looking video camera. Then, at most sites the winch operator lowered the Van Veen grab sampler until it rested on the sea floor. When the system was raised, the Van Veen grab sampler closed and collected a sample as it was lifted off the sea floor. Times for the sampler retrieval, which would later be used to derive the sample locations, were manually recorded in the survey log when the sampler was lifted off the seabed. The sampler was recovered to the deck of the survey vessel where a subsample was taken for grain-size analysis at the sediment laboratory at the USGS Woods Hole Coastal and Marine Science Center. Sediment samples were only attempted in areas where collecting a sample would not damage the SEABOSS; therefore, no samples were collected in areas with a cobble, boulder, or rocky seabed, as identified in real time using the topside live video feed. Samples were also not attempted if the current was too strong, if the deployment was aborted due to the strobe malfunctioning, or if the grab sampler accidentally tripped earlier in the deployment. A total of 210 sites were occupied aboard the R/V Connecticut with the SEABOSS: 93 sites were occupied in fall 2017 during field activity 2017-056-FA, and 117 sites were occupied in spring 2018 during field activity 2018-018-FA. Sediment samples were collected at 179 of the 210 sites.

Step 2: Acquired and processed navigation.

During the surveys, WAAS-enabled GPS navigation from a Garmin GPSMAP 76C receiver was logged through a DataBridge data logger and ArcMap GPS. The GPS was set to receive fixes at a 2-second interval in geographic coordinates (WGS 84). Dates and times were recorded in Coordinated Universal Time (UTC). Log files were saved for each Julian day in text format. An AWK script (parse_gprmc17056.awk for the fall 2017 log files and parse_gprmc18018.awk for the spring 2018 log files) was used to parse the GPRMC navigation string from the log files for each survey and create ASCII Comma Separated Values (CSV) text files. The output files were merged for each survey and then reformatted using an AWK script (nav_time_reformat.awk), creating a processed navigation CSV text file for each sampling survey

Step 3: Assembled sample information for sediment laboratory.

The sediment sample times (as recorded in the survey logs) were used to parse GPS positions for each sediment sample from the logged GPS data. Approximate depths for each sample were derived from an unpublished composite bathymetry dataset used by the Long Island Sound Mapping and Research Collaborative project. This information was then provided to the sediment laboratory at the USGS Woods Hole Coastal and Marine Science Center with the sample analysis request form for each survey.

Step 4: Analyzed sediment samples using the HORIBA LA-960 laser diffraction analyzer and sieving of the -2-phi fraction.

The samples from each survey were analyzed in the sediment laboratory at the USGS Woods Hole Coastal and Marine Science Center using two different methods: the Beckman Coulter Multisizer 3 and sieving of the 4-phi fraction, and the HORIBA LA-960 laser diffraction analyzer and sieving of the -2-phi fraction. Separate subsamples were taken from each sample submitted to the sediment analysis laboratory for each method. For the sediments analyzed using the HORIBA LA-960 laser diffraction analyzer and sieving of the -2-phi fraction, the subsamples for grain-size analysis were assigned unique analysis identifiers (ANALYSIS_ID) and divided into batches of no more than 30 samples. Each batch was entered into a Microsoft Excel data entry spreadsheet (LD Worksheet Template_XXXX.xlsx, where XXXX is the identifier assigned to the sample submission) to record the initial and dried sample weights, as well as the sieved coarse fraction weights. Each batch was also entered into macro-enabled Microsoft Excel data entry spreadsheets (GrainSizeWorksheet_LD1-30_XXXX(batch_yy).xslm or GrainSizeWorksheet_LD31-60_XXXX(batch_yy).xslm, where XXXX is the identifier assigned to the sample submission, "LD1-30" and "LD31-60" refer to the pre-labeled and weighed glass laser diffraction vials in which the samples will be run, and "batch_yy" refers to the sample batch) to record the measurement data coming from the laser diffraction unit and incorporate the initial, dried, and sieved weights. About 10-15 grams of wet sediment were placed in a pre-weighed beaker and the gross weight was recorded. The sample was wet sieved through a 4 mm (No. 5) sieve. If there was any coarse fraction remaining in the sieve, the coarse material was oven dried at 100 degrees Celsius in a pre-weighed beaker, and weighed again when dry. This coarse fraction was dry sieved to determine the individual weights of the -2- to -5-phi fractions, and the weights were recorded in the data entry spreadsheet LD Worksheet Template_XXXX.xlsx. The fine fraction in water was collected in a pre-labeled and weighed glass laser diffraction vial. If there was any coarse fraction remaining in the sieve from wet sieving, this vial was also oven dried at 100 degrees Celsius and weighed when dry. If there was no coarse fraction remaining from wet sieving, the sample can proceed directly to processing for analyses by the HORIBA LA-960 laser diffraction unit. Fine fractions ready for analysis by the HORIBA laser diffraction unit were rehydrated with distilled water if they had been dry. Fifteen (15) ml of pre-mixed 40 g/l sodium hexametaphosphate [(NaPO₃)₆] were added to each sample. If the height of the fluid in the laser diffraction vial was less than 5 cm, more distilled water was added to raise the level to no more than 8 cm in the vial. The samples were gently stirred, covered, and allowed to soak for at least 1 hour (for samples that were not dried) or up to 24 hours (for samples that were dried). Soaked vials were placed into an ultrasonic bath and run for 10 minutes at a frequency of 37 Hz with a power level of 100. If the samples appeared to be fully disaggregated, they were placed into pre-determined autosampler locations and were run using the HORIBA LA-960 for Windows software to get the fine fraction grain-size

distributions. The fine fraction distribution data were added to the appropriate data entry spreadsheets (GrainSizeWorksheet_LD1-30_xxxx(batch_yy).xslm or GrainSizeWorksheet_LD31-60_xxxx(batch_yy).xslm) for each survey. The spreadsheet for each survey was used to calculate a continuous phi class distribution from the original fractions.

Step 5: Analyzed sediment samples using the Beckman Coulter Multisizer 3 and sieving of the 4-phi fraction.

The subsamples for grain-size analysis using the Beckman Coulter Multisizer 3 and sieving of the 4-phi fraction were assigned unique analysis identifiers (ANALYSIS_ID), and a macro-enabled Microsoft Excel data entry spreadsheet (GrainSizeWorksheet_xxxx.xslm, where xxxx is the batch number assigned to the sample submission) was created for each survey to record the measurement data. About 50 grams of wet sediment were placed in a pre-weighed beaker, weighed, oven dried at 100 degrees Celsius, and reweighed to correct for salt. The dried sample was wet sieved through a 0.062 mm (No. 230) sieve. The coarse fraction remaining in the sieve was oven dried at 100 degrees Celsius (until completely dried) and weighed. The fine fraction in water was collected in a plastic Nalgene bottle and sealed with a screw lid (stored for no longer than one week). The coarse fraction was dry sieved to determine the individual weights of the 4- to -5-phi fractions, and the weights were recorded in the data entry spreadsheet. The fine fraction was run and combined using the 200-micron and 30-micron Coulter analyses using the Multisizer 3 software to get the fine fraction grain-size distribution for each survey. The fine fraction distribution data were added to the data entry spreadsheet for each survey. The spreadsheet for each survey was used to calculate a continuous phi class distribution from the original fractions.

Step 6: Calculated grain-size classification and statistical analyses.

A continuous phi class distribution from the original fractions was transposed to the "results" tab in the macro-enabled Microsoft Excel data entry workbook (GrainSizeWorksheet_LD1-30_xxxx(batch_yy).xslm or GrainSizeWorksheet_LD31-60_xxxx(batch_yy).xslm for the laser diffraction results, where xxxx is the identifier assigned to the sample submission, "LD1-30" and "LD31-60" refer to the pre-labeled and weighed glass laser diffraction vials in which the samples were run, and "batch_yy" refers to the sample batch; or GrainSizeWorksheet_xxxx.xslm for the Multisizer results, where xxxx is the identifier assigned to the sample submission) for each survey. Macros in the workbook ("GS_MoM_Arithmetic," "GS_statistics," and "sedimentname" for the laser diffraction results, and "GS_statistics" and "sedimentname" for the Multisizer results) were run to calculate grain-size classification and statistical analyses and finish processing the data. Sample, navigation, and field identifiers along with continuous phi class distribution data, grain-size classification, and statistical analysis results were copied and pasted into a final Microsoft Excel spreadsheet (xxxx_GS-LD_results.xlsx for the laser diffraction results and xxxx_GS-MS_results.xlsx for the Multisizer results, where xxxx is the batch number assigned to the sample submission) for each survey. The processed data were quality control checked and assigned a quality grade based on the examination of the analytical data. Processed data were released to the submitter and incorporated into the laboratory's database. All raw analytical data generated by the samples were archived in the sediment analysis laboratory.

Step 7: Created final sediment grain-size analysis results CSV files.

For the laser diffraction results, the sediment grain-size analysis results spreadsheets for each survey were merged in Microsoft Excel 2016 for Mac and then edited to remove the quality grade and metric distribution fields and to format fields. The Microsoft Excel spreadsheet was then saved as a CSV file (2017-056-FA_and_2018-018-FA_samples_GS-LD.csv). For the Multisizer results, the sediment grain-size analysis results spreadsheets for each survey were merged in Microsoft Excel 2016 for Mac and then edited to remove some fields, format fields, add site locations for those sites where no sample was successfully collected, and add a no data value (-9999) to empty attributes as needed. The sites with no successful grab were located using the start time of the sampler retrieval from the survey logs; the sampler retrieval position was chosen as the sample location because the video clip is considered the sample in the absence of a physical sample. Some of these site locations from the survey logs did not intersect a bottom video trackline, so they were moved to the last navigation fix along the site's bottom video trackline. Finally, the Microsoft Excel spreadsheet was saved as a CSV file (2017-056-FA_and_2018-018-FA_samples_GS-MS.csv). This process step and the subsequent process step were performed by the same person, Emily Huntley.

Step 8: Created a simplified sediment grain-size analysis results shapefile from the Multisizer analysis.

The CSV file of the sediment grain-size analysis results from the Multisizer analysis was copied and edited to create a simplified version of the CSV file with fewer attribute fields (specifically, STDEV, SKEWNESS, KURTOSIS, and the individual phi measurements [e.g., PHI_11] were removed). A shapefile was created using the simplified version of the CSV file in Esri ArcGIS (version 10.3.1), and XTools Pro (version 12.0) for Esri ArcGIS was used to modify some field parameters in the point shapefile (Table Operations - Table Restructure). Please note that this metadata file represents the CSV file; users should access the CSV file for the full sediment grain-size analysis results.

Attributes:

ANALYSIS_ID

An identifier for the sample that is unique to the database. This identifier begins with the assigned multi-letter code GS-, which corresponds to the type of analysis performed on the sample (grain-size analysis), followed by a six-digit number assigned sequentially as samples are registered for analysis.

SAMPLE_ID

The identification value assigned to the sample at the time of collection. This varies from field activity to field activity, and the ID can contain any combination of letters and numbers.

FAN

The serial number assigned to the dataset field activity during which the sample was collected. This value is in the format YYYY-XXX-FA where YYYY is the year, XXX is the number assigned to the activity within the year, and FA indicates Field Activity.

LATITUDE

Latitude coordinate, in decimal degrees (WGS 84), of sample location. South latitude is recorded as negative values.

LONGITUDE

Longitude coordinate, in decimal degrees (WGS 84), of sample location. West longitude is recorded as negative values.

DEPTH_M

Approximate depth of water in meters at the sample location derived from an unpublished composite bathymetry dataset used by the Long Island Sound Mapping and Research Collaborative.

T_DEPTH

Top depth of the sample below the sediment-water interface in centimeters.aborative project.

B_DEPTH

Bottom depth of the sample below the sediment-water interface in centimeters.

DEVICE

Sampling device used to collect the sample.

DATE COLLECTED

Calendar date based on UTC time indicating when the sample was collected in the format MM/DD/YYYY where MM is the numeric month, DD is the day of the month, and YYYY is the year.

ANALYSIS COMPLETION DATE

Calendar date indicating when analyses on the sample were completed in the format MM/DD/YYYY where MM is the numeric month, DD is the day of the month, and YYYY is the year.

ANALYSIS METHOD

Method used to analyze the sample for grain-size distribution. Grain-size analysis using the HORIBA laser diffraction unit and sieving of the ≥ -2 phi fraction.

WEIGHT WET SAMPLE (g)

Weight of initial sample in grams

GRAVEL (wt%)

Gravel content in percent dry weight of the sample. Gravel consists of particles with nominal diameters greater than 2 mm (-1 phi and larger).

SAND (wt%)

Sand content in percent dry weight of the sample. Sand consists of particles with nominal diameters less than 2 mm, but greater than or equal to 0.0625 mm (0 phi through 4 phi, inclusive).

SILT (wt%)

Silt content in percent dry weight of the sample. Silt consists of particles with nominal diameters less than 0.0625 mm, but greater than or equal to 0.004 mm (5 phi through 8 phi, inclusive).

CLAY (wt%)

Clay content in percent dry weight of the sample. Clay consists of particles with nominal diameters less than 0.004 mm (9 phi and smaller).

CLASSIFICATION (Shepard)

Sediment classification based on a rigorous definition (Shepard [1954] as modified by Schlee and Webster [1967], Schlee [1973], and Poppe and others [2005]). In the definitions below, gravel is defined as particles with nominal diameters greater than 2 mm; sand consists of particles with nominal diameters less than 2 mm, but greater than or equal to 0.0625 mm; silt consists of particles with nominal diameters less than 0.0625 mm, but greater than or equal to 0.004 mm; and clay consists of particles with nominal diameters less than 0.004 mm.

The shapefile is a simplified version of the CSV file of the Multisizer analysis results (2017-056-FA_and_2018-018-FA_samples_GS-MS.csv) with fewer attribute fields. Specifically, STDEV, SKEWNESS, KURTOSIS, and the individual phi measurements (e.g., PHI_11) were removed. The shapefile also has two additional attributes, FID and Shape, which have the following descriptions:

Attribute:

Attribute Label: FID

Attribute Definition: Internal feature number.

Attribute Definition Source: Esri

Attribute Domain Values:

Unrepresentable Domain: Sequential unique whole numbers that are automatically generated.

Attribute:

Attribute Label: Shape

Attribute Definition: Feature geometry.

Attribute Definition Source: Esri

Attribute Domain Values:

Unrepresentable Domain: Coordinates defining the features.

All the other attributes in the shapefile have the same definitions as the CSV file attributes (see the detailed description section for the 2017-056-FA_and_2018-018-FA_samples_GS-

MS entity for definitions of the CSV file attributes). Please note that some of the field names were truncated since a shapefile field name can only contain up to 10 characters. The following fields are included in the shapefile: FID, Shape, ANALYSIS_I (truncated field name for ANALYSIS_ID), FIELD_NO, PROJECT, FA_ID, CONTACT, AREA, LATITUDE, LONGITUDE, DEPTH_M, T_DEPTH, B_DEPTH, DEVICE, DATE_COLLE (truncated field name for DATE_COLLECTED), ANALYSIS_C (truncated field name for ANALYSIS_COMPLETION_DATE), WEIGHT, GRAVEL_PCT, SAND_PCT, SILT_PCT, CLAY_PCT, CLASSIFICA (truncated field name for CLASSIFICATION), MEDIAN, MEAN, ANALYST, and COMMENTS.

Metadata reference: *Seth Ackerman, U.S. Geological Survey, 384 Woods Hole Road, Woods Hole, MA 02543-1598 USA. Phone: 508-548-8700 x2315, Fax: 508-457-2310, email: sackerman@usgs.gov*

Appendix 2-3: Ecological Characterization Metadata

[Appendix 2-3-1 - Acoustic patch type and CMECS metadata](#)

[Appendix 2-3-2 – Infaunal community characteristics, classification and related environmental data metadata](#)

[Appendix 2-3-3 – Infaunal Excel database metadata](#)

[Appendix 2-3-4 – Epifauna 2017-2018 SEABOSS, ROV and wet diving and CMECS metadata](#)

[Appendix 2-3-5 – Epifaunal 2017 SEABOSS community characteristics, classification and related environmental data metadata](#)

[Appendix 2-3-6 – Epifaunal 2018 SEABOSS and ROV community characteristics, classification and related environmental data metadata](#)

[Appendix 2-3-7 – Wet diving image metadata](#)

[Appendix 2-3-8 – Wet diving suction sample metadata](#)

[Appendix 2-3-9 – 2017 SEABOSS diversity metadata](#)

[Appendix 2-3-10 – 2018 SEABOSS diversity metadata](#)

[Appendix 2-3-11 – 2017-2018 SEABOSS select feature abundance metadata](#)

[Appendix 2-3-12 – 2017-2018 SEABOSS Simper cluster metadata](#)

[Appendix 2-3-13 – 2017-2018 SEABOSS select taxa metadata](#)

Acoustic Patch Types and CMECS (Coastal and Marine Ecological Classification Standard) Classifications in the Long Island Sound Cable Fund Initiative Phase II area of eastern Long Island Sound

METADATA

Dataset Originator: *University of New Haven; Roman N. Zajac*

Publication Date: *6/30/2021*

Dataset Title: *Acoustic patch types and CMECS classification in eastern Long Island Sound.*

Online Linkage: *<http://www.marine-geo.org/portals/lis/>*

Abstract: *This shapefile contains the acoustic patch types determined for the Long Island Sound Cable Fund Initiative Phase II area of eastern Long Island Sound, and CMECS (Coastal and Marine Ecological Classification Standard) classification for each patch type. Acoustic patch types were determined by image segmentation of the NOAA backscatter mosaic of the Phase II study area (<https://www.ncei.noaa.gov/access/metadata/landing-page/bin/iso?id=gov.noaa.nodc:167531>) using eCognition 9.2 software (<https://geospatial.trimble.com/products-and-solutions/ecognition>). Each acoustic patch type has a general sediment classification based on analyses of sediment grain-size data collected by the USGS (see Final Report, Sections 3.0 and 4.0). The acoustic patch types represent general sea floor habitat types and used as the basis for portions of the analyses and characterizations of infaunal and epifaunal ecological structure across the Phase II area.*

Dataset purpose: *This polygon shapefile and dataset provides the spatial distribution of general seafloor types in the Phase II study area which can be used to assess the relationship to the map the spatial characteristics of Infaunal and epifaunal communities to meet the Long Island Sound Cable Fund's goal of habitat and ecological characterization of the eastern Long Island Sound sea floor.*

Time period of content: *Analyses leading to the identification and characterization of the acoustic patch types were conducted during 2018 and 2019*

Dataset Status: *Complete*

Update Frequency: *None Planned*

Theme Keywords: *Sea floor habitats, acoustic patch types, Coastal and Marine Ecological Classification Standard, CMECS, Connecticut, New York, Long Island Sound, Fishers Island Sound, estuary, Long Island Sound Mapping and Research Collaborative, LISMaRC*

Access Constraints: *none*

Use Constraints:

Data and metadata are licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 3.0 United States License](#). Appropriate acknowledgment with a byline/credit/link must be given to both the original scientists/data contributors by reference to their relevant publications and to the Marine Geoscience Data System (www.marine-geo.org). Where citation information has been provided to us by scientists it is included with the relevant database entries, and should be acknowledged when data are used. You may browse freely, but you may not circulate or publish materials you obtained from this site if you do not accept the terms of providing adequate citation.

Data are provided with the express understanding that they will not be sold to third parties or included in commercial databases.

Users are strongly encouraged to contact the original investigators responsible for data made available on this site. Where appropriate, researchers are also encouraged to consider collaboration and/or co-authorship with original investigators.

Data should not be used for navigation purposes.

Point of Contact: Roman N. Zajac, University of New Haven, rzajac@newhaven.edu

Dataset Credit: *The Long Island Sound Mapping and Research Collaborative (LISMaRC). LISMaRC is the University of Connecticut, the University of New Haven and the US Geological Survey. Funding provided by the Long Island Sound Seafloor Mapping Fund administered cooperatively by the EPA Long Island Sound Study and the Connecticut Department of Energy and Environmental Protection (DEEP).*

Data Quality Considerations: *see below*

Attribute accuracy: *All attributes were evaluated during data processing and analysis as standard quality control to ensure attributes contain accurate and relevant information and values.*

Completeness: *The information provided on infaunal communities is complete*

Positional accuracy: *see*

<https://www.ncei.noaa.gov/access/metadata/landing-page/bin/iso?id=gov.noaa.nodc:167531>
for details regarding the development the backscatter mosaic by NOAA and the positional accuracy of image features. The patch locations identified by the image segmentation are the results of the image segmentation and classification process.

Process Steps: *The NOAA backscatter image was segmented using the unsupervised routines in eCognition 9.2 software. Segments were then classified and consolidated based on the image pixel attributes (pixel similarity, pixel variance, distance, and other metrics; see Final Report section 4.0) and seeding the analysis with selected segments that were identified based on general backscatter attributes (e.g. darker areas being associated with finer sediments, and lighter areas being associated with coarser sediments). The final sediment classification were based on analyses of USGS sediment data at locations where infaunal samples were collected*

that fell within specific acoustic patch types. The CMECS classifications are based on the general attributes found in each acoustic patch type based on analyses of environmental data (sediment composition, depth, bed stress) and results from analyses of Infaunal and epifaunal communities, as well as other attributes in photographic images (e.g., surficial features such as shell hash).

Attributes:

FIELD_NO: Sediment sample designation

LONGITUDE: see

https://www.sciencebase.gov/catalog/file/get/5de9be03e4b02caea0eeda45?f=disk_b1%2Fe4%2F74%2Fb1e47494caa95e6a54c32f270518094926f78286&transform=1&allowOpen=true

LATITUDE: see:

https://www.sciencebase.gov/catalog/file/get/5de9be03e4b02caea0eeda45?f=disk_b1%2Fe4%2F74%2Fb1e47494caa95e6a54c32f270518094926f78286&transform=1&allowOpen=true

FID: ArcGIS Polygon identifier

Area: Area of Polygon

Perimeter: Perimeter of Polygon

Acoustic_Pa: Acoustic Patch Type designation

Physical_S: Physical Setting; Physical setting classifier based on CMECS

Geoform: Geomorphological classifier based on CMECS

Substrate: General acoustic patch type sediment classification plus addition of shell

Physical_1: General physical conditions in each acoustic patch type based on depth, terrain ruggedness, and seafloor bed stress

Biogenic_S: Biogenic Setting; General biogenic substrate characteristics in each of the acoustic patch types

Biotic_Set: Biotic Setting; biotic setting classifier based on CMECS modified for both infaunal and epifaunal components

Biotic_Cla: Biotic Class; biotic class designation based on CMECS modified for both infaunal and epifaunal components as well as variability among acoustic patch types

Biotic_Sub: Biotic Subclass; general biotic subclass classifier based on CMECS modified for both Infaunal and epifaunal components

Biotic_Gro: Biotic Group Epifauna; general types of epifauna found in specific acoustic patch types

Epi_and_Em: Epi- and Emergent Fauna Notes; dominant epifauna found in specific acoustic patch types and their relative abundances, with notes and seasonal occurrences as appropriate

Biotic_G_1: Biotic Group Infauna; general types of infauna found in specific acoustic patch types

Infauna_No: Infauna Notes; dominant infauna found in specific acoustic patch types with identification of rarer species that may have ecological significance

Metadata reference: Roman N. Zajac, University of New Haven, rzajac@newhaven.edu, Chris Conroy, University of Connecticut/University of New Haven, cwconroy@newhaven.edu, Peter Auster, University of Connecticut, peter.auster@uconn.edu

Infaunal Community Characteristics, Classification and Related Environmental Data in the Long Island Sound Cable Fund Initiative Phase II area of eastern Long Island Sound

METADATA

Dataset Originator: *University of New Haven; Roman N. Zajac*

Publication Date: *6/30/2021*

Dataset Title: *Community characteristics, classification and related environmental data at infaunal sample sites in eastern Long Island Sound.*

Online Linkage: *<http://www.marine-geo.org/portals/lis/>*

Abstract: *This shapefile contains derived infaunal community characteristics (total abundance, taxonomic richness, diversity, community type), CMECS (Coastal and Marine Ecological Classification Standard) classification and related environmental data for each infaunal sample site in the Long Island Sound Cable Fund Initiative Phase II area of eastern Long Island Sound. The data were collected using the USGS SEABOSS system on the Research Vessel Connecticut (University of Connecticut) in November/December 2017 and May 2018.*

Dataset purpose: *This dataset provides detailed information on the infaunal communities in the Phase II study area which can be used to map the spatial characteristics of these communities relative to several environmental features to meet the Long Island Sound Cable Fund's goal of ecological characterization of the Long Island Sound sea floor in conjunction with habitat mapping efforts.*

Time period of content: *These data were collected over a 10 day spans in November / December 2017 and May 2018*

Dataset Status: *Complete*

Update Frequency: *None Planned*

Theme Keywords: *Benthic ecology, Infauna, Sea floor communities, Coastal and Marine Ecological Classification Standard, CMECS, Connecticut, New York, Long Island Sound, Fishers Island Sound, estuary, Long Island Sound Mapping and Research Collaborative, LISMaRC*

Access Constraints: *none*

Use Constraints:

Data and metadata are licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 3.0 United States License](https://creativecommons.org/licenses/by-nc-sa/3.0/). Appropriate acknowledgment with a byline/credit/link must be given to both the original scientists/data contributors by reference to their relevant publications and to the Marine Geoscience Data System (www.marine-geo.org). Where citation information has been provided to us by scientists it is included with the relevant database entries, and should

be acknowledged when data are used. You may browse freely, but you may not circulate or publish materials you obtained from this site if you do not accept the terms of providing adequate citation.

Data are provided with the express understanding that they will not be sold to third parties or included in commercial databases.

Users are strongly encouraged to contact the original investigators responsible for data made available on this site. Where appropriate, researchers are also encouraged to consider collaboration and/or co-authorship with original investigators.

Data should not be used for navigation purposes.

Point of Contact: *Roman N. Zajac, University of New Haven, rzajac@newhaven.edu*

Dataset Credit: *The Long Island Sound Mapping and Research Collaborative (LISMaRC). LISMaRC is the University of Connecticut, the University of New Haven and the US Geological Survey. Funding provided by the Long Island Sound Seafloor Mapping Fund administered cooperatively by the EPA Long Island Sound Study and the Connecticut Department of Energy and Environmental Protection (DEEP).*

Data Quality Considerations: *see below*

Attribute accuracy: *All attributes were evaluated during data processing and analysis as standard quality control to ensure attributes contain accurate and relevant information and values.*

Completeness: *The information provided on infaunal communities is complete*

Positional accuracy:

Horizontal Positional Accuracy: Navigation during both the 2017 and 2018 sample collection periods used Wide Area Augmentation System (WAAS)-enabled GPS. The GPS was set to receive fixes at a 2-second interval in geographic coordinates (World Geodetic System of 1984 [WGS 84]). The recorded position of each sediment sample is the position of the GPS antenna on the survey vessel, located on the aft port side of the R/V Connecticut, not the location of the SEABOSS. The antenna was located approximately 5 meters from the SEABOSS deployment location in fall 2017 and 3 meters in spring 2018. No layback or offset was applied to the recorded position. In addition, the SEABOSS may drift away from the survey vessel when deployed to the sea floor. Based on the various sources of horizontal offsets, a conservative estimate of the horizontal accuracy of the sediment sample locations is 10 meters.

Vertical Positional Accuracy: The depths recorded for each sample are approximate and were derived from an unpublished composite bathymetry dataset used by the Long Island Sound Mapping and Research Collaborative project.

Process Steps: *Sediment samples were obtained using the USGS SEABOSS system were washed on a 1 mm sieve using filtered seawater and preserved in 70% ethanol. Several samples were*

washed on a 0.5 mm sieve. Samples were sorted using a dissecting microscope and all individuals identified to the lowest taxonomic level possible. For each sample the total abundance and taxonomic richness was calculated, as well sample diversity using the Shannon diversity index H' . The entire data set was analyzed using a variety of multivariate statistical approaches to assess and identify community types. The CMECS classification system was applied to each sample using both CMECS defined classifiers as well as modified classifiers for Biotic Groups (see below). Additional information on infaunal communities is provided in two additional classification levels there added, Biotic Community and Other Elements.

Attributes:

FIELD_NO: Sediment sample designation

LONGITUDE: see

https://www.sciencebase.gov/catalog/file/get/5de9be03e4b02caea0eeda45?f=disk_b1%2Fe4%2F74%2Fb1e47494caa95e6a54c32f270518094926f78286&transform=1&allowOpen=true

LATITUDE: see:

https://www.sciencebase.gov/catalog/file/get/5de9be03e4b02caea0eeda45?f=disk_b1%2Fe4%2F74%2Fb1e47494caa95e6a54c32f270518094926f78286&transform=1&allowOpen=true

DEPTH_M: Approximate depth of water in meters at the sample location derived from an unpublished composite bathymetry dataset used by the Long Island Sound Mapping and Research Collaborative project.

GRAVEL_PCT: Gravel content in percent dry weight of the sample. Gravel consists of particles with nominal diameters greater than 2 mm (-1 phi and larger).

SAND_PCT: Sand content in percent dry weight of the sample. Sand consists of particles with nominal diameters less than 2 mm, but greater than or equal to 0.0625 mm (0 phi through 4 phi, inclusive).

SILT_PCT: Silt content in percent dry weight of the sample. Silt consists of particles with nominal diameters less than 0.0625 mm, but greater than or equal to 0.004 mm (5 phi through 8 phi, inclusive).

CLAY_PCT: Clay content in percent dry weight of the sample. Clay consists of particles with nominal diameters less than 0.004 mm (9 phi and smaller).

USGS_Class: USGS sediment classification; see

https://www.sciencebase.gov/catalog/file/get/5de9be03e4b02caea0eeda45?f=disk_b1%2Fe4%2F74%2Fb1e47494caa95e6a54c32f270518094926f78286&transform=1&allowOpen=true

Tidal_Max: Maximum tidal shear stress at sediment surface in pascals (a pressure of one newton per square meter, or, in SI base units, one kilogram per meter per second squared)

Tidal_Mean: Mean tidal shear stress at sediment surface in pascals (a pressure of one newton per square meter, or, in SI base units, one kilogram per meter per second squared)

Depth_neg: depth expressed as negative value

TRI_Pixel1: Terrain Roughness Index, values closer to 0 indicate flatter terrain (seafloor), higher values indicate increasingly variable or irregular elevation (highs and lows) within a sampled unit of seafloor.

PHI_11: Phi 11: colloid; percent by weight of sediment grain-sizes in this category of the Phi scale (the phi scale is a sediment particle size scale, defined as a logarithmic transformation of the geometric Udden-Wentworth grain size scale, the higher the phi value, the finer the particle size) for details see:

https://www.sciencebase.gov/catalog/file/get/5de9be03e4b02caea0eeda45?f=__disk_b1%2Fe4%2F74%2Fb1e47494caa95e6a54c32f270518094926f78286&transform=1&allowOpen=true

PHI_10: Phi 10, clay

PHI_9: Phi 9, clay

PHI_8: Phi 8, silt

PHI_7: Phi 7, silt

PHI_6: Phi 6, silt

PHI_5: Phi 5, silt

PHI_4: Phi 4, silt / very fine sand

PHI_3: Phi 3, very fine sand / fine sand

PHI_2: Phi 2, fine sand / medium sand

PHI_1: Phi 1, medium sand/ coarse sand

PHI_0: Phi 0, very coarse sand

PHI__1: Phi negative 1, very fine gravel

PHI__2: Phi negative 2, very fine gravel / fine gravel

PHI__3: Phi negative 3, medium gravel

PHI__4: Phi negative 4, medium gravel / coarse gravel

Phys_Set: Physical setting classifier for CMECS

Geoform: Geomorphological classifier for CMECS

Substrate: Substrate classifier for CMECS

Biotic_Set: Biotic Setting classifier for CMECS

Biotic_Cla: Biotic Class classifier for CMECS

Biotic_Sub: Biotic Subclass

Biotic_Group: General descriptor for the dominant infaunal components of the sample (see below)

Biotic_Community: Numerically dominant taxa found in the sample

Other_Elements: Taxa found in the sample that may have important ecological roles within the community and/or interesting features

Acoustic_Patch_Type: Patch types identified from multi-segmentation image analysis of the backscatter mosaic of the Phase II study area

Acoustic_Patch_Type_Classification: General sediment type classification of the Acoustic Patches

Season: Season in which the sample was collected, fall = late November early December 2017; spring= May 2018

S: Taxonomic Richness; the total number of taxa found in the sample

N: Total Abundance; the total number of individuals of all taxa found in the sample

H_log10: Shannon Diversity H'; calculated using log base 10, higher values indicate higher diversity as a combination of taxonomic richness and relative abundances of the taxa in the sample

Comm_Desig: Community Designation; infaunal communities identified in multivariate analyses of the data, see below for general community descriptions

ENV_Long_Q: the sample sites divided by quartiles of longitude in Phase II study area

DETAILED DESCRIPTIONS:

<i>Biotic Groups - CMECS Classification</i>	
<i>Clam Bed</i>	<i>Sample dominated by bivalves</i>
<i>Clam Bed / Burrowing Fauna</i>	<i>Sample dominated by bivalves and burrowing fauna, generally polychaetes</i>
<i>Clam Bed / Small Tube Building Fauna</i>	<i>Sample dominated by bivalves and small tube builders, generally spionid polychaetes</i>
<i>Clam Bed / Tube Building and Burrowing Fauna</i>	<i>Sample dominated by bivalves with tube building and burrowing polychaetes of varied sizes</i>

<i>Faunal Bed</i>	<i>No evident dominant taxa</i>
<i>Large Tube Building Fauna</i>	<i>Mostly large tube building fauna such as bamboo worms</i>
<i>Mollusc Bed</i>	<i>Sample dominated by both bivalves and other molluscs</i>
<i>Mollusc Bed / Burrowing Fauna</i>	<i>Sample dominated by both bivalves and other molluscs and burrowing polychaetes</i>
<i>Mollusc Bed / Burrowing Fauna / Motile Fauna</i>	<i>as above but with surface motile taxa</i>
<i>Mollusc Bed / Tube Building and Burrowing Fauna</i>	<i>Sample dominated by bivalves and other molluscs with tube building and burrowing polychaetes of varied sizes</i>
<i>Mollusc Bed / Tube Building Fauna</i>	<i>Sample dominated by bivalves and other molluscs with tube building polychaetes</i>
<i>Motile Crustaceans</i>	<i>Sample dominated by surficial motile crustaceans</i>
<i>Motile Gastropods and Crustacea</i>	<i>Sample dominated by gastropods and crustaceans</i>
<i>Motile Surface Fauna</i>	<i>sample with surface motile fauna but no dominant taxa</i>
<i>Ophiuroids / Clam Bed</i>	<i>Brittle stars and bivalves</i>
<i>Sand Dollar Bed</i>	<i>Sample with large numbers of sand dollars</i>
<i>Sessile and Mobile Molluscs</i>	<i>Sample with gastropods and mix of sessile molluscs</i>
<i>Small & Large Tube Building Fauna</i>	<i>Sample dominated by large and small builders such as spionids and bamboo worms</i>
<i>Small Surface-Burrowing Fauna</i>	<i>Sample dominated by small polychaetes usually living just below the surface of the sediment</i>
<i>Small Tube Building Fauna</i>	<i>Sample dominated by tube building polychaete such as spionids</i>
<i>Tube Building Fauna</i>	<i>Sample dominated by a variety of tube building polychaetes</i>
<i>Tube Building and Burrowing Fauna</i>	<i>Sample dominated by a variety of tube building and burrowing fauna</i>
<i>Tube Building and Burrowing Fauna / Clam Bed</i>	<i>Sample dominated by a variety of tube building and burrowing fauna and bivalves</i>
<i>Tube Building and Burrowing Fauna / Mollusc Bed</i>	<i>Sample dominated by a variety of tube building and burrowing fauna and molluscs</i>

Community Designation

Community Type	Taxa making up ~ 70% of the total distinctness of the community (see Final Report for details; see Phase II Infauna Master.xlsx for full taxonomic identifications)
<i>a</i>	<i>Mulinia lateralis</i> , <i>Nucula proxima</i> , <i>Asychis elongatus</i> , <i>Anadara transversa</i>
<i>b</i>	<i>Astarte</i> spp., <i>Anadara transversa</i>
<i>c</i>	<i>Astarte</i> spp., <i>Glycera capitata</i> , <i>Echinarachnius parma</i> , <i>Paraonis fulgens</i> , <i>Astarte castaneum</i>
<i>d</i>	<i>Marenzallaria viridis</i> , <i>Nephtys picta</i> , <i>Corophium</i> spp., <i>Spiophanes bombyx</i> , <i>Mediomastus ambiseta</i> , <i>Protohaustorius wigleyi</i> , <i>Praxillella praetermissa</i> , <i>Sabellaria vulgaris</i> , <i>Magelona papilliformis</i> , <i>Tellina agilis</i> , <i>Chiridotea tuftsii</i>
<i>e</i>	<i>Crepidula fornicata</i> , <i>Pista cristata</i> , <i>Arabella iricolor</i> , <i>Astyris lunant</i> , <i>Diastylis ratheki</i>
<i>f</i>	<i>Corophium</i> spp., <i>Crepidula fornicata</i> , <i>Nicomache lumbricalis</i> , <i>Praxillella praetermissa</i> , <i>Ceriantheopsis americanus</i> , <i>Cirratulus cirratus</i>
<i>g</i>	<i>Crepidula fornicata</i> , <i>Astyris lunata</i> , <i>Crepidula plana</i> , <i>Corophium</i> spp., <i>Anadara transversa</i> , <i>Astarte</i> spp., <i>Pyramidellidae</i> Family, <i>Lepidonotus squamatus</i> , <i>Pagurus longicarpus</i>
<i>h</i>	<i>Astarte</i> spp., <i>Corophium</i> spp., <i>Mytilus edulis</i> , <i>Praxillella praetermissa</i> , <i>Spiophanes bombyx</i> , <i>Ampharete arctica</i> , <i>Pagurus longicarpus</i> , <i>Lepidonotus squamatus</i> , <i>Nicomache lumbricalis</i>
<i>i</i>	<i>Corophium</i> spp., <i>Astarte</i> spp., <i>Mediomastus ambiseta</i> , <i>Pagurus longicarpus</i> , <i>Arabella iricolor</i> , <i>Tharyx acutus</i> , <i>Lyonsia hyalina</i> , <i>Nucula</i> spp, <i>Scalibregma inflatum</i> , <i>Anadara transversa</i> , <i>Asychis elongatus</i> , <i>Spiochaetopterus costarum oculatus</i> , <i>Nephtys picta</i> , <i>Astarte undata</i> , <i>Amphipholis squamata</i> , <i>Nicomache lumbricalis</i> , <i>Spiophanes bombyx</i> , <i>Syllidae</i> , <i>Amphipholis abditis</i>
<i>j</i>	<i>Astarte</i> spp., <i>Ampharete arctica</i> , <i>Harmothoe imbricata</i> , <i>Corophium</i> spp., <i>Glycera capitata</i> , <i>Spiophanes bombyx</i> , <i>Pagurus longicarpus</i> , <i>Anadara transversa</i> , <i>Nicomache lumbricalis</i> , <i>Mediomastus ambiseta</i> , <i>Cirratulus cirratus</i> , <i>Marenzallaria viridis</i> , <i>Marphysa sanguinea</i> , <i>Praxillella praetermissa</i> , <i>Paraonis fulgens</i> , <i>Glycera dibranchiata</i> , <i>Mytilus edulis</i> , <i>Mulinia lateralis</i> , <i>Astarte undata</i>
<i>k</i>	<i>Astarte</i> spp., <i>Corophium</i> spp., <i>Glycera capitata</i> , <i>Mediomastus ambiseta</i> , <i>Spiophanes bombyx</i> , <i>Paraonis fulgens</i> , <i>Tharyx acutus</i> , <i>Anadara transversa</i> , <i>Syllidae</i> , <i>Astyris lunata</i> , <i>Cirratulus cirratus</i> , <i>Praxillella praetermissa</i> , <i>Crepidula fornicata</i> , <i>Ampelisca vadorum</i> , <i>Pagurus longicarpus</i>

<i>l</i>	<i>Ampelisca vadorum, Praxillella praetermissa, Spiophanes bombyx, Pagurus longicarpus, Corophium spp., Arabella iricolor, Spiochaetopterus costarum oculatus, Nephtys incisa, Nicomache lumbricalis, Mediomastus ambiseta, Scalibregma inflatum, Clymenella torquata, Nephtys picta</i>
<i>m</i>	<i>Phoxocephalus holbolli, Nephtys picta, Pagurus longicarpus, Tellina agilis, Paraonis fulgens, Glycera capitata, Ilyanassa trivittata</i>

Metadata reference: Roman N. Zajac, University of New Haven, rzajac@newhaven.edu

Infaunal Community Database for the Long Island Sound Cable Fund Initiative Phase II area of eastern Long Island Sound

METADATA

Dataset Originator: *University of New Haven; Roman N. Zajac*

Publication Date: *6/30/2021*

Dataset Title: *Community composition and abundance at infaunal sample sites in eastern Long Island Sound.*

Online Linkage: *<http://www.marine-geo.org/portals/lis/>*

Abstract: *This Excel file contains data for taxa and their abundance at for each infaunal sample site in the Long Island Sound Cable Fund Initiative Phase II area of eastern Long Island Sound. The data were collected using the USGS SEABOSS system on the Research Vessel Connecticut (University of Connecticut) in November/December 2017 and May 2018.*

Dataset purpose: *This dataset provides the data for the composition and abundance of all infaunal taxa in the Phase II study area which formed the basis of analyzing infaunal community characteristics relative to environmental features and the distribution of patch types in the Phase II study area to meet the Long Island Sound Cable Fund's goal of ecological characterization of the Long Island Sound sea floor in conjunction with habitat mapping efforts.*

Time period of content: *These data were collected over a 10-day spans in November / December 2017 and May 2018*

Dataset Status: *Complete*

Update Frequency: *None Planned*

Theme Keywords: *Benthic ecology, Infauna, Sea floor communities, Coastal and Marine Ecological Classification Standard, CMECS, Connecticut, New York, Long Island Sound, Fishers Island Sound, estuary, Long Island Sound Mapping and Research Collaborative, LISMaRC*

Access Constraints: *none*

Use Constraints:

Data and metadata are licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 3.0 United States License](#). Appropriate acknowledgment with a byline/credit/link must be given to both the original scientists/data contributors by reference to their relevant publications and to the Marine Geoscience Data System (www.marine-geo.org). Where citation information has been provided to us by scientists it is included with the relevant database entries, and should be acknowledged when data are used. You may browse freely, but you may not circulate or publish materials you obtained from this site if you do not accept the terms of providing adequate citation.

Data are provided with the express understanding that they will not be sold to third parties or included in commercial databases.

Users are strongly encouraged to contact the original investigators responsible for data made available on this site. Where appropriate, researchers are also encouraged to consider collaboration and/or co-authorship with original investigators.

Data should not be used for navigation purposes.

Point of Contact: Roman N. Zajac, University of New Haven, rzajac@newhaven.edu

Dataset Credit: *The Long Island Sound Mapping and Research Collaborative (LISMaRC). LISMaRC is the University of Connecticut, the University of New Haven and the US Geological Survey. Funding provided by the Long Island Sound Seafloor Mapping Fund administered cooperatively by the EPA Long Island Sound Study and the Connecticut Department of Energy and Environmental Protection (DEEP).*

Data Quality Considerations: *see below*

Attribute accuracy: *All attributes were evaluated during data processing and analysis as standard quality control to ensure attributes contain accurate and relevant information and values.*

Completeness: *The information provided on infaunal communities is complete*

Positional accuracy: *Doeas not appy but positions of all samples can be obtained in the associated shapefiles*

Process Steps: *Sediment samples were obtained using the USGS SEABOSS system were washed on a 1 mm sieve using filtered seawater and preserved in 70% ethanol. Samples were sorted using a dissecting microscope and all individuals identified to the lowest taxonomic level possible. All taxonomy was verified using the World Register of Marine Species (WoRMS) <http://www.marinespecies.org/index.php>)*

Attributes:

Top Row: Provides sampling station identifiers for sampling stations in columns

Subsequent rows: Provide the number of individuals of any specific taxon found in the sample; sample area was 0.1 m²

First four columns provide the name of the taxon, and its Phylum, Class, and Family

Metadata reference: Roman N. Zajac, University of New Haven, rzajac@newhaven.edu

LISMaRC Phase II Epifauna Sample Image Locations, Physical Characteristics, and CMECS Designations in the Long Island Sound Cable Fund Initiative Phase II area of eastern Long Island Sound Determined during SEABOSS, ROV, and Wet Diving Operations (2017-18)

METADATA

Dataset Originator: University of New Haven, Christian W. Conroy; University of Connecticut, Peter Auster

Publication Date: 6/30/2021

Dataset Title: LISMaRC Phase II Epifauna Sample Image Locations, Physical Characteristics, and CMECS Designations in the Long Island Sound Cable Fund Initiative Phase II area of eastern Long Island Sound Determined during SEABOSS, ROV, and Wet Diving Operations (2017-18)

Filename:

LISMaRC_BenthicEcology_2018_EpifaunaSEABOSSROVWetDivingImages_CMECSPhysCharacterization.xlsx

Online Linkage: <http://www.marine-geo.org/portals/lis/>

Abstract: The XLS file includes records of analyzed images collected during USGS SEABed Observation and Sampling System (SEABOSS) and Kraken2 ROV operations in May 2018. Data includes image file names, sample location, date and time, habitat characteristics, identified taxa and biogenic features, taxon and biogenic feature abundance (SEABOSS images only), and measures of diversity. These are the complete records of each sample image.

Dataset purpose: This dataset provides detailed information on the epifaunal communities in the Phase II study area which can be used to map the spatial characteristics of these communities relative to several environmental features to meet the Long Island Sound Cable Fund's goal of ecological characterization of the Long Island Sound sea floor in conjunction with habitat mapping efforts.

Time period of content: These data were collected during May 2018.

Dataset Status: Complete

Update Frequency: None Planned

Theme Keywords: Benthic ecology, Epifauna, diversity, habitat, seafloor imaging, SEABOSS, Kraken2, ROV, Connecticut, New York, Long Island Sound, Fishers Island Sound, estuary, Long Island Sound Mapping and Research Collaborative, LISMaRC

Access Constraints: none

Use Constraints: Data and metadata are licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 3.0 United States License](https://creativecommons.org/licenses/by-nc-sa/3.0/). Appropriate acknowledgment with a byline/credit/link must be given to both the original scientists/data contributors by reference to

their relevant publications and to the Marine Geoscience Data System (www.marine-geo.org). Where citation information has been provided to us by scientists it is included with the relevant database entries, and should be acknowledged when data are used. You may browse freely, but you may not circulate or publish materials you obtained from this site if you do not accept the terms of providing adequate citation.

Data are provided with the express understanding that they will not be sold to third parties or included in commercial databases.

Users are strongly encouraged to contact the original investigators responsible for data made available on this site. Where appropriate, researchers are also encouraged to consider collaboration and/or co-authorship with original investigators.

Data should not be used for navigation purposes.

Point of Contact: Christian W. Conroy, University of New Haven, cwconroy@newhaven.edu

Dataset Credit: The Long Island Sound Mapping and Research Collaborative (LISMaRC). LISMaRC is the University of Connecticut, the University of New Haven and the US Geological Survey. Funding provided by the Long Island Sound Seafloor Mapping Fund administered cooperatively by the EPA Long Island Sound Study and the Connecticut Department of Energy and Environmental Protection (DEEP).

Data Quality Considerations: see below

Attribute accuracy: All attributes were evaluated during data processing and analysis as standard quality control to ensure attributes contain accurate and relevant information and values.

Completeness: The information provided on epifaunal communities is complete

Positional accuracy:

SEABOSS Horizontal Positional Accuracy: Navigation during both the 2017 and 2018 sample collection periods used Wide Area Augmentation System (WAAS)-enabled GPS. The GPS was set to receive fixes at a 2-second interval in geographic coordinates (World Geodetic System of 1984 [WGS 84]). The recorded position of each sediment sample is the position of the GPS antenna on the survey vessel, located on the aft port side of the R/V Connecticut, not the location of the SEABOSS. The antenna was located approximately 5 meters from the SEABOSS deployment location in fall 2017 and 3 meters in spring 2018. No layback or offset was applied to the recorded position. In addition, the SEABOSS may drift away from the survey vessel when deployed to the sea floor. Based on the various sources of horizontal offsets, a conservative estimate of the horizontal accuracy of the sediment sample locations is 10 meters.

Kraken2 Horizontal Positional Accuracy: The positional accuracy for the support vessel the RV Connecticut's Simrad DGPS is typically 2 meters. The K2 ROV is tracked using an ultra-short baseline tracking system (ORE Trackpoint 2) that relies upon well-mounted transducer on the ship and an acoustic responder mounted on the vehicle. The accuracy of the position of the ROV

is therefore dependent upon additional variables (water depth, ship roll/heave), but generally ranges between 2 to 5 meters.

Wet Diving Horizontal Positional Accuracy: Horizontal Positional Accuracy: Position was recorded manually from the location of the attending research vessel at the commencement of the dive. Both the RV Osprey and RV Zostera use Garmin GPSMAP systems, with reported positional accuracy between 5 and 15 lateral m. This position was then applied to each image and suction sample collected, providing a general location.

Vertical Positional Accuracy: The depths recorded for each sample are approximate and were derived from an unpublished composite bathymetry dataset used by the Long Island Sound Mapping and Research Collaborative project.

Process Steps: Images used for ecological characterization were collected using the United States Geological Survey's (USGS) Seabed Observation and Sampling System (SEABOSS; Valentine et al. 2000; n = 595) collected between May 8 and 15, 2018 (n = 595) and the University of Connecticut's (UConn) Kraken2 (K2) remotely operated vehicle (ROV) between May 19 and 23, 2018 (n = 110) on the RV Connecticut.

SEABOSS: SEABOSS captured orthogonal images of the seafloor. These images were analyzed for percent cover of all living seafloor species (excluding fish) and biogenic features. Percent cover was quantified using a grid of square cells overlaid on each image (n=216 grid cells). Within each grid square, organisms and biogenic features were identified to lowest possible taxonomic level. The sum of these grid cells for each image and organism or biogenic feature is reported in this dataset.

K2: K2 was utilized to acquire imagery in topographically complex and spatially constrained habitats where maneuverability of the camera platform is required to collect adequate image samples. Such areas were difficult to access using SEABOSS. Oblique still images were taken of complex seafloor habitats, vertical surfaces, and boulders and ledges. Due to the complexity of habitats within captured images, determining percent cover using a standardized grid was not possible. Instead, oblique images were analyzed for the presence of all living seafloor species (excluding fish) and biogenic features.

Within-image measures of diversity and richness of taxa and biogenic features were determined per image for the combined SEABOSS and ROV dataset.

Wet Diving: Orthogonal images in depths < 22m were captured during wet diving operations using a quadrat-mounted camera and artificial light, ensuring standardized 0.5m² areas within each image. These images were analyzed for percent cover of all living seafloor species and biogenic features. Percent cover was quantified using a grid of square cells overlaid on each image (n=216 grid cells). Within each grid square, organisms and biogenic features were identified to lowest possible taxonomic level. The sum of these grid cells for each image and organism or biogenic feature is reported in this dataset.

Sediment Samples: Sediment samples were obtained using the USGS SEABOSS system and characterized as described in Ackerman et al. (2020). The CMECS classification system was applied to each sample using both CMECS defined classifiers as well as modified classifiers for

Biotic Groups (see below). Additional information on infaunal communities is provided in two additional classification levels there added, Biotic Community and Other Elements.

Ackerman, S.D., Huntley, E.C., Blackwood, D.S., Babb, I.G., Zajac, R.N., Conroy, C.W., Auster, P.J., Schneeberger, C.L., and Walton, O.L., 2020, Sea-floor sediment and imagery data collected in Long Island Sound, Connecticut and New York, 2017 and 2018: U.S. Geological Survey data release, <https://doi.org/10.5066/P9GK29NM>.

Attributes:

IMAGE: Unique identifier of orthogonal image; SEABOSS imagery formatted as *LISMaRC_Spring2018_IrfColCor_[Date and Time formatted in ISO 8601 standard]*; Kraken imagery formatted as *LISMaRC_Spring2018_ROV_PT_IrfColCor_[Date and Time formatted in ISO 8601 standard]*.

YEAR: Year of image capture; formatted as integer value [2018].

DATE_ISO8601: Date of image capture; formatted in ISO 8601 standard.

TIME_ISO8601: Time of image capture; formatted in ISO 8601 standard.

DATE_TIME_ISO8601: Date and time of image capture; formatted in ISO 8601 standard.

LONGITUDE: see:

https://www.sciencebase.gov/catalog/file/get/5de9be03e4b02caea0eeda45?f=disk_b1%2Fe4%2F74%2Fb1e47494caa95e6a54c32f270518094926f78286&transform=1&allowOpen=true

LATITUDE: see:

https://www.sciencebase.gov/catalog/file/get/5de9be03e4b02caea0eeda45?f=disk_b1%2Fe4%2F74%2Fb1e47494caa95e6a54c32f270518094926f78286&transform=1&allowOpen=true

SAMPLE_PLATFORM: Sample platform used during image collection.

SAMPLE_AREA: Sample block, site, or area of image capture location.

TRANSECT_ID: SEABOSS sampling transect.

DIVE_ID: Unique identifier of each Kraken2 ROV dive.

ECOG_PATCH: ECognition patch at location of image capture.

PHYS_SET: Physical setting classifier for CMECS.

GEOFORM: Geomorphological classifier for CMECS.

SUBSTRATE: Substrate classifier for CMECS.

BIOTIC_SET: Biotic Setting classifier for CMECS.

BIOTIC_CLA: Biotic Class classifier for CMECS.

BIOTIC_SUB: Biotic Subclass.

BIOTIC_GROUP: General descriptor for the dominant infaunal components of the sample (see below)

GRAIN_SIZE: Sediment classification based on the modified Shepard Classification (1954); described in Ackerman et al. (2020); formatted as text [gravelly sand, gravelly sediment, gravel-sand, sandy silt].

BIOGENIC_DESC: Qualitative description of biogenic features that characterize seafloor habitats; includes notable features.

EPIFAUNA_EMERGENT_DESC: Qualitative description of epi- and emergent fauna and flora that characterize seafloor communities; includes notable taxa.

PHYSICAL_DESC: Qualitative description of physical setting that characterizes seafloor habitats; specific focus on depth, seafloor complexity, and tidal energy.

Detailed Descriptions:

Biotic Groups - CMECS Classification	
Hydroids	Samples dominated by hydroid species that may or may not attached to a hard substrate.
Bryozoans	Samples dominated by abundant or structurally complex, attached bryozoan communities that are may be habitat-forming.
Molluscs	Samples dominated by slow-moving and sessile mollusks, most commonly gastropods.
Sponges	Hard, mixed, or soft substrate areas that are dominated by sponges and their associated communities.
Coral	Samples dominated by non-reef-forming corals.
Benthic Macroalgae	Shallow samples dominated by structure forming attached macroalgae.

Metadata reference: Christian W. Conroy, University of New Haven, cwconroy@newhaven.edu

LISMaRC Phase II Epifauna Sample Image Locations, Environmental Characteristics, Taxa and Biogenic Feature Cover, and Diversity Measures in the Long Island Sound Cable Fund Initiative Phase II area of eastern Long Island Sound Collected during SEABOSS Operations (2017)

METADATA

Dataset Originator: University of New Haven, Christian W. Conroy; University of Connecticut, Peter Auster

Publication Date: 6/30/2021

Dataset Title: LISMaRC Phase II Epifauna Sample Image Locations, Environmental Characteristics, Taxa and Biogenic Feature Cover, and Diversity Measures in the Long Island Sound Cable Fund Initiative Phase II area of eastern Long Island Sound Collected during SEABOSS Operations (2017)

Filename: *LISMaRC_BenthicEcology_2017_EpifaunaSeaBossImages_EcolCharacterization.xlsx*

Online Linkage: <http://www.marine-geo.org/portals/lis/>

Abstract: The XLS file includes record of analyzed images collected during USGS SEABed Observation and Sampling System (SEABOSS) operations in November and December 2017. Data includes image file names, sample location, date and time, habitat characteristics, identified taxa and biogenic features, taxon and biogenic feature abundance, and measures of diversity. These are the complete records of each sample image.

Dataset purpose: This dataset provides detailed information on the epifaunal communities in the Phase II study area which can be used to map the spatial characteristics of these communities relative to several environmental features to meet the Long Island Sound Cable Fund's goal of ecological characterization of the Long Island Sound sea floor in conjunction with habitat mapping efforts.

Time period of content: These data were collected during November and December 2018.

Dataset Status: Complete

Update Frequency: None Planned

Theme Keywords: Benthic ecology, Epifauna, diversity, habitat, seafloor imaging, SEABOSS, Connecticut, New York, Long Island Sound, Fishers Island Sound, estuary, Long Island Sound Mapping and Research Collaborative, LISMaRC

Access Constraints: none

Use Constraints: Data and metadata are licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 3.0 United States License](https://creativecommons.org/licenses/by-nc-sa/3.0/). Appropriate acknowledgment with a byline/credit/link must be given to both the original scientists/data contributors by reference to their relevant publications and to the Marine Geoscience Data System (www.marine-geo.org). Where citation information has been provided to us by scientists it is included with the relevant

database entries, and should be acknowledged when data are used. You may browse freely, but you may not circulate or publish materials you obtained from this site if you do not accept the terms of providing adequate citation.

Data are provided with the express understanding that they will not be sold to third parties or included in commercial databases.

Users are strongly encouraged to contact the original investigators responsible for data made available on this site. Where appropriate, researchers are also encouraged to consider collaboration and/or co-authorship with original investigators.

Data should not be used for navigation purposes.

Point of Contact: Christian W. Conroy, University of New Haven, cwconroy@newhaven.edu

Dataset Credit: The Long Island Sound Mapping and Research Collaborative (LISMaRC). LISMaRC is the University of Connecticut, the University of New Haven and the US Geological Survey. Funding provided by the Long Island Sound Seafloor Mapping Fund administered cooperatively by the EPA Long Island Sound Study and the Connecticut Department of Energy and Environmental Protection (DEEP).

Data Quality Considerations: see below

Attribute accuracy: All attributes were evaluated during data processing and analysis as standard quality control to ensure attributes contain accurate and relevant information and values.

Completeness: The information provided on epifaunal communities is complete

Positional accuracy:

Horizontal Positional Accuracy: Navigation during both the 2017 and 2018 sample collection periods used Wide Area Augmentation System (WAAS)-enabled GPS. The GPS was set to receive fixes at a 2-second interval in geographic coordinates (World Geodetic System of 1984 [WGS 84]). The recorded position of each sediment sample is the position of the GPS antenna on the survey vessel, located on the aft port side of the R/V Connecticut, not the location of the SEABOSS. The antenna was located approximately 5 meters from the SEABOSS deployment location in fall 2017 and 3 meters in spring 2018. No layback or offset was applied to the recorded position. In addition, the SEABOSS may drift away from the survey vessel when deployed to the sea floor. Based on the various sources of horizontal offsets, a conservative estimate of the horizontal accuracy of the sediment sample locations is 10 meters.

Vertical Positional Accuracy: The depths recorded for each sample are approximate and were derived from an unpublished composite bathymetry dataset used by the Long Island Sound Mapping and Research Collaborative project.

Process Steps: Images used for ecological characterization (n=602) were using the United States Geological Survey's (USGS) Seabed Observation and Sampling System (SEABOSS);

Valentine et al. 2000) collected between November 28 and December 3, 2017 on the RV Connecticut.

SEABOSS captured orthogonal images of the seafloor. These images were analyzed for percent cover of all living seafloor species (excluding fish) and biogenic features. Percent cover was quantified using a grid of square cells overlaid on each image (n=216 grid cells). Within each grid square, organisms and biogenic features were identified to lowest possible taxonomic level. The sum of these grid cells for each image and organism or biogenic feature is reported in this dataset. Within-image measures of diversity and richness of taxa and biogenic features were determined per image.

Additional abiotic factors included in the dataset are depth (from multibeam bathymetry), topographic roughness index (TRI; derived from variation in bathymetry based on a moving window of surrounding each cell), tau max (value from the model of seafloor stress), and longitude and the corresponding quartiles for each of these factors.

Attributes:

IMAGE: Unique identifier of orthogonal image; formatted as *LISMaRC_Fall2017_DSC_IrfColCor_[Image File Name Assigned by Camera]*.

YEAR: Year of image capture; formatted as integer value [2017].

DATE_ISO8601: Date of image capture; formatted in ISO 8601 standard.

TIME_ISO8601: Time of image capture; formatted in ISO 8601 standard.

DATE_TIME_ISO8601: Date and time of image capture; formatted in ISO 8601 standard.

LONGITUDE: see:

https://www.sciencebase.gov/catalog/file/get/5de9be03e4b02caea0eeda45?f=__disk__b1%2Fe4%2F74%2Fb1e47494caa95e6a54c32f270518094926f78286&transform=1&allowOpen=true

LATITUDE: see:

https://www.sciencebase.gov/catalog/file/get/5de9be03e4b02caea0eeda45?f=__disk__b1%2Fe4%2F74%2Fb1e47494caa95e6a54c32f270518094926f78286&transform=1&allowOpen=true

SAMPLE_AREA: Sample block or site of image capture location.

ECOG_PATCH: ECognition patch at location of image capture.

DEPTH_m: Approximate depth of water in meters at the location of image capture derived from an unpublished composite bathymetry dataset used by the Long Island Sound Mapping and Research Collaborative project; measured in m.

DEPTH_Q4: Depth quartile at the location of image capture; depth increases with increasing quartile.

TRI_4m: Topographic roughness index (TRI) derived from depth.

TRI4m_Q4: TRI quartile at the location of image capture; TRI increases with increasing quartile.

TAU_MX: Maximum tidal shear stress at sediment surface in pascals (a pressure of one newton per square meter, or, in SI base units, one kilogram per meter per second squared).

TAUMX_Q4: Maximum tau quartile at the location of image capture; maximum tau increases with increasing quartile.

LONG_Q4: Longitude quartile at the location of image capture; longitude decreases with increasing quartile.

BACKSCATTER: Backscatter intensity at the location of image capture derived from an unpublished composite backscatter dataset used by the Long Island Sound Mapping and Research Collaborative project.

BACKSCAT_FOCALMN: Mean backscatter intensity of a 9-pixel square centered at the location of image capture.

BACKSCAT_FOCALCV: Coefficient of variation (CV) of backscatter intensity of a 9-pixel square centered at the location of image capture.

S_TAXA_FEAT: Combined taxa and biogenic feature richness (S).

J_TAXA_FEAT: Combined taxa and biogenic feature evenness (J').

Hlog10_TAXA_FEAT: Combined taxa and biogenic feature Shannon-Weiner diversity index ($H' \log_{10}$).

S_TAXA: Taxa richness (S).

J_TAXA: Taxa evenness (J').

Hlog10_TAXA: Taxa Shannon-Weiner diversity index ($H' \log_{10}$).

S_FEAT: Biogenic feature richness (S).

Identified Taxa and Biogenic Features (individually listed in dataset): Organisms identified to lowest possible taxonomic level and biogenic features; grid cells containing each taxa and features in each SEABOSS image were summed and reported as number of grid cells [0-216] formatted as integer values.

Metadata reference: Christian W. Conroy, University of New Haven,
cwconroy@newhaven.edu

LISMaRC Phase II Epifauna Sample Image Locations, Environmental Characteristics, Taxa and Biogenic Feature Abundances, and Diversity Measures in the Long Island Sound Cable Fund Initiative Phase II area of eastern Long Island Sound during SEABOSS and ROV Operations (2018)

METADATA

Dataset Originator: University of New Haven, Christian W. Conroy; University of Connecticut, Peter Auster

Publication Date: 6/30/2021

Dataset Title: LISMaRC Phase II Epifauna Sample Image Locations, Environmental Characteristics, Taxa and Biogenic Feature Abundances, and Diversity Measures in the Long Island Sound Cable Fund Initiative Phase II area of eastern Long Island Sound during SEABOSS and ROV Operations (2018)

Filename:

LISMaRC_BenthicEcology_2018_EpifaunaSEABOSSROVImages_EcolCharacterization.xlsx

Online Linkage: <http://www.marine-geo.org/portals/lis/>

Abstract: The XLS file includes records of analyzed images collected during USGS SEABed Observation and Sampling System (SEABOSS) and Kraken2 ROV operations in May 2018. Data includes image file names, sample location, date and time, habitat characteristics, identified taxa and biogenic features, taxon and biogenic feature abundance (SEABOSS images only), and measures of diversity. These are the complete records of each sample image.

Dataset purpose: This dataset provides detailed information on the epifaunal communities in the Phase II study area which can be used to map the spatial characteristics of these communities relative to several environmental features to meet the Long Island Sound Cable Fund's goal of ecological characterization of the Long Island Sound seafloor in conjunction with habitat mapping efforts.

Time period of content: These data were collected during May 2018.

Dataset Status: Complete

Update Frequency: None Planned

Theme Keywords: Benthic ecology, Epifauna, diversity, habitat, seafloor imaging, SEABOSS, Kraken2, ROV, Connecticut, New York, Long Island Sound, Fishers Island Sound, estuary, Long Island Sound Mapping and Research Collaborative, LISMaRC

Access Constraints: none

Use Constraints: Data and metadata are licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 3.0 United States License](https://creativecommons.org/licenses/by-nc-sa/3.0/). Appropriate acknowledgment with a byline/credit/link must be given to both the original scientists/data contributors by reference to their relevant publications and to the Marine Geoscience Data System (www.marine-geo.org).

Where citation information has been provided to us by scientists it is included with the relevant database entries, and should be acknowledged when data are used. You may browse freely, but you may not circulate or publish materials you obtained from this site if you do not accept the terms of providing adequate citation.

Data are provided with the express understanding that they will not be sold to third parties or included in commercial databases.

Users are strongly encouraged to contact the original investigators responsible for data made available on this site. Where appropriate, researchers are also encouraged to consider collaboration and/or co-authorship with original investigators.

Data should not be used for navigation purposes.

Point of Contact: Christian W. Conroy, University of New Haven, cwconroy@newhaven.edu

Dataset Credit: The Long Island Sound Mapping and Research Collaborative (LISMaRC). LISMaRC is the University of Connecticut, the University of New Haven and the US Geological Survey. Funding provided by the Long Island Sound Seafloor Mapping Fund administered cooperatively by the EPA Long Island Sound Study and the Connecticut Department of Energy and Environmental Protection (DEEP).

Data Quality Considerations: see below

Attribute accuracy: All attributes were evaluated during data processing and analysis as standard quality control to ensure attributes contain accurate and relevant information and values.

Completeness: The information provided on epifaunal communities is complete

Positional accuracy:

SEABOSS Horizontal Positional Accuracy: Navigation during both the 2017 and 2018 sample collection periods used Wide Area Augmentation System (WAAS)-enabled GPS. The GPS was set to receive fixes at a 2-second interval in geographic coordinates (World Geodetic System of 1984 [WGS 84]). The recorded position of each sediment sample is the position of the GPS antenna on the survey vessel, located on the aft port side of the R/V Connecticut, not the location of the SEABOSS. The antenna was located approximately 5 meters from the SEABOSS deployment location in fall 2017 and 3 meters in spring 2018. No layback or offset was applied to the recorded position. In addition, the SEABOSS may drift away from the survey vessel when deployed to the sea floor. Based on the various sources of horizontal offsets, a conservative estimate of the horizontal accuracy of the sediment sample locations is 10 meters.

Kraken2 Horizontal Positional Accuracy: The positional accuracy for the support vessel the RV Connecticut's Simrad DGPS is typically 2 meters. The K2 ROV is tracked using an ultra-short baseline tracking system (ORE Trackpoint 2) that relies upon well-mounted transducer on the ship and an acoustic responder mounted on the vehicle. The accuracy of the position of the ROV

is therefore dependent upon additional variables (water depth, ship roll/heave), but generally ranges between 2 to 5 meters.

Vertical Positional Accuracy: The depths recorded for each sample are approximate and were derived from an unpublished composite bathymetry dataset used by the Long Island Sound Mapping and Research Collaborative project.

Process Steps: Images used for ecological characterization were collected using the United States Geological Survey's (USGS) Seabed Observation and Sampling System (SEABOSS; Valentine et al. 2000; n = 595) collected between May 8 and 15, 2018 (n = 595) and the University of Connecticut's (UConn) Kraken2 (K2) remotely operated vehicle (ROV) between May 19 and 23, 2018 (n = 110) on the RV Connecticut.

SEABOSS: SEABOSS captured orthogonal images of the seafloor. These images were analyzed for percent cover of all living seafloor species (excluding fish) and biogenic features. Percent cover was quantified using a grid of square cells overlaid on each image (n=216 grid cells). Within each grid square, organisms and biogenic features were identified to lowest possible taxonomic level. The sum of these grid cells for each image and organism or biogenic feature is reported in this dataset.

K2: K2 was utilized to acquire imagery in topographically complex and spatially constrained habitats where maneuverability of the camera platform is required to collect adequate image samples. Such areas were difficult to access using SEABOSS. Oblique still images were taken of complex seafloor habitats, vertical surfaces, and boulders and ledges. Due to the complexity of habitats within captured images, determining percent cover using a standardized grid was not possible. Instead, oblique images were analyzed for the presence of all living seafloor species (excluding fish) and biogenic features.

Within-image measures of diversity and richness of taxa and biogenic features were determined per image for the combined SEABOSS and ROV dataset.

Additional abiotic factors included in the dataset are depth (from multibeam bathymetry), topographic roughness index (TRI; derived from variation in bathymetry based on a moving window of surrounding each cell), tau max (value from the model of seafloor stress), and longitude and the corresponding quartiles for each of these factors.

Attributes:

IMAGE: Unique identifier of orthogonal image; SEABOSS imagery formatted as *LISMaRC_Spring2018_IrfColCor_[Date and Time formatted in ISO 8601 standard]*; Kraken imagery formatted as *LISMaRC_Spring2018_ROV_PT_IrfColCor_[Date and Time formatted in ISO 8601 standard]*.

YEAR: Year of image capture; formatted as integer value [2018].

DATE_ISO8601: Date of image capture; formatted in ISO 8601 standard.

TIME_ISO8601: Time of image capture; formatted in ISO 8601 standard.

DATE_TIME_ISO8601: Date and time of image capture; formatted in ISO 8601 standard.

LONGITUDE: see:

https://www.sciencebase.gov/catalog/file/get/5de9be03e4b02caea0eeda45?f=disk_b1%2Fe4%2F74%2Fb1e47494caa95e6a54c32f270518094926f78286&transform=1&allowOpen=true

LATITUDE: see:

https://www.sciencebase.gov/catalog/file/get/5de9be03e4b02caea0eeda45?f=disk_b1%2Fe4%2F74%2Fb1e47494caa95e6a54c32f270518094926f78286&transform=1&allowOpen=true

SAMPLE_PLATFORM: Sample platform used during image collection.

SAMPLE_AREA: Sample block, site, or area of image capture location.

TRANSECT_ID: SEABOSS sampling transect.

DIVE_ID: Unique identifier of each Kraken2 ROV dive.

ECOG_PATCH: ECognition patch at location of image capture.

DEPTH_m: Approximate depth of water in meters at the location of image capture derived from an unpublished composite bathymetry dataset used by the Long Island Sound Mapping and Research Collaborative project; measured in m.

DEPTH_Q4: Depth quartile at the location of image capture; depth increases with increasing quartile.

TRI_4m: Topographic roughness index (TRI) derived from depth.

TRI4m_Q4: TRI quartile at the location of image capture; TRI increases with increasing quartile.

TAU_MX: Maximum tidal shear stress at sediment surface in pascals (a pressure of one newton per square meter, or, in SI base units, one kilogram per meter per second squared).

TAUMX_Q4: Maximum tau quartile at the location of image capture; maximum tau increases with increasing quartile.

LONG_Q4: Longitude quartile at the location of image capture; longitude decreases with increasing quartile.

BACKSCATTER: Backscatter intensity at the location of image capture derived from an unpublished composite backscatter dataset used by the Long Island Sound Mapping and Research Collaborative project.

BACKSCAT_FOCALMN: Mean backscatter intensity of a 9-pixel square centered at the location of image capture.

BACKSCAT_FOCALCV: Coefficient of variation (CV) of backscatter intensity of a 9-pixel square centered at the location of image capture.

S_TAXA_FEAT: Combined taxa and biogenic feature richness (S).

J_TAXA_FEAT: Combined taxa and biogenic feature evenness (J').

Hlog10_TAXA_FEAT: Combined taxa and biogenic feature Shannon-Weiner diversity index ($H' \log_{10}$).

S_TAXA: Taxa richness (S).

J_TAXA: Taxa evenness (J').

Hlog10_TAXA: Taxa Shannon-Weiner diversity index ($H' \log_{10}$).

S_FEAT: Biogenic feature richness (S).

Identified Taxa and Biogenic Features (individually listed in dataset): Organisms identified to lowest possible taxonomic level and biogenic features; grid cells containing each taxa and features in each SEABOSS image were summed and reported as number of grid cells [0-216] formatted as integer values; taxa and features in each K2 image were reported as present [1] or absent [2] formatted as integer values.

Metadata reference: Christian W. Conroy, University of New Haven,
cwconroy@newhaven.edu

LISMaRC Phase II Epifauna Shallow Sample Image Locations, Environmental Characteristics, and Taxa and Biogenic Feature Cover in the Long Island Sound Cable Fund Initiative Phase II area of eastern Long Island Sound Collected during Wet Diving Operations (2017-18)

METADATA

Dataset Originator: LISMaRC

Publication Date: 6/30/2021

Dataset Title: LISMaRC Phase II Epifauna Shallow Sample Image Locations, Environmental Characteristics, and Taxa and Biogenic Feature Cover in the Long Island Sound Cable Fund Initiative Phase II area of eastern Long Island Sound Collected during Wet Diving Operations (2017-18)

Filename: Filename:

LISMaRC_BenthicEcology_2017_18_EpifaunaWetDivingImages_EcolCharacterization.xlsx

Online Linkage: <http://www.marine-geo.org/portals/lis/>

Abstract: The XLS file includes record of analyzed suction samples collected during wet diving operations during 2017 and 2018. Data includes sample location, date, taxa and abundance of collected organisms, and file names of the orthogonal images associated with the specific samples. These are the complete records of each analyzed suction sample.

Dataset purpose: This data was used to assess the efficacy of using orthogonal imagery to characterize benthic emergent and epifauna.

Time period of content: Samples were collected between August 2017 and August 2018 during 1-day trips to wet diving sample locations. RV Osprey and RV Zostera were used during these sample trips.

Dataset Status: complete

Update Frequency: none planned

Theme Keywords: Eastern Long Island Sound, Phase II Area, wet diving, suction samples, epifauna, emergent fauna, algae, seafloor habitat, University of Connecticut, UConn

Access Constraints: none

Use Constraints: Data and metadata are is licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 3.0 United States License](https://creativecommons.org/licenses/by-nc-sa/4.0/). Appropriate acknowledgment with a byline/credit/link **must** be given to both the original scientists/data contributors by reference to their relevant publications and to the Marine Geoscience Data System (www.marine-geo.org) and/or the Long Island Sound Habitat Mapping website (<https://lismap.uconn.edu>). Where citation information has been provided to us by scientists it is included with the relevant database entries, and should be acknowledged when data are used. You may browse freely, but you may

not circulate or publish materials you obtained from this site if you do not accept the terms of providing adequate citation.

Data are provided with the express understanding that they will not be sold to third parties or included in commercial databases.

Users are strongly encouraged to contact the original investigators responsible for data made available on this site. Where appropriate, researchers are also encouraged to consider collaboration and/or co-authorship with original investigators.

Data should not be used for navigation purposes.

Point of Contact: Christian W. Conroy, University of New Haven, cwconroy@newhaven.edu

Dataset Credit: The Long Island Sound Mapping and Research Collaborative (LISMaRC). LISMaRC is the University of Connecticut, the University of New Haven and the US Geological Survey. Funding provided by the Long Island Sound Seafloor Mapping Fund administered cooperatively by the EPA Long Island Sound Study and the Connecticut Department of Energy and Environmental Protection (DEEP).

Data Quality Considerations: see below

Attribute accuracy: Data reports cover as number of grid cells (out of 216 total) of organisms collected from the surface of a 0.5 m² area of seafloor. Collected samples were analyzed in full and accurately represent the organisms at that location.

Completeness: Each sample record reports the complete results of analysis, sample location, sample date, and orthogonal images associated with the suction samples.

Positional accuracy:

Horizontal Positional Accuracy: Position was recorded manually from the location of the attending research vessel at the commencement of the dive. Both the RV Osprey and RV Zostera use Garmin GPSMAP systems, with reported positional accuracy between 5 and 15 lateral m. This position was then applied to each image and suction sample collected, providing a general location.

Vertical Positional Accuracy: The depths recorded for each sample are approximate and were derived from an unpublished composite bathymetry dataset used by the Long Island Sound Mapping and Research Collaborative project.

Process Steps: Orthogonal images in depths < 22m were captured during wet diving operations using a quadrat-mounted camera and artificial light, ensuring standardized 0.5m² areas within each image. These images were analyzed for percent cover of all living seafloor species and biogenic features. Percent cover was quantified using a grid of square cells overlaid on each image (n=216 grid cells). Within each grid square, organisms and biogenic features were identified to lowest possible taxonomic level. The sum of these grid cells for each image and organism or biogenic feature is reported in this dataset.

Additional abiotic factors included in the dataset are depth (from multibeam bathymetry), topographic roughness index (TRI; derived from variation in bathymetry based on a moving window of surrounding each cell), tau max (value from the model of seafloor stress), and longitude and the corresponding quartiles for each of these factors.

Attributes:

IMAGE: Unique identifier of orthogonal image; formatted as *UConn_IrfColCor_[Research Vessel]Date (ISO 8601)_[Sample Site ID]_[Camera Model]_[Sequential Image Number; unique to dive]_[Image File Name Assigned by Camera]*.

YEAR: Year of image capture; formatted as integer value [2017-2018].

DATE_ISO8601: Date of image capture; formatted in ISO 8601 standard.

LONGITUDE: Longitude of sample site; formatted in decimal degrees; World Geodetic System 1984 datum.

LATITUDE: Latitude of sample site; formatted in decimal degrees; World Geodetic System 1984 datum.

SAMPLE_AREA: Sample block or site of image capture location.

NEAR_SAMPLE_AREA: Sample blocks or sites nearest image capture location.

DIVE_SITE_ID: Unique Identifier of image capture location [SD01-SD12].

DIVE_SITE: Text identifier of image capture location.

ECOG_PATCH: ECognition patch at location of image capture.

DEPTH_m: Approximate depth of water in meters at the location of image capture derived from an unpublished composite bathymetry dataset used by the Long Island Sound Mapping and Research Collaborative project; measured in m.

DEPTH_Q4: Depth quartile at the location of image capture; depth increases with increasing quartile.

TRI_4m: Topographic roughness index (TRI) derived from depth.

TRI4m_Q4: TRI quartile at the location of image capture; TRI increases with increasing quartile.

TAU_MX: Maximum tidal shear stress at sediment surface in pascals (a pressure of one newton per square meter, or, in SI base units, one kilogram per meter per second squared).

TAUMX_Q4: Maximum tau quartile at the location of image capture; maximum tau increases with increasing quartile.

LONG_Q4: Longitude quartile at the location of image capture; longitude decreases with increasing quartile.

Identified Taxa and Biogenic Features (individually listed in dataset): Organisms identified to lowest possible taxonomic level and biogenic features; grid cells containing each taxa and features in each image were summed and reported as number of grid cells [0-216] formatted as integer values.

Metadata reference: Christian W. Conroy, University of New Haven,
cwconroy@newhaven.edu

LISMaRC Phase II Epifauna Shallow Suction Sample Locations and Taxa and Biogenic Feature Abundance in the Long Island Sound Cable Fund Initiative Phase II area of eastern Long Island Sound Collected during Wet Diving Operations (2017-18)

METADATA

Dataset Originator: University of New Haven, Christian W. Conroy; University of Connecticut, Peter Auster

Publication Date: September 2019

Dataset Title: LISMaRC Phase II Epifauna Shallow Suction Sample Locations and Taxa and Biogenic Feature Abundance in the Long Island Sound Cable Fund Initiative Phase II area of eastern Long Island Sound Collected during Wet Diving Operations (2017-18)

Filename:

LISMaRC_BenthicEcology_2017_18_EpifaunaWetDivingSuctionSamples_EcolCharacterization.xlsx

Online Linkage: <http://www.marine-geo.org/portals/lis/>

Abstract: The XLS file includes record of analyzed suction samples collected during wet diving operations during 2017 and 2018. Data includes sample location, date, taxa, and abundance of collected organisms, and file names of the orthogonal images associated with the specific samples. These are the complete records of each analyzed suction sample.

Dataset purpose: This data was used to assess the efficacy of using orthogonal imagery to characterize benthic emergent and epifauna.

Time period of content: *{cruise or sampling dates/ranges with month & year}* Samples were collected between August 2017 and August 2018 during 1-day trips to wet diving sample locations. RV Osprey and RV Zostera were used during these sample trips.

Dataset Status: complete

Update Frequency: planned

Theme Keywords: Eastern Long Island Sound, Phase II Area, wet diving, suction samples, epifauna, emergent fauna, algae, seafloor habitat, University of Connecticut, UConn

Access Constraints: none

Use Constraints: Data and metadata are is licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 3.0 United States License](https://creativecommons.org/licenses/by-nc-sa/4.0/). Appropriate acknowledgment with a byline/credit/link **must** be given to both the original scientists/data contributors by reference to their relevant publications and to the Marine Geoscience Data System (www.marine-geo.org) and/or the Long Island Sound Habitat Mapping website (<https://lismap.uconn.edu>). Where citation information has been provided to us by scientists it is included with the relevant database entries, and should be acknowledged when data are used. You may browse freely, but you may

not circulate or publish materials you obtained from this site if you do not accept the terms of providing adequate citation.

Data are provided with the express understanding that they will not be sold to third parties or included in commercial databases.

Users are strongly encouraged to contact the original investigators responsible for data made available on this site. Where appropriate, researchers are also encouraged to consider collaboration and/or co-authorship with original investigators.

Data should not be used for navigation purposes.

Point of Contact: Christian W. Conroy, University of New Haven, cwconroy@newhaven.edu

Dataset Credit: The Long Island Sound Mapping and Research Collaborative (LISMaRC). LISMaRC is the University of Connecticut, the University of New Haven and the US Geological Survey. Funding provided by the Long Island Sound Seafloor Mapping Fund administered cooperatively by the EPA Long Island Sound Study and the Connecticut Department of Energy and Environmental Protection (DEEP).

Data Quality Considerations: see below

Attribute accuracy: Data reports presence or abundance of organisms collected from the surface of a 0.5 m² area of seafloor. Collected samples were analyzed in full and accurately represent the organisms at that location.

Completeness: Each sample record reports the complete results of analysis, sample location, sample date, and orthogonal images associated with the suction sample.

Positional accuracy:

Horizontal Positional Accuracy: Position was recorded manually from the location of the attending research vessel at the commencement of the dive. Both the RV Osprey and RV Zostera use Garmin GPSMAP systems, with reported positional accuracy between 5 and 15 lateral m. This position was then applied to each image and suction sample collected, providing a general location.

Process Steps: Samples were collected via suction sampling. Suction sampling consisted of collecting epifauna within a 0.5m² quadrat area using a compressed air suction sampler. Samples were collected in sealable 0.5mm mesh bags connected to the suction sampler then transferred to storage containers and preserved in 70% EtOH for later processing. The 0.5m² area selected for suction sampling was imaged prior to and following collection. Samples were sorted and collected organisms were identified to the lowest possible taxa. When possible, taxa abundance was determined; when this was not possible, taxa presence was reported.

Attributes:

SAMPLE_ID: Unique identifier of suction sample; formatted as *[Date (ISO 8601)]_ [Sample Site ID]_S_ [Sample Container Identifier]*.

IMAGES_ASSOCIATED: Unique identifier of images of the 0.5m² area sampled.

YEAR: Year of image capture; formatted as integer value [2017-2018].

DATE_ISO8601: Date of image capture; formatted in ISO 8601 standard.

LONGITUDE: Longitude of sample site; formatted in decimal degrees; World Geodetic System 1984 datum.

LATITUDE: Latitude of sample site; formatted in decimal degrees; World Geodetic System 1984 datum.

SAMPLE_AREA: Sample block or site of wet diving sample location.

NEAR_SAMPLE_AREA: Sample blocks or sites nearest wet diving sample location.

DIVE_SITE_ID: Unique Identifier of image capture location [SD01-SD12].

DIVE_SITE: Text identifier of image capture location.

Identified Taxa and Biogenic Features (individually listed in dataset): Organisms identified to lowest possible taxonomic level and biogenic features; abundance of taxa were reported formatted as integer values; presence of taxa were reported as present [“present”] or absent [0] formatted as text.

Metadata reference: *{minimally: Name, org, phone/email}* Ivar G. Babb, Department of Marine Sciences, University of Connecticut, 860-405-9123, babb@uconn.edu

LISMaRC Phase II Epifauna Sample Block and Site Diversity Measures in the Long Island Sound Cable Fund Initiative Phase II area of eastern Long Island Sound Collected during SEABOSS Operations (2017)

METADATA

Dataset Originator: *University of New Haven, Christian W. Conroy; University of Connecticut, Peter Auster*

Publication Date: *6/30/2021*

Dataset Title: *LISMaRC Phase II Epifauna Sample Block and Site Diversity Measures in the Long Island Sound Cable Fund Initiative Phase II area of eastern Long Island Sound Collected during SEABOSS Operations (2017)*

Filename: *LISMaRC_BenthicEcology_2017_EpifaunaSeaBossBlockSite_Diversity.shp*

Online Linkage: <http://www.marine-geo.org/portals/lis/>

Abstract: *The shapefile includes mean sample block- (SB) and site-specific (NB) diversity measures determined using analyzed images collected during USGS SEABed Observation and Sampling System (SEABOSS) operations in November and December 2017. Shapefile data includes block and site ID and diversity measures taxonomic and feature richness (S'), evenness (J), and Shannon-Weiner diversity ($H_{\log 10}$). These are the complete records of block- and site-level diversity.*

Dataset purpose: *This dataset provides detailed information on the epifaunal communities in the Phase II study area which can be used to map the spatial characteristics of these communities relative to several environmental features to meet the Long Island Sound Cable Fund's goal of ecological characterization of the Long Island Sound sea floor in conjunction with habitat mapping efforts.*

Time period of content: *These data were collected during November and December 2017.*

Dataset Status: *Complete*

Update Frequency: *None Planned*

Theme Keywords: *Benthic ecology, Epifauna, diversity, habitat, seafloor imaging, SEABOSS, Connecticut, New York, Long Island Sound, Fishers Island Sound, estuary, Long Island Sound Mapping and Research Collaborative, LISMaRC*

Access Constraints: *none*

Use Constraints: *Data and metadata are licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 3.0 United States License](https://creativecommons.org/licenses/by-nc-sa/3.0/). Appropriate acknowledgment with a byline/credit/link must be given to both the original scientists/data contributors by reference to their relevant publications and to the Marine Geoscience Data System (www.marine-geo.org). Where citation information has been provided to us by scientists it is included with the relevant database entries, and should be acknowledged when data are used. You may browse freely, but*

you may not circulate or publish materials you obtained from this site if you do not accept the terms of providing adequate citation.

Data are provided with the express understanding that they will not be sold to third parties or included in commercial databases.

Users are strongly encouraged to contact the original investigators responsible for data made available on this site. Where appropriate, researchers are also encouraged to consider collaboration and/or co-authorship with original investigators.

Data should not be used for navigation purposes.

Point of Contact: *Christian W. Conroy, University of New Haven, cwconroy@newhaven.edu*

Dataset Credit: *The Long Island Sound Mapping and Research Collaborative (LISMaRC). LISMaRC is the University of Connecticut, the University of New Haven and the US Geological Survey. Funding provided by the Long Island Sound Seafloor Mapping Fund administered cooperatively by the EPA Long Island Sound Study and the Connecticut Department of Energy and Environmental Protection (DEEP).*

Data Quality Considerations: *see below*

Attribute accuracy: *All attributes were evaluated during data processing and analysis as standard quality control to ensure attributes contain accurate and relevant information and values.*

Completeness: *The information provided on epifaunal communities is complete*

Positional accuracy: *Shapefile object locations correspond to sample sites (NB) and the centroids of sample blocks (SB). Block and site locations were selected with the overall objective to sample as many of the different seafloor habitats that were evident in the side scan mosaic that had been previously developed for the study area.*

Process Steps: *Diversity indices were summarized as block- and site-specific mean values of taxonomic and feature richness (S'), evenness (J), and Shannon-Weiner diversity ($H_{\log 10}$) calculated at the scale of each analyzed image ($n=602$). Images were captured using the United States Geological Survey's (USGS) Seabed Observation and Sampling System (SEABOSS; Valentine et al. 2000) between November 28 and December 3, 2017 on the RV Connecticut.*

SEABOSS captured orthogonal images of the seafloor. These images were analyzed for percent cover of all living seafloor species (excluding fish) and biogenic features. Percent cover was quantified using a grid of square cells overlaid on each image ($n=216$ grid cells). Within each grid square, organisms and biogenic features were identified to lowest possible taxonomic level. The sum of these grid cells for each image and organism or biogenic feature is reported in this dataset. Within-image measures of diversity and richness of taxa and biogenic features were determined per image.

Attributes:

Name: Sample block or site.

S_taxa: Taxa richness (S).

J_taxa: Taxa evenness (J').

Hlg10_t: Taxa Shannon-Weiner diversity index ($H' \log_{10}$).

S_feat: Biogenic feature richness (S).

S_tx_ft: Combined taxa and biogenic feature richness (S).

J_tx_ft: Combined taxa and biogenic feature evenness (J').

Hlg10_tx_f: Combined taxa and biogenic feature Shannon-Weiner diversity index ($H' \log_{10}$).

sm_2017: Sample blocks and sites sampled in November or December 2017.

Metadata reference: *Christian W. Conroy, University of New Haven,*
cwconroy@newhaven.edu

LISMaRC Phase II Epifauna Sample Block and Site Diversity Measures in the Long Island Sound Cable Fund Initiative Phase II area of eastern Long Island Sound Collected during SEABOSS Operations (2018)

METADATA

Dataset Originator: *University of New Haven, Christian W. Conroy; University of Connecticut, Peter Auster*

Publication Date: *6/30/2021*

Dataset Title: *LISMaRC Phase II Epifauna Sample Block and Site Diversity Measures in the Long Island Sound Cable Fund Initiative Phase II area of eastern Long Island Sound Collected during SEABOSS Operations (2018)*

Filename: *LISMaRC_BenthicEcology_2018_EpifaunaSeaBossBlockSite_Diversity.shp*

Online Linkage: <http://www.marine-geo.org/portals/lis/>

Abstract: *The shapefile includes mean sample block- (SB) and site-specific (NB) diversity measures determined using analyzed images collected during USGS SEABed Observation and Sampling System (SEABOSS) operations in May 2018. Shapefile data includes block and site ID and diversity measures taxonomic and feature richness (S'), evenness (J), and Shannon-Weiner diversity ($H_{\log 10}$). These are the complete records of block- and site-level diversity.*

Dataset purpose: *This dataset provides detailed information on the epifaunal communities in the Phase II study area which can be used to map the spatial characteristics of these communities relative to several environmental features to meet the Long Island Sound Cable Fund's goal of ecological characterization of the Long Island Sound sea floor in conjunction with habitat mapping efforts.*

Time period of content: *These data were collected during May 2018.*

Dataset Status: *Complete*

Update Frequency: *None Planned*

Theme Keywords: *Benthic ecology, Epifauna, diversity, habitat, seafloor imaging, SEABOSS, Connecticut, New York, Long Island Sound, Fishers Island Sound, estuary, Long Island Sound Mapping and Research Collaborative, LISMaRC*

Access Constraints: *none*

Use Constraints: *Data and metadata are licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 3.0 United States License](https://creativecommons.org/licenses/by/4.0/). Appropriate acknowledgment with a byline/credit/link must be given to both the original scientists/data contributors by reference to their relevant publications and to the Marine Geoscience Data System (www.marine-geo.org). Where citation information has been provided to us by scientists it is included with the relevant database entries, and should be acknowledged when data are used. You may browse freely, but*

you may not circulate or publish materials you obtained from this site if you do not accept the terms of providing adequate citation.

Data are provided with the express understanding that they will not be sold to third parties or included in commercial databases.

Users are strongly encouraged to contact the original investigators responsible for data made available on this site. Where appropriate, researchers are also encouraged to consider collaboration and/or co-authorship with original investigators.

Data should not be used for navigation purposes.

Point of Contact: *Christian W. Conroy, University of New Haven, cwconroy@newhaven.edu*

Dataset Credit: *The Long Island Sound Mapping and Research Collaborative (LISMaRC). LISMaRC is the University of Connecticut, the University of New Haven and the US Geological Survey. Funding provided by the Long Island Sound Seafloor Mapping Fund administered cooperatively by the EPA Long Island Sound Study and the Connecticut Department of Energy and Environmental Protection (DEEP).*

Data Quality Considerations: *see below*

Attribute accuracy: *All attributes were evaluated during data processing and analysis as standard quality control to ensure attributes contain accurate and relevant information and values.*

Completeness: *The information provided on epifaunal communities is complete*

Positional accuracy: *Shapefile object locations correspond to sample sites (NB) and the centroids of sample blocks (SB). Block and site locations were selected with the overall objective to sample as many of the different seafloor habitats that were evident in the side scan mosaic that had been previously developed for the study area.*

Process Steps: *Diversity indices were summarized as block- and site-specific mean values of taxonomic and feature richness (S'), evenness (J), and Shannon-Weiner diversity ($H_{\log 10}$) calculated at the scale of each analyzed image ($n=595$). Images were captured using the United States Geological Survey's (USGS) Seabed Observation and Sampling System (SEABOSS; Valentine et al. 2000) between May 8 and 15, 2018 on the RV Connecticut.*

SEABOSS captured orthogonal images of the seafloor. These images were analyzed for percent cover of all living seafloor species (excluding fish) and biogenic features. Percent cover was quantified using a grid of square cells overlaid on each image ($n=216$ grid cells). Within each grid square, organisms and biogenic features were identified to lowest possible taxonomic level. The sum of these grid cells for each image and organism or biogenic feature is reported in this dataset. Within-image measures of diversity and richness of taxa and biogenic features were determined per image.

Attributes:

Name: Sample block or site.

S_taxa: Taxa richness (S).

J_taxa: Taxa evenness (J').

Hlg10_t: Taxa Shannon-Weiner diversity index ($H' \log_{10}$).

S_feat: Biogenic feature richness (S).

S_tx_ft: Combined taxa and biogenic feature richness (S).

J_tx_ft: Combined taxa and biogenic feature evenness (J').

Hlg10_tx_f: Combined taxa and biogenic feature Shannon-Weiner diversity index ($H' \log_{10}$).

sm_2018: Sample blocks and sites sampled in May 2018.

Metadata reference: *Christian W. Conroy, University of New Haven,*
cwconroy@newhaven.edu

LISMaRC Phase II Select Biogenic Feature Abundance in the Long Island Sound Cable Fund Initiative Phase II area of eastern Long Island Sound during SEABOSS Operations (2017-2018)

METADATA

Dataset Originator: *University of New Haven, Christian W. Conroy; University of Connecticut, Peter Auster*

Publication Date: *6/30/2021*

Dataset Title: *LISMaRC Phase II Select Biogenic Feature Abundance in the Long Island Sound Cable Fund Initiative Phase II area of eastern Long Island Sound during SEABOSS Operations (2017-2018)*

Filename: *LISMaRC_BenthicEcology_2017_18_EpifaunaSeaBossBlockSite_SelectFeature.shp*

Online Linkage: <http://www.marine-geo.org/portals/lis/>

Abstract: *The shapefile includes sample block- (SB) and site-specific (NB) percent cover of select biogenic features. Feature percent cover were assessed for images collected during USGS SEABed Observation and Sampling System (SEABOSS) in November and December 2017 and May 2018. These are the complete records of block- and site-level feature abundance.*

Dataset purpose: *This dataset provides detailed information on the epifaunal communities in the Phase II study area which can be used to map the spatial characteristics of these communities relative to several environmental features to meet the Long Island Sound Cable Fund's goal of ecological characterization of the Long Island Sound sea floor in conjunction with habitat mapping efforts.*

Time period of content: *These data were collected during May 2018.*

Dataset Status: *Complete*

Update Frequency: *None Planned*

Theme Keywords: *Benthic ecology, Epifauna, diversity, habitat, seafloor imaging, SEABOSS, ROV, Connecticut, New York, Long Island Sound, Fishers Island Sound, estuary, Long Island Sound Mapping and Research Collaborative, LISMaRC*

Access Constraints: *none*

Use Constraints: *Data and metadata are licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 3.0 United States License](https://creativecommons.org/licenses/by-nc-sa/3.0/). Appropriate acknowledgment with a byline/credit/link must be given to both the original scientists/data contributors by reference to their relevant publications and to the Marine Geoscience Data System (www.marine-geo.org). Where citation information has been provided to us by scientists it is included with the relevant database entries, and should be acknowledged when data are used. You may browse freely, but you may not circulate or publish materials you obtained from this site if you do not accept the terms of providing adequate citation.*

Data are provided with the express understanding that they will not be sold to third parties or included in commercial databases.

Users are strongly encouraged to contact the original investigators responsible for data made available on this site. Where appropriate, researchers are also encouraged to consider collaboration and/or co-authorship with original investigators.

Data should not be used for navigation purposes.

Point of Contact: *Christian W. Conroy, University of New Haven, cwconroy@newhaven.edu*

Dataset Credit: *The Long Island Sound Mapping and Research Collaborative (LISMaRC). LISMaRC is the University of Connecticut, the University of New Haven and the US Geological Survey. Funding provided by the Long Island Sound Seafloor Mapping Fund administered cooperatively by the EPA Long Island Sound Study and the Connecticut Department of Energy and Environmental Protection (DEEP).*

Data Quality Considerations: *see below*

Attribute accuracy: *All attributes were evaluated during data processing and analysis as standard quality control to ensure attributes contain accurate and relevant information and values.*

Completeness: *The information provided on epifaunal communities is complete*

Positional accuracy: *Shapefile object locations correspond to sample sites (NB) and the centroids of sample blocks (SB). Block and site locations were selected with the overall objective to sample as many of the different seafloor habitats that were evident in the side scan mosaic that had been previously developed for the study area.*

Process Steps: *Abundance was summarized as block- and site-specific mean percent cover of select biogenic features was determined in images each analyzed image (n=1197). Images were captured using the United States Geological Survey's (USGS) Seabed Observation and Sampling System (SEABOSS; Valentine et al. 2000) between November 28 and December 3, 2017 (n = 602) May 8 and 15, 2018 (n = 595) on the RV Connecticut.*

SEABOSS captured orthogonal images of the seafloor. These images were analyzed for percent cover of all living seafloor species (excluding fish) and biogenic features. Percent cover was quantified using a grid of square cells overlaid on each image (n=216 grid cells). Within each grid square, organisms and biogenic features were identified to lowest possible taxonomic level. The sum of these grid cells for each image and organism or biogenic feature is reported in this dataset.

Attributes:

Name: Sample block or site.

trrst__ : Mean percent cover of terrestrial vegetation.

Und_S__ : Mean percent cover of whole shell and shell pieces.

Zstr_s_: Mean percent cover of drift *Zostera marina*.

smpld_: Sample blocks and sites sampled.

Metadata reference: *Christian W. Conroy, University of New Haven,*
cwconroy@newhaven.edu

LISMaRC Phase II Epifauna Sample Block and Site Simper Cluster, Distribution of Communities, and Geographic Regions in the Long Island Sound Cable Fund Initiative Phase II area of eastern Long Island Sound Collected during SEABOSS Operations (2017-2018)

METADATA

Dataset Originator: *University of New Haven, Christian W. Conroy; University of Connecticut, Peter Auster*

Publication Date: *6/30/2021*

Dataset Title: *LISMaRC Phase II Epifauna Sample Block and Site Simper Cluster, Distribution of Communities, and Geographic Regions in the Long Island Sound Cable Fund Initiative Phase II area of eastern Long Island Sound Collected during SEABOSS Operations (2017-2018)*

Filename: *LISMaRC_BenthicEcology_2017_18_EpifaunaSeaBossBlockSite_Clusters.shp*

Online Linkage: <http://www.marine-geo.org/portals/lis/>

Abstract: *The shapefile includes sample block- (SB) and site-specific (NB) epifaunal community types determined using SIMPROF hierarchical clustering and broader geographic regions defined using community types and their spatial distribution. Taxon and biogenic feature abundance (SEABOSS images only) were assessed for images collected during USGS SEABed Observation and Sampling System (SEABOSS) in November and December 2017 and May 2018. These are the complete records of block- and site-level multivariate community analyses.*

Dataset purpose: *This dataset provides detailed information on the epifaunal communities in the Phase II study area which can be used to map the spatial characteristics of these communities relative to several environmental features to meet the Long Island Sound Cable Fund's goal of ecological characterization of the Long Island Sound sea floor in conjunction with habitat mapping efforts.*

Time period of content: *These data were collected during November and December 2017 and May 2018.*

Dataset Status: *Complete*

Update Frequency: *None Planned*

Theme Keywords: *Benthic ecology, Epifauna, diversity, habitat, seafloor imaging, SEABOSS, Connecticut, New York, Long Island Sound, Fishers Island Sound, estuary, Long Island Sound Mapping and Research Collaborative, LISMaRC*

Access Constraints: *none*

Use Constraints: *Data and metadata are licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 3.0 United States License](https://creativecommons.org/licenses/by-nc-sa/3.0/). Appropriate acknowledgment with a byline/credit/link must be given to both the original scientists/data contributors by reference to their relevant publications and to the Marine Geoscience Data System (www.marine-geo.org).*

Where citation information has been provided to us by scientists it is included with the relevant database entries, and should be acknowledged when data are used. You may browse freely, but you may not circulate or publish materials you obtained from this site if you do not accept the terms of providing adequate citation.

Data are provided with the express understanding that they will not be sold to third parties or included in commercial databases.

Users are strongly encouraged to contact the original investigators responsible for data made available on this site. Where appropriate, researchers are also encouraged to consider collaboration and/or co-authorship with original investigators.

Data should not be used for navigation purposes.

Point of Contact: *Christian W. Conroy, University of New Haven, cwconroy@newhaven.edu*

Dataset Credit: *The Long Island Sound Mapping and Research Collaborative (LISMaRC). LISMaRC is the University of Connecticut, the University of New Haven and the US Geological Survey. Funding provided by the Long Island Sound Seafloor Mapping Fund administered cooperatively by the EPA Long Island Sound Study and the Connecticut Department of Energy and Environmental Protection (DEEP).*

Data Quality Considerations: *see below*

Attribute accuracy: *All attributes were evaluated during data processing and analysis as standard quality control to ensure attributes contain accurate and relevant information and values.*

Completeness: *The information provided on epifaunal communities is complete*

Positional accuracy: *Shapefile object locations correspond to sample sites (NB) and the centroids of sample blocks (SB). Block and site locations were selected with the overall objective to sample as many of the different seafloor habitats that were evident in the side scan mosaic that had been previously developed for the study area.*

Process Steps: *Image data from all SEABOSS surveys were aggregated to block and site designations and mean values calculated to identify large scale variation in community structure (i.e., images within sites treated as replicates versus samples). Multivariate analyses were implemented with live taxa and biogenic features as well as live taxa only. SIMPROF was used to identify similarities between sites at the 1% threshold level for hierarchical cluster analyses.*

A qualitative hierarchical approach for aggregating sites as implemented based on geographic proximity and similarity of ecological features. The most parsimonious was a set of four groupings representing coastal, west, central, and east regions within the map area.

SEABOSS captured orthogonal images of the seafloor. These images were analyzed for percent cover of all living seafloor species (excluding fish) and biogenic features. Percent cover was quantified using a grid of square cells overlaid on each image (n=216 grid cells). Within each grid square, organisms and biogenic features were identified to lowest possible taxonomic level.

The sum of these grid cells for each image and organism or biogenic feature is reported in this dataset. Within-image measures of diversity and richness of taxa and biogenic features were determined per image.

Attributes:

Name: Sample block or site.

Geo_Region: Qualitative geographic regions based on the spatial distribution of community type.

Simp_Clust: Sample block- or site-specific community type determined using SIMPROF hierarchical clustering.

Metadata reference: *Christian W. Conroy, University of New Haven,*
cwconroy@newhaven.edu

LISMaRC Phase II Select Epifauna Taxa Abundance in the Long Island Sound Cable Fund Initiative Phase II area of eastern Long Island Sound during SEABOSS Operations (2017-2018)

METADATA

Dataset Originator: *University of New Haven, Christian W. Conroy; University of Connecticut, Peter Auster*

Publication Date: 6/30/2021

Dataset Title: *LISMaRC Phase II Select Epifauna Taxa Abundance in the Long Island Sound Cable Fund Initiative Phase II area of eastern Long Island Sound during SEABOSS Operations (2017-2018)*

Filename: LISMaRC_BenthicEcology_2017_18_EpifaunaSeaBossBlockSite_SelectTaxa.shp

Online Linkage: <http://www.marine-geo.org/portals/lis/>

Abstract: *The shapefile includes sample block- (SB) and site-specific (NB) percent cover of select taxa. Taxon percent cover were assessed for images collected during USGS SEABed Observation and Sampling System (SEABOSS) in November and December 2017 and May 2018. These are the complete records of block- and site-level taxa abundance.*

Dataset purpose: *This dataset provides detailed information on the epifaunal communities in the Phase II study area which can be used to map the spatial characteristics of these communities relative to several environmental features to meet the Long Island Sound Cable Fund's goal of ecological characterization of the Long Island Sound sea floor in conjunction with habitat mapping efforts.*

Time period of content: *These data were collected during May 2018.*

Dataset Status: *Complete*

Update Frequency: *None Planned*

Theme Keywords: *Benthic ecology, Epifauna, diversity, habitat, seafloor imaging, SEABOSS, ROV, Connecticut, New York, Long Island Sound, Fishers Island Sound, estuary, Long Island Sound Mapping and Research Collaborative, LISMaRC*

Access Constraints: *None*

Use Constraints: *Data and metadata are licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 3.0 United States License](https://creativecommons.org/licenses/by-nc-sa/3.0/). Appropriate acknowledgment with a byline/credit/link must be given to both the original scientists/data contributors by reference to their relevant publications and to the Marine Geoscience Data System (www.marine-geo.org). Where citation information has been provided to us by scientists it is included with the relevant database entries, and should be acknowledged when data are used. You may browse freely, but you may not circulate or publish materials you obtained from this site if you do not accept the terms of providing adequate citation.*

Data are provided with the express understanding that they will not be sold to third parties or included in commercial databases.

Users are strongly encouraged to contact the original investigators responsible for data made available on this site. Where appropriate, researchers are also encouraged to consider collaboration and/or co-authorship with original investigators.

Data should not be used for navigation purposes.

Point of Contact: *Christian W. Conroy, University of New Haven, cwconroy@newhaven.edu*

Dataset Credit: *The Long Island Sound Mapping and Research Collaborative (LISMaRC). LISMaRC is the University of Connecticut, the University of New Haven and the US Geological Survey. Funding provided by the Long Island Sound Seafloor Mapping Fund administered cooperatively by the EPA Long Island Sound Study and the Connecticut Department of Energy and Environmental Protection (DEEP).*

Data Quality Considerations: *see below*

Attribute accuracy: *All attributes were evaluated during data processing and analysis as standard quality control to ensure attributes contain accurate and relevant information and values.*

Completeness: *The information provided on epifaunal communities is complete*

Positional accuracy: *Shapefile object locations correspond to sample sites (NB) and the centroids of sample blocks (SB). Block and site locations were selected with the overall objective to sample as many of the different seafloor habitats that were evident in the side scan mosaic that had been previously developed for the study area.*

Process Steps: *Abundance was summarized as block- and site-specific mean percent cover of select epifaunal taxa as determined in images each analyzed image (n=1197). Images were captured using the United States Geological Survey's (USGS) Seabed Observation and Sampling System (SEABOSS; Valentine et al. 2000) between November 28 and December 3, 2017 (n = 602) May 8 and 15, 2018 (n = 595) on the RV Connecticut.*

SEABOSS captured orthogonal images of the seafloor. These images were analyzed for percent cover of all living seafloor species (excluding fish) and biogenic features. Percent cover was quantified using a grid of square cells overlaid on each image (n=216 grid cells). Within each grid square, organisms and biogenic features were identified to lowest possible taxonomic level. The sum of these grid cells for each image and organism or biogenic feature is reported in this dataset.

Attributes:

Name: Sample block or site.

*Astrng_: Mean percent cover of *Astrangia poculata*.*

*Cln_sp_: Mean percent cover of *Cliona* spp.*

Crymrp_: Mean percent cover of *Corymorpha pendula*.

Crpdl_f: Mean percent cover of *Crepidula fornicata*.

Ddmn_lc: Mean percent cover of *Diadumene leucolena*.

Ddmnm_v: Mean percent cover of *Didemnum vexillum*.

Hydrz__: Mean percent cover of hydrozoan and bryozoan turfs.

Laminrc: Mean percent cover of Laminariaceae.

Mytls_d: Mean percent cover of *Mytilus edulis*.

Rhdphyt: Mean percent cover of Rhodophyta.

smpld_: Sample blocks and sites sampled.

Metadata reference: Christian W. Conroy, University of New Haven,
cwconroy@newhaven.edu

Appendix 2-4: Physical Oceanographic Characterization Metadata

Appendix 2-4.1: CTD Profiles, Moored CTD, Moored RDI and Nortec ADCP

Appendix 2-4.2: Modeling for Bottom Stresses and Currents

Appendix 2-4.3: Modeling for Temperature and Salinity

LIS Mapping Initiative Phase II Physical Environment Data and Data Standards Inventory

James O'Donnell, Kay Howard Strobel and Grant McCardell

METADATA

1. Introduction

There are five types of data that were collected during the field programs supported under Phase-II of the mapping initiative. We refer to these and CTD (conductivity and temperature depth) profiles, moored CTDs (to measure time series of near bottom salinity and temperature), two types of moored ADCPs (time series of the vertical profile of current, and wave parameters), and moored CTD time series. These data were used to develop and evaluate the model used to create maps of bottom temperature and shear stress. The data and metadata standards for each of these are described in the following sections.

2. CTD Profiles

Data Originator: *James O'Donnell (james.odonnell@uconn.edu); Kay Howard Strobel (kay.howard-strobel@uconn.edu)*

Publication Date: *31-Aug-21*

Dataset Title: *Eastern LIS water column properties*

Online Linkage: *None*

Abstract: *The data were obtained during ship survey cruises using two instrument systems lowered over the side: a SeaBird Electronic SBE9plus (<https://www.seabird.com/profiling/sbe-911plus-ctd/family?productCategoryId=54627473769>), or a SeaBird Electronics SBE19plus V2 (<https://www.seabird.com/sbe-19plus-v2-seacat-profiler-ctd/product?id=60761421596>). These instruments provide data in a "raw" machine-readable (.hex) format that can be further processed by the manufacturer's software to an ASCII text file (.cnv). The critical data are the pressure at the instrument level, seawater conductivity ratio and temperature. With these the depth dependence of the "practical salinity" and temperature can be computed, and the water density inferred from conventional parameterizations. These variables are reported in the ASCII files. These were then converted using MATLAB to NETCDF format files that use CF-1.6, based on OceanSITES-1.2 standards (http://www.oceansites.org/docs/oceansites_data_format_reference_manual.pdf).*

Dataset purpose: *The data was used in the development and testing of the model used to map temperature and bottom stress.*

Time period of content: *March 28-29, 2017; June 7-8, 2017; Nov 28-Dec 3, 2017; Mar 19, 2018; May 8-15, 2019.*

Dataset Status: *Complete*

Update Frequency: *None*

Theme Keywords: *Long Island Sound, Salinity, Temperature, Density, Depth-profiles*
Access Constraints: *None*

Use Constraints: *None*

Point of Contact: *James O'Donnell, University of Connecticut, james.odonnell@uconn.edu; (860) 992-2499*

Dataset Credit: *James O'Donnell (james.odonnell@uconn.edu); Kay Howard Strobel (kay.howard-strobel@uconn.edu); LISMARC II*

Data Quality Considerations: *None*

Attribute accuracy: *Research quality*

Completeness: *Complete*

Positional accuracy: *Location was recorded at the beginning of the instrument deployment. Ship drift during the collection of data (30-60s) may be several tens of meters.*

Process Steps: *SeaBird SeasoftV2*

Attributes: *'time' - days since 1950-01-01T00:00:00Z*
 'LATITUDE' - Station latitude, [degrees north]
 'LONGITUDE' - Station longitude, [degrees east]
 'scan' or sample number
 'timeS' - Time Elapsed since start of profile
 'prDM' - 'Pressure, Digiquartz [deciBar]
 't090C' - Temperature [ITS-90, deg C]
 'c0Sm' - Conductivity [S/m]
 'sal00' - Salinity, Practical [PSU]
 'sigma-t00' - Density [sigma-t, kg/m³]

Metadata reference: *James O'Donnell, University of Connecticut; james.odonnell@uconn.edu; 860 992 2499B8A7:B27A6:B27A5:B27A2:B27A1:B27B5B9:B27*

3. Moored CTD Data

Dataset Originator: *James O'Donnell (james.odonnell@uconn.edu); Kay Howard Strobel (kay.howard-strobel@uconn.edu)*

Publication Date: *31-Aug-21*

Dataset Title: *Eastern LIS water column properties*

Online Linkage: *None*

Abstract: *The distribution of temperature and salinity of the eastern part of Long Island Sound directly impacts the coastal ecology. These parameters are also tracers that indicate the relative importance of ocean and terrestrial influences. The salinity, temperature and pressure data described here were obtained using SeaBird Instruments SBE37 (<https://www.seabird.com/moored/sbe-37-sm-smp-smp-odo-microcat/family?productCategoryId=54627473786>) deployed with ADCP on the bottom of the Sound. In the spring of 2017 three stations, (labeled SOW1, EID2, and WID3) were sampled. In the winter of 2017-18 five stations were used (SOW1, EID2, WID3, WFW4, and SFW5). These instruments provide data in a "raw" machine-readable (.hex) format that can be further processed by the manufacturer's software to an ASCII text file (.cnv). The critical data are the pressure at the instrument level, seawater conductivity ratio and temperature. With these the depth dependence of the "practical salinity" and temperature can be computed, and the water density inferred from conventional parameterizations. These variables are reported in the ASCII files. These were then converted using MATLAB to NETCDF format files that use CF-1.6, based on OceanSITES-1.2 standards. (http://www.oceansites.org/docs/oceansites_data_format_reference_manual.pdf).*

Dataset purpose: *The data was used in the development and testing of the model used to map temperature and bottom stress.*

Time period of content: *Spring 2017: SOW1 (March 30-June 7), EID2 (28 March-June 8th); Winter 2017-18: SOW1 (March 30-June 7), EID2 (28 March-June 8th) WID3, WFW4, and SFW5*

Dataset Status: *Complete*

Update Frequency: *None*

Theme Keywords: *Long Island Sound, Near Bottom Salinity, Temperature, Density, Depth*

Access Constraints: *None*

Use Constraints: *None*

Point of Contact: *James O'Donnell, University of Connecticut; james.odonnell@uconn.edu; (860) 992-2499*

Dataset Credit: *James O'Donnell (james.odonnell@uconn.edu); Kay Howard Strobel (kay.howard-strobel@uconn.edu); LISMARC II*

Data Quality Considerations: *None*

Attribute accuracy: *Research quality*

Completeness: *Complete*

Positional accuracy: *Location was recorded at the beginning of the instrument deployment. Ship drift during the deployment (60s) may be several tens of meters*

Process Steps: *SeaBird SeasoftV2*

Attributes: *'time' - days since 1950-01-01T00:00:00Z*
'LATITUDE' - Station latitude, [degrees north]
'LONGITUDE' - Station longitude, [degrees east]
'scan' or sample number
'timeS' - Time Elapsed since start of profile
'prDM' - 'Pressure, Digiquartz [deciBar]
't090C' - Temperature [ITS-90, deg C]
'c0Sm' - Conductivity [S/m]
'sal00' - Salinity, Practical [PSU]
'sigma-t00' - Density [sigma-t, kg/m³]

Metadata reference: *James O'Donnell, University of Connecticut; james.odonnell@uconn.edu; (860) 992-2499*

4. Moored RDI ADCP Data

Dataset Originator: *James O'Donnell (james.odonnell@uconn.edu); Kay Howard Strobel (kay.howard-strobel@uconn.edu)*

Publication Date: *31-Aug-21*

Dataset Title: *Eastern LIS Circulation*

Online Linkage: *None*

Abstract: *The circulation in the eastern part of Long Island Sound is highly variable in both space and time due to the complex bathymetry and coastal geometry. Since the water motion determines the shear stress on the sediments and benthos, the temperature and salinity, and the transport of material and organisms, it has a major impact on coastal ecology. The current data described here were obtained using two types of instruments deployed on the bottom of the Sound on a tripod frame in the spring of 2017 at stations labeled (SOW1, EID2, and WID3). In the winter of 2017-18 five stations were used (SOW1, EID2, WID3, WFW4, and SFW5). In the springs 2 MHz Nortek AQD (<https://www.nortekgroup.com/products/aquadop-profiler-2-mhz>) was mounted 0.75 m above the seabed and oriented in a downward direction and a Teledyne RDI "Workhorse Sentinel" ADCP (<http://www.teledynemarine.com/workhorse-sentinel-adcp/?BrandID=16>) was positioned 1.5 m above the seafloor and oriented to profile towards the surface. In the winter only the RDI ADCPs were used. Both instruments log data in "machine-readable format that can be further processed by the manufacturer's software to ASCII files. MATLAB was then used create NETCDF files.*

Dataset purpose: *The data was used in the development and testing of the model used to map temperature and bottom stress.*

Time period of content: Spring 2017: SOW1 (March 30-June 7), EID2 (28 March-June 8th); Winter 2017-18: SOW1 (March 30-June 7), EID2 (28 March-June 8th) WID3, WFW4, and SFW5

Dataset Status: *Complete*

Update Frequency: *None*

Theme Keywords: *Long Island Sound, Vertical Current Profiles*

Access Constraints: *None*

Use Constraints: *None*

Point of Contact: *James O'Donnell, University of Connecticut; james.odonnell@uconn.edu; (860) 992-2499*

Dataset Credit: *James O'Donnell (james.odonnell@uconn.edu); Kay Howard Strobel (kay.howard-strobel@uconn.edu); LISMARC II*

Data Quality Considerations: *None*

Attribute accuracy: *Research quality*

Completeness: *Complete*

Positional accuracy: *Location was recorded at the beginning of the instrument deployment. Ship drift during the collection of data (30-60s) may be several tens of meters*

Process Steps: *Teledyne-RDI software package "Velocity v1.7.22"*

Attributes:

- Mooring name*
- Deployment date*
- Recovery date*
- Latitude*
- Longitude*
- Latitude units*
- Longitude units*
- Magnetic declination*
- Water depth*
- Water depth units*
- Water depth method*
- Transducer height*
- Transducer height units*
- ADCP freq*
- ADCP freq units*

Sample freq
Samples per burst
ADCP serial no.
History
PI
Processed by
Pings per ensemble
Cell size m
Blank distance m
Corr threshold
Height
 Units = 'm'
 Long name = 'bin height above seabed (m)'
note = *'bin heights include transducer height'*
axis = *'Z'*
Time
 Standard name = 'time'
 Units = 'days since midnight January 1, 4713 EST'
 Calendar = 'julian'
 Time zone = 'EST'
 Axis = 'T'
Depth
 Units = 'm'
 Long name = 'total water depth'
 Standard name = 'sea floor depth below sea surface'
 Note = 'water depth includes transducer height and ADCP pressure'
Number
 Units = 'bursts'
 Long name = 'burst number'
Pitch
 Units = 'deg'
 Standard name = 'platform pitch angle'
Roll
 Units = 'deg'
 Standard name = 'platform pitch angle'
Heading
 Units = 'deg'
 Standard name = 'platform orientation'
 convention = 'magnetic'
Pitch_std
 Units = 'deg'
Roll_std
 Units = 'deg'
Heading
 Units = 'deg'

Temp
Units = 'C'
Long name = 'water temperature'

Salt
Units = 'PSU'
Long name = 'salinity'
Note = 'constant used, not measured'

Press
Units = 'Deca-Pascals'
Long name = 'pressure'
Note = 'pressure at transducer, relative to 1 atm. 1DPa ~ 1mm water'

Press st
Units = 'deca-Pascals'
Long name = 'pressure'

East vel
Units = 'm/s'
Standard name = 'eastward_sea_water_velocity'
Convention = 'true (rotated for magnetic declination)'

North vel
Units = 'm/s'
Standard name = 'northward_sea_water_velocity'
Convention = 'true (rotated for magnetic declination)'

Vert vel
Units = 'm/s'
standard_name = 'upward_sea_water_velocity'

Error vel
Units = 'm/s'
Long_name = 'error velocity'

Corr
Range = [0 255]
Long_name = 'normalized echo autocorrelation'

Status
Long_name = 'status flag'
Note = '0 is good, 1 is bad'

Intens
Range = [0 255]
Long_name = 'echo intensity'
Units = 'counts'

Perc
Long_name = 'percent of ensembles'

Metadata reference: james.odonnell@uconn.edu; (860) 992-2499

5. Moored NORTEK ADCP Data

Dataset Originator: *James O'Donnell (james.odonnell@uconn.edu); Kay Howard Strobel (kay.howard-strobel@uconn.edu)*

Publication Date: *31-Aug-21*

Dataset Title: *Eastern LIS Circulation*

Online Linkage: *None*

Abstract: *The circulation in the eastern part of Long Island Sound is highly variable in both space and time due to the complex bathymetry and coastal geometry. Since the water motion determines the shear stress on the sediments and benthos, the temperature and salinity, and the transport of material and organisms, it has a major impact on coastal ecology. The current data described here were obtained using two types of instruments deployed on the bottom of the Sound on a tripod frame in the spring of 2017 at stations labeled (SOW1, EID2, and WID3). In the winter of 2017 18 five stations were used (SOW1, EID2, WID3, WFW4, and SFW5). In the springs 2 MHz Nortek AQD (<https://www.nortekgroup.com/products/aquadop-profiler-2-mhz>) was mounted 0.75 m above the seabed and oriented in a downward direction and a Teledyne RDI "Workhorse Sentinel" ADCP (<http://www.teledynemarine.com/workhorse-sentinel-adcp/?BrandID=16>) was positioned 1.5 m above the seafloor and oriented to profile towards the surface. In the winter only the RDI ADCPs were used. Both instruments log data in "machine-readable format that can be further processed by the manufacturer's software to ASCII files. MATLAB was then used create NETCDF files.*

Dataset purpose: *The data was used in the development and testing of the model used to map temperature and bottom stress.*

Time period of content: Spring 2017: SOW1 (March 30-June 7), EID2 (28 March-June 8th); Winter 2017-18: SOW1 (March 30-June 7), EID2 (28 March-June 8th) WID3, WFW4, and SFW5

Dataset Status: *Complete*

Update Frequency: *None*

Theme Keywords: *Long Island Sound Near-bed vertical current profiles*

Access Constraints: *None*

Use Constraints: *None*

Point of Contact: *James O'Donnell, University of Connecticut; james.odonnell@uconn.edu; (860) 992-2499*

Dataset Credit: James O'Donnell (james.odonnell@uconn.edu); Kay Howard-Strobel (kay.howard-strobel@uconn.edu); LISMARC II

Data Quality Considerations: *None*

Attribute accuracy: *Research quality*

Completeness: *Complete*

Positional accuracy: *Location was recorded at the beginning of the instrument deployment. Ship drift during the collection of data (30-60s) may be several tens of meters*

Process Steps: *Matlab programs to prepare NC files*

Attributes:

- Creation Date*
- Title*
- Long title*
- Institution*
- Source*
- Created By*
- Notes*
- Eam_ping_velocity*
 - Standard_name = 'beam_ping_velocity'*
 - Long_name = 'beam velocity components'*
 - Units = 'm/s'*
- Enu_ping_velocity*
 - Standard_name = 'ping_enu_velocity'*
 - Long_name = 'enu ping velocity components'*
 - Units = 'm/s'*
- Amp Cnts*
 - Long_name = 'Backscatter_amp'*
 - Units = 'cnts'*
- Sen_ping_data*
 - Standard_name = 'Sen_dataTable'*
 - Long_name = 'Single Ping Sensor data'*
 - Units = 'variable'*
- Latitude*
 - Standard_name = 'latitude'*
 - Long_name = 'data location latitude'*
 - Units = 'degrees'*
- Longitude*
 - Standard_name = 'longitude'*
 - Long_name = 'data location longitude'*
 - Units = 'degrees'*
- Depth*
 - Standard_name = 'depth'*

Long_name = 'data location depth below mean surface'
Units = 'meters'
Time
Standard_name = 'time'
Long_name = 'ping time in datenum convention'
Units = 'days'
PingN
Long_name = 'Ping index number'
BurstN
Long_name = 'sample Sequence number'
Burstdaten
Long_name = 'burst time in datenum convention'
units = 'days'
CellN
Long_name = 'Bins to use'
Outlier1
Long_name = 'Outliers in Beam 1'
Outlier2
Long_name = 'Outliers in Beam 2'

Outlier3
Long_name = 'Outliers in Beam 3'
Sdraw1
Long_name = 'SD in raw Beam 1'
Sdraw2
Long_name = 'SD in raw Beam 2'
Sdraw3
Long_name = 'SD in raw Beam 3'
MNraw1
Long_name = 'MN in raw Beam 1'
MNraw2
Long_name = 'MN in raw Beam 2'
MNraw3
Long_name = 'MN in raw Beam 3'
SD1
Long_name = 'SD in Beam 1'
SD2
Long_name = 'SD in Beam 2'
SD3
Long_name = 'SD in Beam 3'
MN1
Long_name = 'MN in Beam 1'
MN2
Long_name = 'MN in Beam 2'
MN3
Long_name = 'MN in Beam 3'

BEAM1mnvel
 Long_name = 'Burst_mean_BEAM1_vel'
 Units = 'm/s'
BEAM2mnvel
 Long_name = 'Burst_mean_BEAM2_vel'
 Units = 'm/s'
BEAM3mnvel
 Long_name = 'Burst_mean_BEAM3_vel'
 Units = 'm/s'
Emnvel
 Long_name = 'Burst_mean_E_vel'
 Units = 'm/s'
Nmnvel
 Long_name = 'Burst_mean_N_vel'
 Units = 'm/s'
Umnvel
 Long_name = 'Burst_mean_U_vel'
 Units = 'm/s'
BEAM1sdvel
 Long_name = 'Burst_stdev_BEAM1_vel'
 Units = 'm/s'
BEAM2sdvel
 Long_name = 'Burst_stdev_BEAM2_vel'
 Units = 'm/s'
BEAM3sdvel
 Long_name = 'Burst_stdev_BEAM3_vel'
 Units = 'm/s'
Esdvel
 Long_name = 'Burst_stdev_E_vel'
 Units = 'm/s'
Nsdvel
 Long_name = 'Burst_stdev_N_vel'
 Units = 'm/s'
Usdvel
 Long_name = 'Burst_stdev_U_vel'
 Units = 'm/s'
NdofBEAMvel
 Long_name = 'DOF_for_BEAM_vel'
 Units = 'none'
NdofENUvel
 Long_name = 'DOF_for_ENU_vel'
 Units = 'none'
SENmn
 Long_name = 'Burst_mean_SEN_data'
 Units = '9 Analog input 2 counts'
SENsd

Long_name = 'Burst_stdev_SEN_data'
thetaRld
Long_name = 'rotation_to_var_axis'
mnuw
Long_name = 'Burst_mean_uw'
Units = 'm^2/s^2'
mnuvw *Long_name = 'Burst_mean_vw'*
Units = 'm^2/s^2'
mnuwd
Long_name = 'Burst_mean_uwd'
Units = 'm^2/s^2'
mnuwd
Long_name = 'Burst_mean_vwd'
Units = 'm^2/s^2'
thtr
Long_name = 'rotation1_to_streamline'
Units = 'rads'
phir
Long_name = 'rotation2_to_streamline'
Units = 'rads'
thtrd
Long_name = 'rotation1_to_streamline_dewave'
Units = 'rads'
phird
Long_name = 'rotation2_to_streamline_dewave'
Units = 'rads'

Metadata reference: james.odonnell@uconn.edu; (860) 992-2499

Physical Oceanographic Model Products Metadata: Bed-Stresses and Currents

METADATA

Dataset Originator: Grant McCardell, James O'Donnell, *University of Connecticut*

Publication Date: *October, 2021*

Dataset Title: *Mean and Maximum Near-bottom Bed-Stresses and Currents*

Online Linkage: *<http://www.marine-geo.org/portals/lis/>*

Abstract: *The FVCOM computer model was initialized and run using conditions for 2017. The model was used to produce maps of:*

- 1. The spatial structure of the maximum bottom stress magnitude due to (mainly) tidal currents*
- 2. The spatial structure of the mean bottom stress magnitude due to (mainly) tidal currents*
- 3. The spatial structure of the tidal amplitudes at the M_2 frequency of the east-west (u) and north-south (v) components of the near-bottom currents*
- 4. The spatial structure of the east-west (u) and north-south components of the subtidal residual (long term mean) of the near-bottom currents.*

Dataset purpose: *We report the results of a numerical model to estimate the distributions of ecologically relevant characteristics of the near bottom environment. We present this information as GIS-format map products with information that spans the study-area domain.*

Time period of content: *Jan 2017-Dec 2017*

Dataset Status: *complete*

Update Frequency: *none planned*

Theme Keywords: *Ecologically relevant physical characteristics of the near-bottom environment*

Access Constraints: *none*

Use Constraints: *Data and metadata are licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 3.0 United States License](https://creativecommons.org/licenses/by-nc-sa/3.0/). Appropriate acknowledgment with a byline/credit/link **must** be given to both the original scientists/data contributors by reference to their relevant publications and to the Marine Geoscience Data System (www.marine-geo.org). Where citation information has been provided to us by scientists it is included with the relevant database entries, and should be acknowledged when data are used. You may browse freely, but*

you may not circulate or publish materials you obtained from this site if you do not accept the terms of providing adequate citation.

Data are provided with the express understanding that they will not be sold to third parties or included in commercial databases.

Users are strongly encouraged to contact the original investigators responsible for data made available on this site. Where appropriate, researchers are also encouraged to consider collaboration and/or co-authorship with original investigators.

Data should not be used for navigation purposes.

Point of Contact: *Grant McCardell, University of Connecticut. grant.mccardell@uconn.edu*

Dataset Credit: *Grant McCardell, James O'Donnell, University of Connecticut*

Data Quality Considerations: *A limited measurement program was executed to acquire current distributions so that the performance of the model could be critically assessed. In the study region, model currents were generally well within 5 cm s^{-1} of measured values. Bed stresses estimated from the model were generally within 0.1 Pa of bed stresses estimated from the measurement program.*

Attribute accuracy: *In the study region, model currents were generally well within $\pm 5 \text{ cm s}^{-1}$ [$\pm 0.05 \text{ m s}^{-1}$] of measured values. Stresses are generally within $\pm 0.1 \text{ Pa}$.*

Completeness: *100%*

Positional accuracy: *56 m*

Process Steps: *FVCOM model output for the near-bottom layer was averaged over monthly periods for 2017. These results were then interpolated onto a 989×410 rectangular grid using Matlab with a nearest-neighbor methodology. The gridded data was input into ArcGIS and used to create both geo-referenced GEOTIFF raster files and geo-referenced ESRI SHAPE files with contour information. For information on the model initialization and forcing, see Section 6.2 in the LISMaRC Phase II Final Report: <https://lismap.uconn.edu/wp-content/uploads/sites/2333/2022/04/LISMaRC-Phase-II-Final-Report.pdf>*

Attributes:

Near-bottom currents: m s^{-1}

Bed Stress: Pascals [Pa]

Spatial_Reference: NAD_1983_UTM_Zone_18N

Linear_Unit: Meter (1.000000)

Angular_Unit: Degree (0.017453292519943295)

False_Easting: 500000

False_Northing: 0

Central_Meridian: 75
Scale_Factor: 0.9996
Latitude_Of_Origin: 0
Datum: D_North_American_1983

Metadata reference: Grant McCardell, James O'Donnell, *University of Connecticut*

Physical Oceanographic Model Products Metadata: Temperatures and Salinities

METADATA

Dataset Originator: Grant McCardell, James O'Donnell, *University of Connecticut*

Publication Date: *October, 2021*

Dataset Title: *Monthly Mean Near-bottom Temperatures and Salinities*

Online Linkage: *<http://www.marine-geo.org/portals/lis/>*

Abstract: *The FVCOM computer model was initialized and run using conditions for 2017. The model was used to produce maps of:*

- 1. The bottom temperature distributions throughout the study area for each month*
- 2. The bottom salinity distributions throughout the study area for each month*

Dataset purpose: *We report the results of a numerical model to estimate the distributions of ecologically relevant characteristics of the near bottom environment. We present this information as GIS-format map products with information that spans the study-area domain.*

Time period of content: *Jan 2017-Dec 2017 by month*

Dataset Status: *complete*

Update Frequency: *none planned*

Theme Keywords: *Ecologically relevant physical characteristics of the near-bottom environment*

Access Constraints: *none*

Use Constraints: *Data and metadata are licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 3.0 United States License](#). Appropriate acknowledgment with a byline/credit/link **must** be given to both the original scientists/data contributors by reference to their relevant publications and to the Marine Geoscience Data System (www.marine-geo.org). Where citation information has been provided to us by scientists it is included with the relevant database entries, and should be acknowledged when data are used. You may browse freely, but you may not circulate or publish materials you obtained from this site if you do not accept the terms of providing adequate citation.*

Data are provided with the express understanding that they will not be sold to third parties or included in commercial databases.

Users are strongly encouraged to contact the original investigators responsible for data made available on this site. Where appropriate, researchers are also encouraged to consider collaboration and/or co-authorship with original investigators.

Data should not be used for navigation purposes.

Point of Contact: *Grant McCardell, University of Connecticut. grant.mccardell@uconn.edu*

Dataset Credit: *Grant McCardell, James O'Donnell, University of Connecticut*

Data Quality Considerations: *A limited measurement program was executed to acquire salinity, temperature, and current distributions so that the performance of the model in describing the small scale spatial variations and the seasonal scale evolution of the variables could be critically assessed. In the study region, model temperatures were generally well within $\pm 1^{\circ}\text{C}$ of measured values. Salinities are generally within ± 1 ppt.*

Attribute accuracy: *In the study region, model temperatures are generally well within $\pm 1^{\circ}\text{C}$ of measured values. Salinities are generally within ± 1 ppt.*

Completeness: *100%*

Positional accuracy: *56 m*

Process Steps: *FVCOM model output for the near-bottom layer was averaged over monthly periods for 2017. These results were then interpolated onto a 989×410 rectangular grid using Matlab with a nearest-neighbor methodology. The gridded data was input into ArcGIS and used to create both geo-referenced GEOTIFF raster files and geo-referenced ESRI SHAPE files with contour information. For information on the model initialization and forcing, see Section 6.2 in the LISMaRC Phase II Final Report: <https://lismap.uconn.edu/wp-content/uploads/sites/2333/2022/04/LISMaRC-Phase-II-Final-Report.pdf>*

Attributes:

*Temperature: degrees Celsius [$^{\circ}\text{C}$]
Salinity: parts per thousand [PPT]
Spatial_Reference: NAD_1983_UTM_Zone_18N
Linear_Unit: Meter (1.000000)
Angular_Unit: Degree (0.017453292519943295)
False_Easting: 500000
False_Northing: 0
Central_Meridian: 75
Scale_Factor: 0.9996
Latitude_Of_Origin: 0
Datum: D_North_American_1983*

Metadata reference: Grant McCardell, James O'Donnell, *University of Connecticut*

APPENDIX THREE – FIELD DATA COLLECTION LOGS

Appendix 3-1: Shallow Water Acoustic Mapping Field Logs

6/11/2018 (JD = 18162)

(JD = 18 170)

Tuesday: Low Tide @ 13:14 (UTC) (currents ^{antenna} GPS height = 5.25m @ dock @ 13:57 UTC)
 Acq. Settings: 1, 2, 2, 35m
 Line Spacing = 30m
Block 2

Line Name	Time	Heading	Speed	Remarks
Leave dock	14:00 (UTC)			Leave dock @ 10:00 (EDT)
SVP18170-01	N/A			
AI-743540	N/A			
Return to dock	15:00 (UTC)			Return to dock. Deck box likely overheating.
@ dock; Testing deck box. Tx all	OK now,			16:00 (UTC)

6/20/2018 (JD = 18171)

Wednesday: Low Tide @ 14:12 (UTC)

Avg Settings: 1, 2, 2, 35m

Line Spacing = 30m

GPS antenna height @ dock @ 14:13 = 5.38m

Block 23

Line Name	Time	Heading	Speed	Remarks
Leave Dock	14:20 (UTC)			leave dock @ 10:20 (EDT)
SVP18171-01	14:45			743536 (E) 4574521 (N) 26m
A1-743540	14:51	009	2.6 m/s	14:57 "SL" Buoy; 15:10 dogleg A1-005
A4-008	15:18	202	2.9 m/s	
A4-007	15:24	015	2.7 m/s	@ 201 "GS" Buoy
A1-743570	15:32	192	2.7 m/s	SV @ surface $\approx$ 1504 m/s
A2-743280	15:57	016	2.6 m/s	16:11 swell from Ferry
743250	16:17	185	2.8 m/s	
743220	16:36	009	2.5 m/s	
743190	16:57	185	2.8 m/s	17:07 wake from Ferry (water column)
SVP18171-02	17:15			743156 (E) 4574510 (N) 18m
A2-743160	17:22	020	2.9 m/s	17:29 Ferry wake; lots of bubbles;
				17:32 most bubbles to stbd.; 17:33 clear
743130	17:40	185	2.6 m/s	
743100	17:58	020	2.5 m/s	
End survey	18:13			
@ dock	18:32			@ dock 14:30 (EDT)

6/21/2018 (JD = 18172)

Thursday! Low Tide @ 15:06 (UTC)

Aeq. Settings 1, 2, 2, 35m

Line Spacing = 30m

GPS antenna height @ deck @ 14:04 = 5.54m

Block 23

Line Name	Time	Heading	Speed	Remarks
Leave Dock	14:20			leave dock @ 10:20 (EDT)
SVP18172_01	14:47			743025 (E) 4574430 (N) 17m
A2-743070	14:52	010	2.5 m/s	
743040	15:11	190	2.9 m/s	
743010	15:27	010	2.5 m/s	
742980	15:46	190	2.9 m/s	surface SV $\approx$ 1510 m/s
742950	16:03	010	2.6 m/s	16:17 heavy roll
742920	16:20	190	2.9 m/s	
SVP18172_02	16:35			742900 (E) 4574530 (N) 15m
A2-742890	16:43	010	2.7 m/s	
742860	16:58	190	2.9 m/s	
742830	17:14	010	2.6 m/s	17:24 kelp ??? Returns are very ambiguous
742800	17:31	190	2.9 m/s	
A3-742790	17:46	010	2.7 m/s	
742760	18:01	190	2.6 m/s	
742730	18:13	010	2.6 m/s	
* 742700	18:22	190	3.1 m/s	Abort line due to fog
End survey	18:25			Head back to dock
@ Dock	18:55			@ dock 14:55 (EDT)

(JD = 18198)

Tuesday: High Tides @ ~~17:44~~ 17:44 (UTC)

Acc Settings: 1, 2, 2, 35m

Line Spacing = 50 nm

GPS antenna height @ deck @ 14-23 = 5.83₂

Block 23

Line Name	Time	Heading	Speed	Remarks
Leave Dock	14:30			leave dock @ 10:30 (EDT)
SVP 18198-01	15:01			742490 (E) 4574700 (N) 8.5 m
A3-742700				
A3-742670	15:09	010	3.0 m/s	slight chop; winds SSW @ 12 knots
742700	15:17	190	3.0 m/s	Rerun line aborted on 18172
742640	15:24	010	2.5 m/s	
742610	15:33	190	2.8 m/s	
742580	15:42	010	2.3 m/s	
742550	15:54	190	2.2 m/s	
742520	16:03	010	3.0 m/s	
742490	16:10	190	2.9 m/s	
742460	16:18	010	3.0 m/s	
742430	16:25	190	2.9 m/s	
SVP 18198-02	16:31			742225 (E) 4574791 (N) 9.3 m
End survey	16:40			
@ Dock	17:10			@ dock, 13:10 (EDT)

7/18/2018 (JD = 18199)

Wednesday: High Tide @ 18:42 (UTC)

Acq. Settings: 1, 2, 2, 55m

Line Spacing = 30m

GPS antenna height @ dock @ 14:25
= 5.53 m

Block 23

Line Name	Time	Heading	Speed	Remarks
Leave Dock	14:30			leave dock @ 10:30 (EDT)
SVP18199-01	14:54			742460 (E) 4574670 (N)
AS-4574710	15:03	090	2.6 m/s	
4574740	15:09	270	3.0 m/s	
4574770	15:14	090	2.6 m/s	
4574800	15:21	270	3.2 m/s	
4574830	15:27	090	2.6 m/s	
4574860	15:33	270	3.3 m/s	
4574890	15:39	090	0.5 m/s	
4574920	15:45	270	3.2 m/s	
4574950	15:52	090	2.5 m/s	
4574980	15:58	270	3.1 m/s	
4575010	16:04	090	2.5 m/s	
4575040	16:10	270	3.2 m/s	
	16:20			Deck unit overheat; NO Tx; shutdown for a bit
SVP18199-02	16:25			200 m East of G3 buoy 741800 (E) 4574600 (N) approx.
End survey	16:30			Tx not responding (overheat)
@ dock	17:10			@ dock 13:10 (EDT)

7/19/2018 (JD = 18200)

Thursday: Low Tides @ 13:42 (UTC)
 Acq Setup: 1, 2, 3, 5 m
 Line spacing = 30 m

GPS height @ dock = 5.42 m
 @ 13:09 (UTC)

Block 2F

Line Name	Time	Heading	Speed	Remarks
Leave Dock	13:00			Leave dock @ 09:00 (EDT)
JVP18200-01	13:29			742390 (E) 4575442 (N) 6 m
A5-4575470	13:36	090	2.4 m/s	
4575500	13:42	270	3.0 m/s	
4575530	13:47	090	2.5 m/s	
4575560	13:53	270	2.9 m/s	
4575590	13:58	090	2.5 m/s	
4575620	14:04	270	3.1 m/s	
4575650	14:08	090	2.4 m/s	
4575680	14:13	270	3.1 m/s	
4575710	14:17	090	2.4 m/s	
JVP18200-02	14:39			743225 (E) 4578500 (N) 7 m
A6-4578500	14:42	090	2.9 m/s	
4578530	14:47	270	2.9 m/s	
4578560	14:53	090	2.8 m/s	14:56 boat wake
4578590	15:00	270	2.7 m/s	15:03 buoy stbd.
4578620	15:05	090	2.8 m/s	15:08 buoy stbd.
Returning to dock	15:14			returning to dock (11:15 EDT)
Leave dock	17:30			leave dock @ 13:30 (EDT)
JVP18200-03	17:37			744628 (E) 4578581 (N) 7 m
A6-4578650	17:43	270	2.6 m/s	
4578680	17:50	090	2.9 m/s	
4578710	17:56	270	2.8 m/s	
4578740	18:02	090	2.8 m/s	
4578770	18:09	270	2.8 m/s	
End survey	18:14			End survey 14:15 (EDT)
@ Dock	18:38			@ dock 14:38 (EDT)

6/5/2018 (JD = 18156)

Tuesday: Low Tide @ 13:38 (UTC)

acc. Settings: 1, 2, 2, ~~35~~ m
(switched 30m $\rightarrow$ 35m $\rightarrow$ 30m)

Block 24-25

Line Name	Time	Heading	Speed	Remarks
Leave Dock	09:30 (EDT)			depart @ 13:30 (UTC)
SVP18156-01	14:10 UTC			744250 (E) 4576155 (N) 11m
BSL 4576125	14:20	090	2.5 m/s	
4576100	14:54	270	2.4 m/s	
4576075	15:34	090	2.4 m/s	
4576050	16:12	270	2.4 m/s	
SVP18156-02	16:43			744315 (E) 4576059 (N) 11m
4576025	16:49	090	2.5 m/s	
4576000	17:28	270	2.5 m/s	
4575975	17:59	090	2.5 m/s	
4575950	18:32	270	2.5 m/s	
SVP18156-03	18:58			744326 (E) 4575946 (N) 11m

6/6/2018 (JD = 18157)

Wednesday: Low Tide @ 14:28 (UTC)

Acq. Settings: 1, 2, 2, 30 m

Block 24-25

Line Name	Time	Heading	Speed	Remarks
Leave dock	13:30 (UTC)			depart @ 09:30 (EDT)
JVP18157-01	13:55			744312 (E) 4575880 (N) 11m
B5-4575925	14:02	090	2.5 m/s	
4575900	14:32	270	2.7 m/s	
4575875	15:03	090	2.4 m/s	
4575850	15:21	270	2.5 m/s	
4575825	15:38	090	2.5 m/s	
JVP18157-02	15:54			746988 (E) 4575870 (N) 11m
4575800	16:31	270	2.6 m/s	
4575775	16:46	090	2.1 m/s	
4575750	17:00	270	2.8 m/s	17:07 boat wake
4575725	17:11	090	2.2 m/s	
4575700	17:26	270	2.8 m/s	
4575675	17:37	090	2.2 m/s	
4575650	17:47	270	2.9 m/s	
4575625	17:56	090	2.3 m/s	
4575600	18:06	270	3.0 m/s	
4575575	18:15	090	2.4 m/s	
4575550	18:23	270	2.9 m/s	
4575525	18:30	090	2.4 m/s	Buoy to starboard
4575500	18:37	270	3.0 m/s	18:42 Buoy to starboard
4575475	18:43	090	2.4 m/s	
4575450	18:47	270	2.8 m/s	
4575425	18:51	090	2.6 m/s	
4575400	18:55	270	2.9 m/s	
JVP18157-03	18:58			744625 (E) 4575423 (N) 14m
@ dock	19:30	(3:30 EDT)		

6/7/2018 (JD = 18158)

Thursday: Low Tide @ 15:16 (UTC)

Aeg Settings: 1, 2, 2, 35 m
Line Spacing = 30 m

Block 24-25

Line Name	Time	Heading	Speed	Remarks
Leave dock	13:50 (UTC)			depart 09:50 (EDT)
SVP18158-01	14:14			747694 (E) 4574819 (N) 13m
B6-747700	14:21	000	2.6 m/s	
747730	14:31	180	2.2 m/s	14:35 rocks
747760	14:39	000	2.4 m/s	SVS 1495 m/s
747820	14:49	180	2.5 m/s	Note: skipped 747790 for now
747850	14:58	000	2.9 m/s	
747880	15:07	180	2.6 m/s	
747910	15:16	000	2.9 m/s	
747940	15:24	180	2.5 m/s	
747970	15:33	000	2.9 m/s	
748000	15:41	180	2.5 m/s	
748030	15:50	000	2.9 m/s	
748060	15:58	180	2.5 m/s	
748090	16:06	000	2.9 m/s	
748120	16:13	180	2.6 m/s	
748150	16:21	000	2.9 m/s	
748180	16:28	180	2.6 m/s	
748210	16:35	000	3.1 m/s	
747790	16:46	180	2.7 m/s	
SVP18158-02	16:54			747555 (E) 4575295 (N)
B6-001	17:22	240	2.5 m/s	Dogleg: 747700 (E) 4575100 (N)
B6-002	17:29	045	2.5 m/s	747300 (E) 4574500 (N)
B6-003	17:36	240	2.5 m/s	747700 (E) 4575000 (N)
B6-004	17:43	020	2.5 m/s	747350 (E) 4574500 (N)
SVP18158-03	18:18			744464 (E) 4577386 (N) 12m
B6-744600	18:27	000	3.1 m/s	18:29 Boat wake
744570	18:38	180	2.9 m/s	18:41 Speed to 8 knots
* 744540	18:46	000	2.6 m/s	* Not sure if file corrupted
744510	19:04	180	2.7 m/s	
744480	19:14	000	2.9 m/s	
744450	19:25	180	2.8 m/s	
744540	19:37	000	2.8 m/s	Rerun 744540 (E)

5/01/2017

Thames Mouth East

226

5/4/2017

5/8/2017 (128)

Re-run all lines from 5/4 (see below) New Acquisition Settings: Gain = 1
PulseLength = 2
Power = 2
PingLength = 35

Thames Mouth East

Line Name	Time	Heading	Speed	Remarks
SVP 04	13:36	—	—	744302 E: 4576070 N
4576150	13:50	090	2.7 m/s	h = 5.40 m
4576175	14:25	270		Played with Gain, Pulse + Power
4576200		090		Stopped line @ 15:13 (Engine problems)
				746462 E: 4576235 N
Re-run above lines with New Acquisition Settings: (1, 2, 2, 35)				
SVP128_01	13:25	—	—	744464 E: 4576162 N
4576150	13:28	090	2.8 m/s	h = 5.95 m; Wind SW @ 10 knts; small chop
4576175	14:08	270	2.6	h = 5.8
4576200	14:53	090	3.0	
SVP128_02	15:21	—	—	750430 E: 4576382 N
4576225	15:33	270	2.0	
4576250	16:17	090	2.8	20L Buoy @ 16:21
4576275	16:45	270		Boat wake @ 001
SVP128_03	17:08	—	—	744684 E: 4576353 N
@ Dock	17:40	—	—	h = 5.49 m h = 5.49 m

5/17/2017 (JD = 137)

Wednesday: 12:52 (UTC) Low tide @ 13:26 (UTC) Dock: 746013 E; 4578059 N; h = 5.42 m

Thames Mouth East

Line Name	Time	Heading	Speed	Remarks
SVP137_01	13:21	—	—	744600 E; 4576300 N
4576300	13:30	090	2.6 m/s	13:39 Lobster pot
4576325	14:04	270	2.7 m/s	14:09 Boat wake; 14:11 Bubbles (boat wake); 14:33 BL Buoy
4576350	14:40	090	2.5 m/s	14:43 Boat wake bubbles; 14:44 BL Buoy
4576375	15:19	270	2.7 m/s	
SVP137_02	15:53			744528 E; 4576379 N
4576400	15:58	090	2.6 m/s	
4576425	16:35	270	2.7 m/s	17:04 OFF-line avoid traffic; 17:05 wake bubble
4576450	17:10	090	2.6 m/s	
SVP137_03	17:50	—	—	750056 E; 4576438 N
4576475	17:55	270	2.8 m/s	
4576500	18:30	090	2.6 m/s	
4576525	19:07	270	2.7 m/s	19:18 boat wake, parallel port side
	19:42			End survey day
	20:04			@ Dock 746013 E; 4578059 N; h = 6.04

Thursday: 12:39 (UTC) Low tide @ 14:16 (UTC); Dock 746013 E; 7578059 N; $h = 5.49\text{ m}$
Acquisition Settings = 1, 2, 2, 35 m

Line Name	Time	Heading	Speed	Remarks
Leave Dock	12:55			Leave dock
SVP138-01	13:11	—	—	744540 E : 4576526 N
4576550	13:14	090	2.9 m/s	
4576575	13:47	270	2.7 m/s	
4576600	14:23	090	2.9 m/s	
SVP138-02	14:57	—	—	11 m depth; 750170 E; 4576628 N
4576625	14:59	270	2.8 m/s	15:21 boat wake
4576650	15:33	090	3.0 m/s	
4576675	16:07	270	2.9 m/s	16:35 turbulent front (745200 E)
SVP138-03	16:42	—	—	744450 E : 4576700 ; 13 m depth
4576700	16:44	090	2.7 m/s	
4576725	17:22	270	3.0 m/s	17:49 turbulent front ; 745090 B Buoy
4576750	18:58	090	2.8 m/s	
SVP138-04	18:32	—	—	750068 E ; 4576744 N ; 12 m depth
4576775	18:35	270	2.9 m/s	18:56 small front(?)
	19:05			End Survey day
@ dock	19:30			@ Dock 746013 E ; : h=6.15

6/22/2017 (JD = 173)

Thursday: Low Tide @ 14:38 (EDT); Dock Tide height @ 12:33 (UTC) = 6.25m
Acquisition Settings = 1, 2, 2, 30m

Thames Mouth East

Line Name	Time	Heading	Speed	Remarks
Leave Dock	9:05 (EDT)			13:05 (UTC) depart
JVP173-01	13:18			744 481 E : 4576 945 N
4576 950	13:25	090	2.6 m/s	
4576 975	14:00	270	2.7 m/s	
4577000	14:38	090	2.8 m/s	14:52 VL Buoy ; 14:59 Boat wake
4577025	15:09	270	2.6 m/s	15:16 Buoy (3 m port)
4577050	15:47	090	3.4 m/s	
JVP173-02	16:15			750160 E : 4576 900 N
4577075	16:21	270		16:45 boat wake
Rerun lines	From 4/31 with new acquisition settings			
R_4576100	17:10	090	2.8 m/s	17:19 boat wake
R_4576125	17:43	270	2.6 m/s	
End survey	18:15			Return to dock
@ Dock	18:38			14:38 (EDT) @ dock

6/23/2017 (JD=174)

Friday: Low Tide @ 3:30 (EDT); Dock Tide height @ 13:08 (UTC) = 6.27m
 Acquisition Settings = 1, 2, 2, 30 m

Thames Mouth East

Line Name	Time	Heading	Speed	Remarks
Leave Dock	13:10			Depart dock @ 9:10 (EDT)
SVP174-01	13:23			744504 E: 4577057 N
L:4577100	13:28	090	2.7 m/s	
4577105	14:04	270	2.7 m/s	14:18 boat wake
4577150	14:40	090	2.8 m/s	
4577175	15:14	270	2.6 m/s	15:43 stopped line; cleared hydrophone 15:43 resume line (745800 E)
4577200	15:53	090	2.9 m/s	16:03 big rolls; 1614 boat wake
4577225	16:23	270	2.8 m/s	
SVP174-02	16:25			749860 E: 4577250 N
4577225	16:29	270	2.7 m/s	16:55 boat wake
End survey	17:05			13:05 (EDT) end survey
@ Dock	17:17			13:18 (EDT) @ dock h=5.70m

7/26/2017 (JD) = 207

Wednesday: High Tide @ 12:28 (EDT) Dock Tide Height @ 13:30 (LST) = 5.87 m

Acquisition settings = 1, 2, 2, 30m

Thames Mouth East

Line Name	Time	Heading	Speed	Remarks
Leave dock	15:00			Depart dock @ 15:00(EDT) delayed by Inverter problems
SVP207_01	15:13			74467 E : 4577340 N
L-4577250	15:17	090	2.8 m/s	
4577275	15:55	270	2.5 m/s	
4577300	16:32	090	2.6 m/s	
SVP207_02	17:10			750112 E : 4577296 N
4577325	17:12	270	2.8 m/s	
4577350	17:46	090	2.7 m/s	
4577375	18:21	270	2.5 m/s	Check for offline gap (sailboat)
SVP207_03	19:02			744566 E : 4577410 N
4577400	19:04	090	2.9 m/s	19:31 departure due to sailboats
4577425	19:36	270	2.6 m/s	19:32 abort line
SVP207_04	20:14			744535 E : 4577430 N
End Survey	20:15			
@ Dock	20:31			16:31 (EDT) @ dock

7/27/2017 (JD=202)

Thursday: High tide @ 1:22(EDT)

Acquisition Settings = 1, 2, 2, 30m

Thames Mouth East

Line Name	Time	Heading	Speed	Remarks
Leave dock	13:00			depart dock @ 09:00(EDT)
SVP208-01	13:24			744620E : 4577450N
L-4577450	13:27	090	2.8m/s	
4577475	14:01	270	2.5m/s	
4577500	14:36	090	2.7m/s	
4577525	15:12	270	2.0m/s	
SVP208-02	15:54			744590E : 4577550N
Run Tie Lines North to South				
T-745000	16:16	180	2.8m/s	
T-746000	16:35	000	2.8m/s	
T-747000	16:53	180	2.6m/s	
T-750000	17:19	000	2.6m/s	
T-749000	17:36	180	2.5m/s	
SVP208-03	17:54			748848E : 4575836N
T-748000	18:01	000	2.7m/s	
Perun 4577400				
R-4577400	18:20	090	2.5m/s	
End survey	18:36			
@ Dock	19:07			15:07(EDT) @ dock

7/28/2017 (JD=209)

Friday: High tide @ 2:16 (EDT)
 Acquisition settings: 1, 2, 2, 30 m

Thames Mouth East

Line Name	Time	Heading	Speed	Remarks
Leave Dock	16:00			depart dock @ 12:00 EDT
SVP209-01	16:18			747136 E : 4577835 N
B2-4578300	16:23	2.0 m/s		
4578275	16:31	2.0 m/s		
4578250	16:38	2.0 m/s		
4578225	16:46	2.0 m/s		
4578200	16:53	2.3 m/s		
4578175	16:59	2.1 m/s		
4578150	17:07	2.5 m/s		
4578125	17:12	2.3 m/s		
4578100	17:22	2.3 m/s		
4578075	17:29	2.2 m/s		
4578050	17:38	2.3 m/s		
4578025	17:47	2.4 m/s		
4578000	17:57	2.5 m/s		
4577975	18:06	2.4 m/s		
4577950	18:16	2.3 m/s		
4577925	18:26	2.4 m/s		
SVP209-02	18:41			746982 (E) : 4577730 (N)
End survey	18:42			
@ Dock	19:00			15:00 (EDT) @ dock

7/31/2017

(JD=212)

Monday: High Tides @ 17:06 (EDT)
 Acquisition Settings = 1, 2, 2, 30m

Thames Mouth East

Line Name	Time	Heading	Speed	Remarks
Leave Dock	16:00			departed @ 12:16 (EDT)
82-4577900	16:31	090	2.5 m/s	
SVP212-01	16:44			747797 (E): 4577824 (N)
4577825	16:49	270	2.6 m/s	
4577850	16:58	090	2.5 m/s	
4577825	17:07	270	2.5 m/s	
4577800	17:18	090	2.5 m/s	
4577775	17:28	270	2.5 m/s	
4577750	17:38	090	2.5 m/s	
4577725	17:48	270	2.6 m/s	
4577700	17:58	090	2.5 m/s	
4577675	18:09	270	2.5 m/s	
4577650	18:21	090	2.5 m/s	
4577625	18:33	270	2.4 m/s	
4577600	18:44	090	2.5 m/s	
4577575	18:56	270	2.5 m/s	
4577550	19:09	090	2.5 m/s	
SVP212-02	19:29			748010 (E): 4577561 (N)
T0 Lines				
T2-East	19:35	310	2.5 m/s	
T2-West	19:50	220	2.5 m/s	
End survey	20:06			
@ Dock	20:15			

Monday: High Tide @ 15:14 (EDT)
 Acquisition Settings: 1, 2, 2, 30m

8/14/2017 (Mon) (JD = 226)

8/15/2017 (Tue) (JD = 227)

Thames Mouth East

Line Name	Time	Heading	Speed	Remarks
Leave Dock	13:00			depart @ 09:00 (EDT)
Survey Area Block 3; west of Avery Point				
SVP 226-01	13:25			744531 (E): 4578323 (N)
B3-4578400	13:29	090	2.4 m/s	Rock @ eo!
4578375	13:35	090	2.1 m/s	
4578350	13:43	090	2.2 m/s	
4578325	13:51	090	2.3 m/s	
4578300	13:57	090	2.5 m/s	End line early; rocks ahead
4578275	14:06	090	2.3 m/s	
4578250	14:14	090	2.3 m/s	14:15 boat wake
4578225	14:22	270	2.3 m/s	14:25 Abort line; transducer blocked??
Hydrophone doesn't appear to be transmitting, Return to dock				
Arrive dock	14:50			@ dock 10:50 (EDT)
Remove hydrophone				
8/15 Leave Dock	14:00			depart @ 10:00 (EDT)
SVP 227-01	14:23			744555 (E): 4578207 (N)
B3-4578225	14:33	090	1.8 m/s	Rerun
4578200	14:40	270	2.0 m/s	
4578175	14:49	090	2.6 m/s	
4578150	14:56	270	2.0 m/s	
4578125	15:04	090	2.5 m/s	
4578100	15:11	270	2.1 m/s	
4578075	15:33	090	2.0 m/s	
4578050	15:43	270	2.0 m/s	North turn around island
4578025	15:52	090	2.5 m/s	South turn around island
4578000	16:03	270	2.0 m/s	North turn around island: Lost TX (16:10)
End Survey				
SVP 227-02	16:45			41° 18.828 (N) 72° 04.533 (W)
Arrive dock	17:05			@ dock 13:05 (EDT)

8/16/2017 (JD = 228)

Wednesday: Low Tide @ 11:16 (EDT)
 Acq. Settings: 1, 2, 2, 30m

Thames Mouth East

Line Name	Time	Heading	Speed	Remarks
Leave dock	11:30			Depart @ 07:30 (EDT)
SVP228-01	11:57			744552 (E) = 4577520 (N)
B3-4577550	12:01	090	2.5 m/s	
4577575	12:12	270	2.5 m/s	
4577600	12:23	090	2.4 m/s	
4577625	12:33	270	2.6 m/s	
4577650	12:43	090	2.7 m/s	
4577675	12:52	270	2.5 m/s	
4577700	13:05	090	2.6 m/s	
4577725	13:16	270	2.6 m/s	
4577750	13:27	090	2.5 m/s	
4577775	13:38	270	2.5 m/s	
4577800	13:49	090	2.6 m/s	
4577825	14:00	270	2.5 m/s	
4577850	14:12	090	2.4 m/s	
4577875	14:24	270	2.0 m/s	
SVP228-02	14:37			744552 (E) : 4577750 (N)
4577900	14:44	090	2.5 m/s	
4577925	14:59	270	2.3 m/s	
4577950	15:14	090	2.5 m/s	
4577975	15:23	270		
R-4578000	15:36	090		Return from 8/15
R-4578225	15:47	270		Return from 8/14
T1-744700	15:59	135	2.5 m/s	Tie Line
T2-745500	16:11	320	2.5 m/s	Tie Line
SVP228-03	16:24			744743 (E) : 4577999 (N)
End Survey				
Arrived dock	16:45			@ dock 12:45 (EDT)

8/17/2017 (JD = 229)

Thursday: Low tide @ 12:16 (EDT)

Thames Mouth East

Line Name	Time	Heading	Speed	Remarks
Leave dock	12:00			depart @ 08:00 (EDT)
SVP 229-01	12:30			749028(E) = 4576962(N)
B4_4577500	12:43	270	2.3 m/s	
4577525	12:56	090	2.4 m/s	
4577875	13:13	270	2.0 m/s	
4577850	13:19	090	2.1 m/s	
4577825	13:26	270	2.3 m/s	
4577800	13:34	090	2.0 m/s	
4577775	13:44	270	2.0 m/s	
4577750	13:52	090	2.1 m/s	
4577725	14:02	270	2.0 m/s	Eel grass @ col
4577700	14:12	090	2.2 m/s	
4577675	14:22	270	2.3 m/s	Eel grass @ col
4577650	14:33	090	2.2 m/s	Swimmers @ col
4577625	14:43	270	2.3 m/s	
4577600	14:54	090	2.3 m/s	
4577575	15:04	270	2.4 m/s	
4577550	15:16	090	2.3 m/s	748950(E) suspect eel grass/kelp
SVP 229-02	15:25			749687(E) 4577262(N)
T1_750000	15:48	360	2.3 m/s	Towlines (East)
T3_749300	15:58	180	2.9 m/s	(Central)
T2_748800	16:12	000	1.9 m/s	(West)
Arrive dock	16:50			@ dock 12:50 (EDT)

Appendix 3-2: USGS SEABOSS Field Logs – 2017 and 2018

2017-056-Field Activity

2018-018-Field Activity

Note: These log files contain data on the collection of samples for sediment analyses, infaunal analyses and images and videos used for epifaunal analyses

JD	Time UTC	targed site	Seaboss	Odyssey 7 clip #	depth (approx)	grab	Comments
Survey Times: UTC (ZD= -5 hrs)							
Personnel: R/V Connecticut = Dann Blackwood (USGS); Seth Ackerman (USGS); Ivar Babb (UCONN); Peter Auster (UCONN); Chris Conroy (UCONN); Roman Zajac (UNH); Kay Howard-Strobel (UCONN); Olivia Walton (UNH); Courtney Schneeberger (UNH); Tyler Fountain (UMaine) -- UCONN crew: Marco (Cptn); Frank; Bill; Rick; Erin							
Positions: UTM Zone 18N WGS84							
GPS Equipment: Dann's handheld Garmin GPSmap 76C GPS is set up (WGS84; WAAS-enabled GPS) with the antenna running out the wetlab stuffhole; along the port rail to about 2 meters from the stern. Antenna is aft port side as far back as the cable can reach -- ~ 2? meters from the stern/A-frame and ~3-4 meters from the deployment location. Logging the Garmin GPS to DataBridge CF card; and into ArcMap GPS via Belkin usb to serial adapter on SFMG MBP running Windows7 in Parallels9 - saving 1 (really 2) second point shp. The Garmin nav is also being fed to the rocket port hooked up to Dann's Dell Latitude E6400ATG laptop, running the Horita SCT-50 software (takes the GPS feed in, puts out the video overlay text - time date and lat/long) via serial cable to the Horita SCT-50 which then goes on the video. Ship's nav is Nobeltec getting DGPS from the antenna centered aft on the wheelhouse via feed in DryLab - logging this as a backup in Hyperterminal via Plugable usb to serial adapter on SFMG MBP running Windows7 in Parallels9. Ship's nav is also being fed to the Horita GPS3 (use Null modem serial cable) getting NMEA nav strings parsing the time only to provide timecode to the Odyssey7. The GeoStamp Audio is taking the Garmin nav in and NMEA strings are being endocded onto the audio-in of the Odyssey7.							
SEABOSS Sampling: SEABOSS sampler is a modified Van Veen sediment grab with one GoPro 4. Wired lights for the down video/camera. Keldan light for fwd vid/GoPro. Down video into the GPS3; GPS from the ship's nav (use Null modem serial cable) getting NMEA nav strings parsing the time only to provide timecode to the Odyssey7. Note ship's nav is for the antenna on the wheelhouse; not the A-frame or the depolyment point of the SEABOSS. Dann's Garmin GPS is set up (WGS84; WAAS-enabled GPS) with the antenna running out the wetlab stuffhole; along the port rail to about 2 meters from the stern. Antenna is ~3-4 meters from the deployment location. Roman has a point-an-shoot camera used to take topside photos of the VanVeen grab upon recovery of a sample with a sample id tag.							

Video: The primary video is a down-looking Simrad (version #????XXXXXX) SD video, fwd is the same camera model SD video, both run up the Falmat electromechanical cable on the Interocean winch. Video feeds come into the RemoteOceanSystems (ROS) control box (beige box). Down video out ROS to the Horita SCT-50 then split to the Odyssey7 (via the Horitia GPS3 -> Etekcitcity upsampler set to 720P60FPS) and the JVC SR-HD1250 BluRay recorder then to the Videonics Video Mixer then to the JVC monitor. Fwd video is out ROS to Horita SCT-50 then to the JVC SR-HD1250 BluRay recorder then to the Videonics Video Mixer and the JVC monitor. GoPro Hero4 is shooting 1080P60FPS video alongside the fwd looking Simrad camera (same orientation). GoPro camera and all the video overlay are set to UTC time and have calibration photos of time.is/utc and/or timecode (on Odyssey7) to determine time offset; if any. The GoPro was time synced regularly to UTC using Camera Studio software on Seth's MBP.

Photos: Nikon D300 Still camera w/ Photosea strobe. The Nikon is taking 12 Megapixel photos and is set to UTC time and have calibration photos of time.is/utc and/or timecode (on Odyssey7) to determine time offset; if any. The Nikon was synced regularly to UTC manually. Roman has a point-an-shoot camera used to take topside photos of the VanVeen grab upon recovery of a sample with a sample id tag.

Tuesday Nov 28 2017 JD 332 (all times are UTC)

332	0000						Start of survey --
332	110000-ish						leaving the dock at UCONN Avery Point
332	125453	sediment grab	SB64_1	clip 414			vob -
332							shell (slipper snails)
332	125820					y	voffb
332	131621	sediment grab	SB64_2	clip415			vob - no lights no lasers (my bad; I blew out the lights)
332							sandy; sm ripples
332	131915					n	vof - grab didnt trp - redeploying for a pic & grab
332	132330					y	just grab & 2 photos and gopro is still running -- muddy vob & voffb

332	134155	sediment grab	SB64_3	clip 416			vob - still no lights/lasers
332							sandy ripples (sandy mud?)
332	134350					y	voffb - muddy again
332			pause				pausing to switch out the lights.
332	142523	transect	SB64	clip 417			vob - lights and lasers fixed
332	142623						starting transect at .2 knots - ~ 20min to go 500m at this speed - from 12 to 7 meters
332	143530						line attached to gear?
332							burrows but otherwise pretty featureless bottom.
332							shell hash
332	144645						surface bioturbation; crab tracks - looks like its going to take a lot longer than 20 min
332	145430						ledge - getting rockier; cobbles; shells -
332	150000						slipper snail shells red algae
332	150120						kelp - islocated blades
332	150350						slippersnails - sponge - halicondria; more kelp
332	152340						fishing line in the video
332	152725					n	voffb
332	155820?		test				test shot with still camera and video (15-seconds)

332	160120	sediment grab	SB60_1	clip 419	~18m		vob
332							shells; shell fragments
332	160403					y	voffb
332	162452	sediment grab	SB60_2	clip 420	20m		vob - vid started 1 min ago
332	162640					y	voffb
332	164306	sediment grab	SB60_3	clip 421			vob
332							sandy-er; ripples; shells and shell hash in the troughs
332	164528					y	voffb
332	170300		pause				pause to change batteries in GoPro; Strobe; Keldan light. Also downloading the GoPro vids
332	170825		test				calibration shot on GoPro - was 3 seconds off. Reset time to UTC; switched GoPro to video + photo every 30 sec
332	180201						vob
332	180259						voffb - no strobe; stopping to change Nikon battery
332	182000-ish		test				test strobe - calibration shot with time.is/utc
332	184110	transect	SB60				vob
332	184235						starting transect at .4-.7 knots

332	184600						fish in the down video; maybe a sea robin
332	184900						sand ripples
332	185100						crab
332	190110						ghost lobster pot
332	190750						log?
332	191020						sponge; big sponge; boulders
332	191100						dropping back down over the ledge.
332	191400					n	voffb
332	190312	transect	SB60_B				vob - back down at SB60 to transect over the ledge boulder area - fwd camera is out.
332							starting transect back ~50m
332							very boulder-y w/ sponges
332	193843						verticle sponges - Haliclona sponge
332	193920						ledge - a lot of it
332	194027						beer can
332	194105						trap line

332	194148						back in to sandy/muddy sediment
332	194220					n	voffb
332	201020	sediment grab	SB61_1		40m		vob
332							shell hash; micro ripples; with shells in the troughs
332	201133						scallop opening its shell
332	201350					y	voffb
332	203351	sediment grab	SB61_2		65m		vob
332							oak leaf floated by. cobble; gravel; sea star; sm boulder
332	203945					n	voffb - too rocky to grab
332	205639	sediment grab	SB61_3		80m		vob
332							ledge; coral; sponge
332	210530					n	voffb - ledge no grab possible
332	212729	transect	SB61	clip 430	70m		vob
332							more oak leaves; shell hash and gravel
332	213030						starting on transect

332	213200						dense shell bed
332	213340						ripples; less shell; some topography
332	213513						lots of shell hash
332	213645						few sand dollars
332	213715						nice bedforms in the fwd video
332	214045						squid a few econds ago; spider crab; neat sand ripple pattern
332	214820						not as defined sand ripples; sand dollars; spider crabs
332	215957						some larger cobbles
332	220233	sediment grab	SB61_4			y	voffb - grab at end of transect. calling the grab SB61_4
332	222251	sediment grab	SB61_5	clip 430			vob
332							some sand ripples; spider crabs; sand dollars
332	222645					y	voffb - grab in the hummocky sediment
332	225557						changed batteries in GoPro; Keldan light and Garmin GPS
332	230310		NB42	clip 431			vob - not quite at the start of the transect so recording on the way over there
332							lots of shells; like a lot a lot

332	230534					n	voffb - there is a wayward tug out there that is having trouble getting around us; recovering to move to the south.
332	231000						scratch that; done for the evening. will need to come back to NB42 another time.
332	233000						dinner - salmon with green beans and potatoes; awesome fudgie browning/cheesecake dessert
	240000						copied all data to the Master HD - Lacie 5TB (and gave Chris a copy too)
Wednesday Nov 29 2017 JD 333 (all times are UTC)							
333	110000						breakfast - spinach; mushroom; tomato; cheese omelet and whole wheat pancakes
333							changed batteries in GoPro; Keldan light; Nikon D300 and Garmin GPS --- formatted microSD in GoPro; Odyssey7 SSD
333	123950	sediment grab	SB62_1		139f		vob
333	124244					y	voffb - grab
333	130555	sediment grab	SB62_2				vob
333							rockier - messed up the BR record; started a few seconds behind the Ody
333							boulders and cobble
333	131028					y	voffb - grab in the pebbly area - only half the van veen - no bio data; just sed analyses
333			pause				hooked up the ships nav to SMFG laptop via hyperterminal
333	133810	sediment grab	SB62_3				vob

333							encrusting astrangia(?); boulders cobbles; gravel
333	134335					n	voffb
333	141500	transect	SB62		230f		vob
							starting transect - rocky; bouldery; skate about 30sec into video
333							we're moving pretty fast but we think well get good still photos
333	142504					n	voffb - no grab too rocky and sampler tripped in rough seas
333	152340		test				calibration photo with Nikon D300
333	154806	sediment grab	SB57_3				hummocky sand
333	155008					y	voffb - grab
333	161550	sediment grab	SB57_2	clip 436			vob
333							micro ripples on mega-ripples
333	161710				155f	y	voffb - grab
333	165406	transect + grab	SB57		122f		vob
333							starting transect with current (no DP) gravelly sediment; shells and shell hash
333							moving along at 1.5-2 knots

333	165850						hit the sand waves; literally. then quickly transitions back to gravelly sediment
333	170045-ish						patch of sand among the gravelly sediment - caught in photo?
333	170100						no strobe - battery?
333	170222					y	voffb - grab
333	182530	sediment grab	SB51_1		134f		vob
333							shell hash
333	182744					y	voffb - grab - late stop on the recording video (got another 20+ seconds)
333	184306	sediment grab	SB51_2		160f		vob
333							shells and shell hash; similar to previous site
333	184515					y	voffb - grab
333	190428	transect	SB51	clip 441			vob
333							cobbles; shells
333	190535						boulder with algae
333	190930						line on the bottom
333							gravel; lots and lots of gravel and some cobble and shells

333	192228						fish; maybe in the photo?
333	193050						end of the transect
333	193122					y	voffb - grab
333	201243	transect + grab	NB30	clip 442	126f		vob - we are way off the line. but we'll record anyway since the sampler is in.
333							gravelly sediment; sand ripples
333							in a low backscatter feature for most of this transect
333	201740						transitioned from sand ripples into shell hash on sand
333							going to try for a grab then continue to drift
333	202322					n	GRAB - didn't trip; trying again
333	202410					y	GRAB - good one (we think)
333	202608						at transition to higher backscatter
333							looks a little shellier (maybe)
333	202744						a bit more gravelly here
333	202822						voffb - grab mid transect back at 202410
333	205830		test	clip 443			board shot under sampler; photo and video clip on odyssey7

333	210408	sediment grab	SB50_2	clip 444			vob (first photo might be before the video started)
333							gravelly sedimetn with shells and shell hash
333	210750					y	grab
333	210810						voffb - grab about 20 seconds ago
333	212428	sediment grab	SB50_3	clip 445			vob - will take grab soon before we drift out of the box
333	212458					y	grab and will continue to drift
333	212710						voffb - grab earlier in drift
333	214740	transect + grab	SB50	clip 446			vob - first photo may have been before video started
333							shell hash; gravelly; scallops
333							spider crab scallop; coming down over the top of ridge (sand dune ~ 5m relief)
333	220418		SB50_1			y	voffb - grab seems like its spewing some though
333	221448	sediment grab	SB50_4				vob
333	221530					y	voffb - grab - again spewing a bit
333	224200	transect	NB32		32m		vob
333							shell hash; gravelly; spider crab;

333	224338						trawl wire
333							heading uphill according to the bathy
333	224600-ish						isolated boulders
333	225102						boulders (as seen on bathy map)
333	225132					n	voffb - no grab -- ended by boulder field
333							
Thursday Nov 30 2017 JD 334 (all times are UTC)							
334	115000						breakfast - waffles w/ strawberry topping & scrambled eggs
334	121500						changed Nikon; GoPro and Garmin GPS batteries; reformatted Odyssey SSD & GoPro microSD card
334	121600						started new logging file on DataBridge; ArcMap and Hyperterminal
334	123629						board under camera. calibration shot too
334	124700	transect	NB38	clip 449	34m		vob - first photo mayhave been before video recording
334							gravel and shells some cobble
334	124840						small boulders in the fwd; no down. astrangia coral - "breadcrumb sponge" razor clams shells
334	125700				25m		transition into finer sediments; hummocky sand ripples with small shell hash in the troughs

334	125905						oak leaf floating by
334	130000						heading laterally across the face of a sand wave; sampler tipped a bit
334							finer sediment hummocky seabed; less shell hash
334	130610				18m		
334	130955					n	voffb - no sample (tripped earlier- will reset and drop again nearby)
334	131504	sediment grab	NB38_1	clip450			vob
334	131535				17m	y	voffb - grab
334	132921?		test	clip 451			board under camera. calibration shot (double check time against Odyssey) + vid on Odyssey
334	134735	sediment grab	SB56_1	clip 452	70m		vob
334							gravel; cobble; shells; slippernails??
334	134949					y	voffb - grab (video went a little longer)
334	140429	sediment grab	SB56_3	clip 453	74m		vob
334							gravel; shell hash
334	140551					y	voffb - grab
							changed out camera and strobe batteries; downloaded GoPro and Nikon data

334	142115	transect + grab	SB56	clip 454	81m		vob
334							gravel and shells some cobble
334	1424000-ish						slippersnails
334	142540-ish						crab sprinter ran across the video
334	142557						boulder giant one with astrangia
334	142715						LOBSTER!!! - far left side of down video
334	142909						coming up the slope fast
334	142946						giant boulders!! - boulder field
334	143053						ledge with boulders on it
334	143258						fishing gear? bricks?
334	143321						line and trap?
334	143353				~60m		pile of bricks
334	143847						hit the ledge; GoPro will have great oblique vid if its hasn't been knocked off the sampler.
334	144055				53m		sponges
334	144127						pile of traps

334	144200						transition into fine sediments
334	144247						then quickly back into cobble and boulders again
334	144401-ish						we're following a trap line
334	144659						bottle
334	144751						old trap
334	144907	sediment grab	SB56_2			y-ish	vob - trying for a grab in an open spot w/o boulders/cobble, hopefully got some gravel -- UPDATE: rock stuck in jaw; got a tiny amount of leftover sediment + a rock in each whirlpak.
334	150005		test				board under camera. calibration shot too -- going to try for another sample nearby at original sed2-sb56 location
334	150753	sediment grab	SB56_2b	clip 455			vob - we're about 150 east of the target site
334							shells cobble around boulders
334	150953					n	voffb no grab
334	192531	sediment grab	B56_2actu	clip 456	54m		vob - trying again at target site sed2-sb56
334							more boulders and cobble.
							lobster; also lobster (maybe more than 1 b/c we saw it in the fwd too)
334	152725					n	voffb no grab
334	160515		test				board under camera. calibration shot too

334							
334	161103	transect	NB34	clip 457	48m		vob
334	161249						starting transect - lots of rocks
334	161500						boulders; welk shell; shells shell hash
334	161651						shark egg case
334	162513				54m		few isolated blouders; lots of gravel and shell hash
334	162559						crab
334							getting a little deeper than we'll be heading up a ridge; then back down again
334	162711						boulders and cobble all covered with astrangia
334	163121						back into gravel and shells
334	163242				58m		scallop
334	163527					y	void grab - spewing a bit - only about 1/2 the grab filled so took smaller than usual subsamples for the lab (hopefully enough)
334	170000						lunch - Cheeseburgers with lettuce tomato. waffle fries. baked beans. chicken sausage
334	172557		SB53_1	clip 458			vob
334							gravelly sediment and shell hash; we are on the slop of a giant (10m) sandwave

334	172737					y	voffb - grab
334	173845						board shot
334	174441	sediment grab	SB53_1	clip 459	12m		vob -- deploying with Ivar's 360 camera as a test
334							nice sand with ripples and shell hash in the troughs
334	174643					y	voffb - grab - great one - filled the sampler
334	175351						board shot
334	180153	transect + grab	SB53	clip 460	24m		vob
334							hummocky sand ripples with a little bit of shell hash
334	180639						coming up on the sandwave
334	180815						heading back down the other side of the sandwave
334	181359						a lot of shell hash and coarse sediment/gravel collected in a trough we just passed
334	181811				33m		lots of mussel shells and live mussels (?)
334	182100-ish						transition to clams instead of mussels
334	182435						slippersnails and clams
334	182807		SB53_2			y	voffb - grab

334	190049						board shot
	190545						oops: never shut off the video (Odyssey & Dri) so it was up to an hour of recording time. will have to split those files at 18:28:07 later.
334	190551	transect + grab	NB28	clip 461			vob
334	190621						beginning transect heading northnorthwest
334							spisula? (surf clam); moon snail?
334	191919						gravelly sediment ? shell hash
334	193117					y	voffb - grab
334							change batteries in Nikon; GoPro and Keldan light
334	194500-ish						Outreach -- Google Hangout with Ms Renyolds 4th-grade class at Mullen-Hall (Falmouth; MA)
334	200931						board under camera. calibration shot too
334	201555	transect + grab	SB46	clip 462			vob
334	201630						starting on transect; gravel and shell hash
334							Roman enjoying the leftover chips (aka warm mess) chop on the outside soggy on this inside; its an interesting consistancy" - Roman "They were amazing when they were freshly cooked" -Chris "I like the spice to it... cajun notes." -
334	202750						bulbus shell? what is it -- maybe a moon snail partly out

334	202845						another one - top left corner of down video
334	203327						another - Chris caught a pic of this one.
334	203700-ish						getting close to the end of the transect - transitioned into sand with ripples
334	204001		SB46_1			y	voffb
334	205809	sediment grab	SB46_3	clip 463	40m		vob - too deep to stand
334							gravel shell hash
334	205953					y	voffb
334	211717	sediment grab	SB46_2	clip 464	40m		vob
334							slippersnails bed abutted by gravel/pebbles
334	211821						squid
334	211919					y	voffb - grab
334	214915	sediment grab	SB43_1	clip 465	38m		vob
334							sandy with some ripples and slippersnails in the troughs
334	215049					y	voffb - grab
334	221509	transect + grab	SB43	clip 466	38m		vob - cptn says strong current

334							gravelly byrozoa
334	221651						starting transect with current and motor (no DP)
334	221757						ray (or skate)
334	22227						scallop
334	222755						graveely sediment
334	223250						transition to sandy sediments
334	223421						egg casing (skate or shark?)
334	223829						approaching transition to lower backscatter at end of transect - will take a sample there
334	224007		SB43_3			y	voffb - grab
334	225921	sediment grab	SB43_2	clip 467	43m		vob
334							sand ripples; shell hash
334	225951						sand with lost of shell hash but ripples disappeared
334	230105					y	voffb - grab
334							dinner - pasta with shrimp and scallops

Friday Dec 1 2017 JD 335 (all times are UTC)

335	111000		test				reset GoPro time to GPS - calibration photo with GoPro - spot on to GPS time
335	111500						changed Nikon; GoPro and Garmin GPS batteries; reformatted Odyssey SSD & GoPro microSD card
335	112000						started new logging file on DataBridge; ArcMap and Hyperterminal
335	113000						breakfast - veggie omelets; corned beef hash; bagels w/ cream cheese and smoked salmon
335	115503						board shot
335	115511						board under camera. calibration shot too (time on this one is 11:55:11)
335	120421	sediment grab	SB35_1	clip 468			vob - we might not have good nav in the Arcmap log, will need to fill from DataBridge or Ship nav if Garmin GPS was totally out during this deployment.
335							hit the bottom; terrible viz; murky
							something is wrong with the ArcMap GPS. Not updating location.
335	121113					y	voffb - grab
335	121807						board under camera. calibration shot too
							restarting ArcMap and new ArcMap GPS log file (JD335c)
335	122455	sediment grab	SB35_2	clip 469			vob - better viz
335	122620						gps in arcmap freaked out.
335	122751						seaboss up so dann can check out the gps antenna

335	122837					y	voffb - grab
335	123749-ish						board shot
335	124225	transect + grab	SB35	clip 470	38f		vob
335							boulders ledge - astrangia
335	124500-ish						no more rock; looks like muddy sand
335	124611						rocks again
335							boulders
335	124735						graveely sediment
335	124827						boulder
335	124957						cloth of some sort on the seabed
335	125115						looks like muddy sand with some boulders
335	125159						transition in backscatter from high to low backscatter;
335	125651						snail trails in the sediment
335	130143						transition into sand onto a sand dune
335	130315						Marco need to come to a stop and manuner around a pot; chaning course slightly on this transect.

335	130449						skate
335							some shell hash now in the small troughs of the
335	130651						heading towards target SB35_3 off the transect track; will take the sample somewhere between now and then.
335	130741		SB35_3			y	voffb - grab
	133000-sih						I think the bekin usb to serial adapter (logging the nav into ArcMap on Port3) is flaking out and that's why the nav keeps dropping out on there. Borrowing another usb to serial adapter from Kay HS; hooked it up now using port5 to log nav into ArcMap. Logging to same nav file (JD355d - may
335	135408		SB39_1	clip 471	140f		vob
335							looks sand with some shell hash; snails; slippersnail
335	135540					y	voffb - grab - coarse sand
335	141709??	transect + grab	SB39	clip 472			vob - check the start time on this one
335							shells sand
335							something is wrong with the lasers, we're only seeing one and its way up in the video frame. will fix this when the sampler is recovered
335	142545-ish						lone boulder scoured out around it. something was in it; Dann and Tyler said maybe a lobster. Chris got a pic of it.
335	142640						ab
335	142652						sharp transistion to sand with lots of shells

335	142700						strange seabed maybe clay; or something with fine laminate over it ??? -- relook at this spot in video/photos
335	142720						sand ridge
335							back to shells and sand
335							gravelly sand
335	142930						gravel and cobble sized sediment on sand
335	143044						crab city
335	143100						hake?
335	143200						razor clams -- sand stone?? slate looking things
335	143234						back to shell hash and sand
335							hake?
335	143436						more of that flat sandstone(?) covered by fine sediment.
335							boulder with scour
335							more of that layer clay(?)
335	143642						bag of some sort with a weight on it.(?)
335							sand

335	143948						shells gravel; clay layer
335	144028		SB39_2			y	voffb - grab - maybe got some of that clay - partial sample but eco group not sieving it.
335	145344	sediment grab	SB39_2b	clip 473			vob (Odyssey vid started a few seconds ahead of BD)
335							we're down in gravelly sediment
335	145444					y	voffb - grab
335	151302	sediment grab	SB39_3	clip 474			vob - first photo may have been before video started
335							gravelly sediment with shells and shell hash; maybe more of those harder clay blocks
335							irregular shaped flat stone might be more of that hard clay
335	151638					y	voffb - grab
	153500						battery change on Nikon; GoPro and Keldan light
335	154433						downloaded photos from Nikon & GoPro
							Dann took a Nikon calibration shot
335	160720						board under camera. calibration shot too
335	162406	sediment grab	SB49_2	clip 475	28m		vob
335							shells and sand

335	162650					y	voffb - grab
335	163000		pause				heading into the bay near Nianic Bay to exchange Ivar for Peter
335	164500						successful prisoner exchange; also took onboard some eggs and milk.
335	171424	sediment grab	SB54_2	clip 476	10m		vob - first photo before video started - Odyssey started a few seconds ahead of BD
335	171654					y	voffb - grab
335	172944	sediment grab	SB54_3	clip 477	10m		vob (started videos 20 seconds earlier)
335							sandy with shells
335	173148					y	voffb
335	175344	transect + grab	SB54	clip 478	10m		vob
335							sand with some sm ripples
335							kelp
335							lasers are funky; turned them down then cranked them up and they work
335	175648						starting on the transect
335							sponge (cliona)
335	175740						boulder with sponge on it

335							slippersnails on sandy seabed
335	175940						vertical cliona sponge
335	180012						sponge in a small depression
335							occasional boulder in a depression
335							sponges some larger ones has sediment scoured out around it
335							boulder
335	180312						wine bottle
335	189454						sponge with welk in the scour next to it
335	181930						occasional sponge and some scattered shell fragments here and there.
335	182430						nearing a transition into lower backscatter and deepen slowly
335	182432						suddenly visibility got a little worse; nearing the finer sediment I guess
335							oak leaves. getting deeper
335	182828		SB54_1		12m	y	voffb - grab
335	185822	transect + grab	NB31	clip 479	6m		vob
335							symmetrical sand ripples

335	190850						fine sand with some burrows
335	191630						lots of fierce crabs ready to fight the SEABOSS
335	191850						welk egg case
335	192504					y	voffb - grab
335	195640						board under camera. calibration shot too at 19:56:40
335	200100	sediment grab	SB49_3	clip 480	30m		vob
335							gravelly sediment
335							lasers are not working right again. seems like something is messed up with those at depth
335	200356					y	voffb - grab
335	202402	transect + grab	SB49	clip 481			vob - first photo before video started
335							starting on the transect
335	202720						lasers went out as soon as we came to the bottom. tried to cycle off the lights/laser/fwd control box for a second. lost fwd camera for a couple seconds; unfortunately it didn't fix the
335	202740-ish						sea robin
335							sandy with shells
335							coming over the crest of a sandwave

335	203640				28m		boulder; then back in to sand
335							shell has and gravelly sediment
335							boulders
335	204630						sand with interesting ripples; shell hash in the troughs; some sponge
335	204710						giant boulders and a fishing line
335	205300						end of the transect put us at a boulder field; we'll shift over a bit to get a grab in the sand
335							coming up over a sand ridge now
335	205542		SB49_1		17m	y	voffb - grab
335	212000						fixing the lasers. removed the Z (zoom) lasers (tied them on to a bar); and installed spare green and red battery powered lasers for scale.
335	212936						board shot with calebration photo (at time 21:29:36)
335	213628	transect + grab	NB26	clip 482	34m		vob
335							shells
335	213800						giant crab carrying a surf clam
335							moon snails
335							gravelly sediment with shells and shell hash

335	214620						moving bivalve (current?)
335	214946						clams gone wild
335	215340						some rippled sand
335	215740						fish ??
335	220034					y	voffb - grab
335	223252	transect	SB44	clip 483	22m		vob - were drifting backwards in the current
335							rippled sand
335	223820						rocky ledge and boulders
335	224300						too risky trying backwards going up this ledge, trying a touch and go approach. we'll fly high and drop down periodically to take a peek/photo
335							diadumanea (?) (anenames)
335							crashing in to lots of boulders and ledge
335	224600				14m		cresting th top of the feature
335	224616						LOBSTER!!
335	224900						off the big bathy high back into gravelly sediment
335	225110						more boulders

335	225200						back into sand ripples
335	225246						more boulders
335	225300						back to rippled sand
335	225542						flounder
335	230040					n	voffb - no grab - sampler tripped back in the boulder ledge area
Saturday Dec 2 2017 JD 336 (all times are UTC)							
336	111500						changed Nikon, GoPro and Garmin CR-2 batteries; reformatted Odyssey SSD & GoPro microSD card - new CF card in the Nikon
336							GPS issues; ArcMap is not playing nicely with tPS feeds; whenever ArcMap starts up it freezes the other GPS displays (Horita SCT; GPS3 - will check if it does the DataBridge too). Tried a bunch of things; including another usb serial from Kay; rerouting all the serial cables to put the splitter to the ArcMap computer at the end. Eventually we put the original Belkin adapter and black short cable (that I thought was bad) on and it all seems to work again. Not sure why; We will
336	124500						started new logging file on DataBridge; ArcMap and Hyperterminal
336	125640						board
336	130316	sediment grab	SB67_2	clip 484	12m		vob
336							sand ripples; shell hash in the troughs

336	130550					y	voffb - grab
336							
336	131146						board shot; calibration photo
336	131926	sediment grab	SB67_1	clip 485	11m		vob (started videos about 20 sec too early)
336							sandy hummocky bottom
336	132120					y	voffb
336	132809						board shot with calebration photo (at time 13:28:09)
336	133650	transect + grab	SB67	clip 486	30f		vob
336	133922						entering the rocky area; big boulders
336	134056						big big boulder; fish
336	134200						fishing line
336	134300						blackfish
336							headin through this boulder field is going to be great footage on the fwd looking GoPro
336	134710						into trench between the 2 rocky ridges. sand ripples
336	134746						fising line; sand is less rippled.

336	134900						back to the rocks and boulders
336							there have been lots more fish than any other site so far
336	135006						fishing line
336	135256						coming down off the ridge; a few isolated boulders and cobble;
336							into sand ripples with shell hash in the trough
336	135250						back into some more large isolated boulders
336	135930		SB67_3			y	voffb - grab
336	142740						board shot
336	143006	sediment grab	NB47	clip 487	14.5m		vob
336							sand with small ripples
336							flappy thing next to tube in lower right corner of the vid. -- "All kinds of mucousy goodness" - Roman
336	143158					y	voffb - grab
336	150256						board shot with calibration photo (at time 15:02:56)
336	150710	transect + grab	NB54	clip 488	56m		vob
336							sand ripples on sand waves

336	151014						brick;
336							fwd-looking camera shows some neat sand ripples
336							scallop and sanddollars
336	151520						heading up a big sand wave.
336	151842						shark egg case
336							sand ripples in the fwd camera are awesome
336	151940-ish						fish (scup?)
336	152052						patch of gravel in the trough in the sand ripple
336	152204						another pile of gravel in the trough of a small sand wave
336	152254						more gravel scattered about not necessarily in the troughs; + shell hash
336	152630						lost anchor
336	152736		NB54			y	voffb - grab
336							downloaded photos from Nikon & GoPro (took a GoPro test photos - was ~3 sec off; but reset the time to UTC anyway)
336							changed batteries on GoPro; Nikon and Keldan Light
336	160610						board pic with calibration shot

336	160940	transect + grab	NB59	clip 489	7m		vob - this might be the shallowest site of the survey
336							cobble and grave macro algae; kelp
336							small boulders
336	161408						getting into sand or gravelly sand with shell hash
336							some small boulders and cobble
336							third laser (floating one) has come back alive.
336	161830						took a short video clip on my iphone to send to Ezra's class. Chris; Peter and Tyler commenting on the biota.
336	162022				12m		transition to a field of slipper snails (?) although they don't appear to be stacking so may they are periwinkles or another snail.
336	162442						pavement of snails continues.
336	162914						trap in the fwd camera
336	163140						out of the massive shell beds into small rippled sand
336	163444					y	voffb - grab
336							awesome transect -- lots to see. were going to repeat the first 10 min of the line with Ivar's 360 camera
336	165247						board shot; calibration photo
336	165700	transect + grab	NB59_2	clip 490	12m		vob

336							same as before - came down on gravel, cobble and small boulders on sandy with a little shell hash; some cobble have that purple algae that Adirenne calls "Bubblegum Algae" in
336	165900						beginning transect
336	170756						getting to gravel mixed with those shells
336	170834					y	voffb - grab of those shells
336	184500						lunch - Taco - hard and soft tacos with ground beef; pulled chicken or pork & all the toppings + chocolate chip cookies.
336	180950	sediment grab					board pic with calibration shot
336	181328		SB73_1	clip 491	11.5m		vob
336							sand with pockets of gravel; cobble and small boulders with bryozoans; kelp
336	181850					y	voffb - grab - hopefully in the sand
336	183654	sediment grab	SB73_2	clip 492	13m		vob
336							2 fish - looks like they are playing with the green laser
336							another fish seemingly attracted to the green laser
336							sand with some isolated pockets of gravel and pebbles
336	183914					y	voffb - grab - lone boulder can be seen as we raise the sampler.
336	185900						The 360 camera is back on the sampler

336	190000						jelly on the way down - going to be cool in the 360 camera and GoPro (not recording in the other video)
336	190014	transect + grab	SB73	clip 493	16m		vob
336							small sandwaves with rippled sand on the crests (oriented 90 deg to the sandwaves) and cerpidula/slippersnails and shell hash in the troughs
336	190400						boulders with fish and sponges
336							back into sand with some occational large boulders
336	191200						fish in the fwd camera
336	191234						at the next bouldery ridge. shallowing up a bit
336	191310						fishing line in the rocks
336	191500						passing bouy; didn't see a line in the video
336	191544						fish
336	191618				11m		pile of tangled line
336	191716						dropped off the ridge and into small sandwaves with shell hash in the troughs
336	192130						sandwaves now have gravel in the troughs
336	192430						lobster pot and line
336							we're following the line; but then drifted north of it; seems like we past it safely

336							lots of litte fish going after the laser
336	192720						off the last boulder ridge on this track; few isolated boulders still present; otherwise hummocky rippled sand
							we were all set to get a sample then came on a bunch of boulders (not really seen in the NOAA bathy). drifting a little further to get a sample in sand
336	193152		SB73_3		14m	y	voffb - grab in the sand
	201500						downloaded photos from Nikon & GoPro. the last 6 minutes of photos on transect SB73 were very dark (some almost black)
336	202000						changed batteries on GoPro; Nikon and Keldan Light; switched out the strobe
336	203906	transect + grab	NB65	clip 494**	19m		vob
336							**odyssey froze on record. will have to replay the BD and record back onto the odyssey
			***clip 498**				UPDATE: I played it back and generated clip 498 but there's no good LTC timecode nor GeoStamp Audio in this version
336							Back in the office I can fix this properly by playing back the GPS strings from the DataBridge(?) into the GeoStamp Audio and the Horita GPS3 at the same time as playing back the video from the Blu-Ray and recording into the Oddyssey7
336	204022						4-armed astarius (starfish)
336							more starfish; a number of them
336							small boulders with algae; cobble and gravelly sediment some shell hash
336	204400-ish						we are scooting a little further to the west to get more on top of this bathy high

336	204900						we bumped sideways into a giant boulder
336	204930						large kelp on cobble/gravelly sediment
336	205120						a lot fo fish among the boulders
336	205348						didendum (white encrusting sponge)
336	205538						big kelp
336	505740						out of the boulder area; into gravelly sediments with lots of mussel shells
336	205800						now sand with mussel shells
336	210054					y	grab - mid transect - continuing on for the next 100+ m to the end of the transect
336	210240						sharp transition from sand to gravelly sediment
336	210300						big boulder - scoured around the edges (seen well in the fwd camera)
336	210602						lobster line (fwd and bottom)
336	210628						into another bathy high - bouldery area surrounded by mussel shells and shell hash ; cliona sponge
336	210900						lots of clinoa sponge
336	211000						blood star (henricia) on sponge on boulder
336	211148					y	voffb - grab - coarse sand with mussel shells

336	213044	sediment grab	SB72_3	clip 495	15m		vob
336							gravelly sediment with some shell -- this is going to add to the rock collection
336	213236					y	voffb - grab
336	213900						board pic with calibration shot
336	215106	sediment grab	SB72_1	clip 496	10m		vob
336							rippled sand with cerpidula
336	215356					y	voffb - grab
336							we grabbed a ghost wire on the bottom. ended up not being attached to anything luckily; but it caused quite a stir. sample was good too.
336	221740	transect + grab	SB72	clip 497	10m		vob
336							rippled sand with some shells and sand dollars
336	222100						we are moving along the trough of a small sand wave that is on the margin of this shoal
							flat fish (Dann and I said flounder - Chris says ghost white flounder but not behaivng like a flounder -- the photo will tell
336							another piece of ghost line
336	222400						more rusty cable
336	222440						we are following along this rusty cable.

336	222550						more cable - on Dunn suggestion hooked at the backscatter and there is totally a linear feature between 2 pretty defined features about 25 meters long each
336	223250						approaching a transition to finer sediments (according to the backscatter) the margin of the shoal on the southern side (although on top of the shoal didn't seem much different in the video)
336	223515						floated over an isolated something (?) linear bar?? manmade??
336	224000						transition to higher backscatter but again we see little to no change in the video.
336							kelp
336	224128						squid (maybe 6 or so) in the fwd camera
336							There are a lot of these long grass-like attached strands (10-40 cm long). Tyler says maybe some kind of eelgrass; Peter said earlier that something like those could be worm tubes. Courtney says "I don't know"; I say "I don't know"; " Roman says they are "some sort of weird plant" --UPDATE: some came up in the grab - it is dead sea grass just stuck in the
336	224808		SB72_2			y	voffb - grab - hopefully we got some of the "weird plant" = dead brittle seagrass
336							
336			***clip 498***				this is the replay of the clip that should be 494 at station NB65.
336							dinner - pasta with turkey bolognese and veggies; chocolate cake for dessert
Sunday Dec 3 2017 JD 337 (all times are UTC)							
337	105000						breakfast - eggs; french toast and bacon - blueberry muffins (amazing)

337	111500						changed Nikon, GoPro and Garmin GPS batteries, reformatted Odyssey SSD & GoPro microSD card - new CF card in the Nikon; swapped out strobes; new laser batteries
337	113000						started new logging file on DataBridge (12:23:00); ArcMap and Hyperterminal
337	122230						board shot - calibration photo at 12:22:30
337	123800	sediment grab	SB71_2	clip 499	10m		vob
337							gravelly sediment with few shells and shell hash; mussels
337	123944						live mussels
337	124010					y	voffb - grab
337	125428	sediment grab	SB71_1	clip 500	11m		vob -BluRay started a few second after the Odyssey
337							rippled sand with sharp ridges
337	125612					y	voffb - grab
337	130350						2 board shots; second one is a calibration photo at 13:03:50
337	131332	transect + grab	SB71	clip 501	18m		vob - sandy with slippersnails
337							sand ripples
337							maybe finer sand no more ripples
337	132300						suddenly out of crepidula back into sand ripples

337	132354						line in the video; zastra (seagrass) clump broken off and stuck on the line
337	132446						small boulders in fwd camera
337	132620						boulders with sponges
337	132800						sponge vertical cliona
337	132838						very extensive cliona
337	132950				13m		cliona castle-like structure in the fwd
337							asterius on the rocks
337	133358						ghost lobster trap; blackfish on under the rock just after the pot
337							getting shallower
337	133514						old wire on the bottom (again)
337	133600						another ghost pot pretty damaged
337	133800						transition from sand into shells and gravel
337	133926						crab in the fwd
337	134420						asked the bridge to speed up a bit
337	134716						isolated boulder (its on the bathy and backscatter)

337	134820						another boulder - orange sponge; lots of other biota
337	134850						transition into lost of shells and gravel
337	135000					19m	fewer shells more gravelly sediment with shell hash
337	135240						cliona nodules among lost of crepidula
337	135420						transition into finer sediment as we come up on the shoal 17m up to 11m
337							rippled sand
337	135712					y	voffb
337	142320	sediment grab	SB70_1	clip 502	10m		vob - gravelly sediment
337	142430						jelly
337	142558					y	voffb - grab
337	143740						board pic with calibration shot
337	144318	sediment grab	SB70_3	clip 503	20m		vob - first photo before video started
337							in a low backscatter patch
337	144418					y	voffb - grab
337	145220						board pic with calibration shot

337	145950	transect + grab	SB70	clip504	19m		vob
337							gravelly sediment with few shells and shell hash
337	140320						voffb - no green laser aborting deployment to reset
							changed batteries on green laser
337	141705	transect + grab	SB70	clip 505	19m		vob
337	148000						starting transect
337							gravelly sediment; cobbles; shells - astrangia on some of the cobbles
337	151912						boulders
337	151920						there was something something man-made between the boulders
337	152138						transition into more cobble
337	152148						bottle and a welk
337	152208						sharp tranisitons into fine sediment then gravel and shells
337							this back and forth to fine sediments happened a couple of times
337							no back int o mostly gravelly sediment with cobbles and shells
337	152439						wire

337	152450						another line
337	152504						big fish in fwd camera (blackfish?)
337	152550						boulders covered with anenomes and some sponges
337							footage in the fwd and GoPro will be great
337	152736				10m		up a huge rock ridge
337	152830						up another huge rock ridge
337	153000						boulders with gravelly sediment between
337	153100				7m		bumped into giant boulder
337	153216						kelp
337	153230						black seabass hiding in the rocks
337							coming down over the north side of that rocky ridge area. still some smaller boulders but fewer giant ones.
337	153620						gravelly sediemnt with shell hash
337	153810						clipping the edge of the next ridge back into bouldery area
337	154100						changing course to the west b/c ship doesn't want to get any closer to the Ram Island
337	154240						out of the boulders in to very coarse seidment; lots of cobbles and shell hash

337	154340						fewer cobbles; more gravelly sediment; shell hash
337							moving into an area of slightly higher backscatter - more shell-y??
337	154654		SB70_2			y	voffb - grab
	160308						GoPro test shots (vid+ photos). GoPro time is spot on to the second. Yay!
337	160000						changed Nikon; GoPro; Keldan light; downloading the GoPro
337	162553	transect + grab	NB56	clip 806	15m		vob
337							Chris and Peter were called up to meet with Marco (they're in trouble!!); it's too shallow to follow the planned transect; so we'll parallel it a few 10s of meters to the north.
337	163410						beginning transect
337	163620						tumble-(sea)weed
337							sand with some ripples; shell hash; dead seagrass; - we are going against the current so there's a lot of stuff floating by
337	163830						small boulders with sponges
337							more shells and shell hash; lots of shell collecting by the rock
337							more cobbles and gravelly sediment
337	164030						hit a boulder
337	164110						lobster pot

337							fwd camera is going to have some great footage of the sponge
337	164500						algae (digitata) - palml algae
337	164700						kelp stuck on the fwd camera
337							gravelly sediment with lots of cliona sponge
337	164911						no sponge; gravelly sediment with crepidula
337	165207						spider crabs on pretty dense slippersnail bed
337	165553						lots of spider crabs and slippersnails
337	165813		NB56			y	voffb - grab
337	17347	transect + grab	NB51	clip 507	10m		vob
337							came down on a crepidula bed
337							transiting repeatedly over small - to - extensive dense beds of crepidula
337	174345				8.5m		dense beds of crepidula then a small ribbon of sand then more crepidula
337	174421						spider crab trying to fight the seaboss
337	174543						spider crab close up
337	174701						in the inter-crepidula bed areas there is interesting texture in the finer sediments - mottled and pocky maybe with some sort of burrows; others are more sandy with shell hash

337	180311					y	voffb - grab -- aiming for a grab of half crepidula/half sediment
337	183237	sediment grab	SB65_3	clip 508	14m		vob
337							spider crab having a look at a clam
337	183347					y	voffb - grab
337	184031						board pic with calibration shot
337	184239	transect + grab	SB65	clip 509	13.7m		vob
337							fine rippled sand
337	184451						beginning transect
337							lots and lots of rippled fine sand; a few shells and crepidula here and there too
337	190413		SB65_2		14m	y	GRAB mid transect - staying down to continue transect for a couple hundred meters more.
337							continuing over sand with some ripples and occational pockets of shells; shell hash and crepidula
337							spider crabs
337	191721						voffb
337	192637	sediment grab	SB65_1	clip 510	14m		vob
337							back down in the same spot the transect ended

							"every grab tells a story"- Roman
337	192807					y	voffb - grab
337	200401						board pic with calibration shot
337	200901	transect	SB68	clip 511	14m		vob
337							gravelly sediment and shells with shell hash
337	201201						boulder
337	201221						crepidula
337	201231						blue crab
337							getting shallower, maybe more fine grained sediment
337	201503						lobster trap (big fish swimming around it in the fwd camera)
337							back into gravelly sediment with shells and shell hash
337	201800						in sandy area with some ripples as we approach the shallowing rocky ridge area (as seen on the bathy grid)
337	201811						back into more gravelly sediment with shells and mussel shells
337	201905						big welk
337	202201						boulders

337	202231				9m		close up of a ghost trap
337	202327						big boulder with a lot of scour
337	202335						black seabass
337	202433						boulders gravel cobble, cliona sponge and aglae on the boulders
337	202853					n	voffb - no grab
337	203000						SEABOSS on board. End of Survey. Heading back in to Avery Point, CT
337							
337							
337							
337							
337							
337							
337							
337							
337							
337							

<i>JD</i>	<i>Time UTC</i>	<i>site type</i>	<i>NURTEC site</i>	<i>SEABOSS site</i>	<i>Odyssey 7 clip #</i>	<i>depth (approx)</i>	<i>grab</i>	<i>Comments</i>
Survey Times: UTC (ZD= -5 hrs)								
Personnel: Dann Blackwood (USGS); Seth Ackerman (USGS); Roman Zajac (UNewHaven); Ivar Babb (UConn); Chris Conroy (UConn); Kay								
Positions: UTM Zone 18N WGS84								
GPS Equipment: Garmin handheld GPS (GPSmap 76C; Dann's). Antenna aft port side along the rail and up the port side of the A-frame ~2 meters to the port of center. Logging that GPS to DataBridge CF card; and into ArcMap GPS via Belkin usb to serial adapter on Dell laptop Windows **XP** - saving 1 (really 2) second point shp. Ship's nav is Nobeltec getting DGPS from the antenna centered aft on the wheelhouse via feed in DryLab - logging this as a backup in Hyperterminal via Proflici usb to serial adapter on Dell laptop.								
SEABOSS Sampling: SEABOSS sampler is a modified Van Veen sediment grab with one GoPro 4; Nikon D300 Still camera w/ Photosea strobe and down/fwd-looking SD Video Cameras. GoPro Hero4 (Hero4_6) shooting 1080 video at 60 FPS. Wired lights for the down video/camera. Keldan light for fwd vid/GoPro. Down video into the GPS3; GPS from the ship's nav (use Null modem serial cable) getting NMEA nav strings parsing the time only to provide timecode to the Odyssey7. Note ship's nav is for the antenna on the wheelhouse; not the A-frame or the depolyment point of the SEABOSS. Dann's Garmin GPS is set up (WGS84; WAAS-enabled GPS) with the antenna running out the wetlab stuffhole; along the port rail and up the port side of A-frame. Antenna is ~2 meters from the deployment location. The Horita GPS3 is providing LTC timecode to the Odyssey7; NMEA strings are being endocded onto the audio-in of the Odyssey7 via the GeoStamp Audio (serial in is split off from the Garmin GPS. Roman has a point-an-shoot camera used to take topside photos of the VanVeen grab upon recovery of a sample with a sample id tag. GoPro and Nikon were set to UTC time and have calibration photos of time.is/utc and/or timecode (on Odyssey7) to determine time offset; if any. Ship's nav is also being fed to the Horita GPS3 (use Null modem serial cable) getting NMEA nav strings parsing the time only to provide timecode to the Odyssey7. **The GPS3 as flaking out on day 1; so we are setting the Odyssey's internal clock to the time from the GPS overlay and using the LTC from time-od-day NDF instead of the LTC input*** The GeoStamp Audio is taking the Garmin nav in and NMEA strings are being endocded onto the audio-in of the Odyssey7.								
Video: The primary video is a down-looking Simrad (version #????XXXXXX) SD video, fwd is the same camera model SD video, both run up the Falmat electromechanical cable on the Interoccean winch. Video feeds come into the RemoteOceanSystems (ROS) control box (beige box). Down video out ROS to the Horita SCT-50 then split to the Odyssey7 (via the Horitia GPS3 -> Etekcity upsampler set to 720P60FPS) and the JVC SR-HD1250 BluRay recorder then to the Videonics Video Mixer then to the JVC monitor. Fwd video is out ROS to Horita SCT-50 then to the JVC SR-HD1250 BluRay recorder then to the Videonics Video Mixer and the JVC monitor. GoPro Hero4 is shooting 1080P60FPS video alongside the fwd looking Simrad camera (same orientation). GoPro camera and all the video overlay are set to UTC time and have calibration photos of time.is/utc and/or timecode (on Odyssey7) to determine time offset; if any. The GoPro was time synced regularly to UTC using Camera Studio software on Seth's MBP.								

Photos: Nikon D300 Still camera w/ Photosea strobe. The Nikon is taking 12 Megapixel photos and is set to UTC time and have calibration photos of time.is/utc and/or timecode (on Odyssey7) to determine time offset; if any. The Nikon was synced regularly to UTC manually. Roman has a point-and-shoot camera used to take topside photos of the VanVeen grab upon recovery of a sample with a sample id tag.

Tuesday May 8 2018 JD 128 (all times are UTC)

128	0000							Start of survey --
128	1027							leaving the dock at UCONN Avery Point
128	104547							test photo (double check time against the vid) - might have to adjust the time
	105800							GoPro time synced with Studio for GoPro software - GoPro Hero 4_6 pass usgsusgs
128	112746	transect + grab	NB45-T	2018-018-001	clip 512	7m		vob - shells and kelp other sea-salad
128	112952							beginning transect
128	115824	transect + grab	NB45-T	2018-018-001			y	voffb - grab - muddy
128	120924							test shot with whiteboard 002 9 (check time on still camera)
128	123000							seaboss in the water, but just was told depth is 25+m, too deep for Ivar's 360 camera, bringing it
128	123226	transect + grab	NB52-T	2018-018-002	clip 513	24m		vob - shelly, crab
128	123350							beginning transect
128	124810							ArcMap crashed, logging stopped on ArcMap
128	125712							end of the transect
128	125728	transect + grab	NB52-T	2018-018-002			y	voffb - grab
128	130720							GPS is reporting 5 foot accuracy!!

128	131008							photo of board
128	131026							photo of board again
128	131408	grab	SB69g3	2018-018-003	clip 514	20m		vob - bouders, shells, gravel
128								algae stuck on sampler
128	131930		SB69g3	2018-018-003			y	voffb - grab in between the boulders; we'll see
								board shot says SB69g1 and 003 but it should be 004
128	133042	grab	SB69g1	2018-018-004	clip 515	15m		vob - shelly
128	133158			2018-018-004			y	voffb - grab
	134250	transect + grab	SB69-T	2018-018-005	clip 516			vob - first photo before recording started
128	134300							video started a few seconds after photo; shells shell hash some boulders
128	135200							boulders
128								lots of "white <explicative> -" what's his face did his whole master's thesis out here"
128	140540		SB69g2	2018-018-005			y	voffb - grab
128	143410	transect + grab	NB58-T	2018-018-006	clip 517			vob - shell hash sand?mud? lots of algae; kelp
128	144800							Roman just pointed out that the date on the video was messed up. Said 5/18/18; I updated to 5/08/18; it was a problem with the Hortia SCT-50 controlling computer; needed to change the system date (time is okay because it is pulling that from the GPS)

128	144956							BluRay/Sony/CRTMonitor; Odyssey vid ok - will reseal the vid cables
128	145754		NB58-T	2018-018-006			y	voffb - grab
128								GoPro died somewhere on that transect - back battery said 2 bars but no good
128	150700							changed GoPro and Keldan batteries, Nikon too --
128	152400							downloaded the photos from the Nikon camera
128	154030	transect + grab	NB61-T	2018-018-007	clip 518			vob - fine sediment and shell has with algae
128	155300					22m		more gravelly sediment; cobble?
128	160320							banged into a boulder
128								here come the boulders
128	160700							ship paused; will take sample here
128	160742		NB61-T	2018-018-007			y	voffb - grab
128	165414	transect + grab	SB71-T	2018-018-008	clip 519	11m		vob
128								cliona (sponge)
128								slippersnails
128								boulders

128	171336							lobster trap
128	172800		SB71-T	2018-018-008		19m	y	voffb - grab
128	180526	transect + grab	NB60-T	2018-018-009		10m		vob - muddy - first pic might be before vid start
	180800							something funky with the LTC timecode on the Odyssey7. ~10 min ahead of GPS time
				clip 520-522				many cycles of the Odyssey timecode input and GPS3
128	181012							had to cycle the GPS a couple times, just noticed that the LTC timecode was ~10 min ahead of GPS time. -- ***Not sure how long it has
128	181700				clip 523			restarted video on Odyssey
128	181908				clip 524			restarted video on Odyssey - switched LTC input to "time of day NDF" - I set the Odyssey clock to the GPS time. Not using the GPS3 anymore
128								** USE GoPro video until 181908
128								muddy sand lots of algae
128	183458		NB60-T	2018-018-009			y	voffb - grab
128	185010							switched the GPS to our nav (from the chips dry lab feed), split from the DataBridge to the GPS3 and DataBridge
128	185050							test shot with whiteboard 010
128	190200							Damn noticed that audio was wacky on the Odyssey. Seems the connection to the black box from the GeoStamp was not good. reseated the
128	191410	transect + grab	NB65-T	2018-018-010	clip 525	9m		vob

128								lots of shell hash; algae
128	192520							tons of mussel shells (some live ones too)
128	192700							boulders!! coming up on the ridge in the hillshade
128	193952							a few isolated boulders
128	194342		NB65-T	2018-018-010			y	voffb - grab
128	201600	grab	NB64-T	2018-018-011	clip 526			vob - poor visibility -- will do grab here then go to transit site after
128	201810		NB64-T	2018-018-011			y	voffb - grab
128	203200	transect + grab	NB64-T	2018-018-012	clip 527			vob - fwd video started a few seconds before the down vid
128	204548		NB64-T	2018-018-012			y	voffb - grab
128	211944	grab	SB74g1	2018-018-013	clip 528			downloading the GoPro Photos - card filled during recovery of the sampler at previous site vob - no strobe firing on the still camera, coming back up
128	212034		SB74g1	2018-018-013			n	voffb - no grab
								changing the battery in the Nikon camera - did not download the photos
	212946							calibration photo in the dry lab - 21:29:46 on time.is/UTC - 21:29:45 on Nikon
	213340							photo of board (still says SB74g1 and 013) with phone on time.is/UTC

								new whiteboard shot
	213920							strobe test shot at 213920
128	214334	grab	SB74g2	2018-018-014	clip 529	14m		vob - shell hash and rippled sand, gravelly sediment
128	214452		SB74g2	2018-018-014			y	grab
128	214530		SB74g2	2018-018-014				voffb - video recorded for 30 seconds extra before coming up
128	220058	grab	SB74g3	2018-018-015	clip 530	17m		vob - gravelly sediment shell hash, some patches of finer sand
128								crepidula slippersnails
128	220256		SB74g3	2018-018-015			y	voffb - grab
128	221420	transect + grab	SB74-T	2018-018-016	clip 531	20m		vob - first photo before recording started
128								sand ripples
128	222400							fish head
128	222940							jonah crab?
128								coming up on the high releif area
128	223010							algae
128	223020							boulders!! coming up on the ridge in the hillshade

128	223206							Dann says he saw a lobster, Chris says fish
128	223832							skate
128	224100							past the boulders, into sand
128	224418		SB74-T	2018-018-016			y	voffb - grab
128								downloaded the photos from the Nikon camera
128								downloading the GoPro Photos
Wednesday May 9 2018 JD 129 (all times are UTC)								
129	111900							changed batteries in Nikon, GoPro, Keldan, Strobe, lasers
129								formatted Odyssey SSD
129	112530	transect + grab	NB66-T	2018-018-017	clip 532	8m		vob
129								boulders, kelp and algae -- possibly mussel shells hidden under the vegetation
129	113335							just noticed that the ship's nav being logged in Hyperterminal was stuck at ~ 0900 this AM; reseated the USB adapter and the strings
129	113814							transition to gravelly sediment (?) mussel shell hash
129	114744							here come the boulders
129								cobble and boulders

129	114920							mussels and gravel
129	114950							boulders
129	115022							big pile of boulders
129	115132							hit big boulder lots of mussel hash
129	115214							fishies (maybe scup)
129	115430		NB66-T	2018-018-017			y	voffb - grab in gravel hopefully(?)
129	123440	transect + grab	NB73-T	2018-018-018		7m		vob - rocky boulders shell hashlots of algae
129	124408							giant boulder
129	124644							line in the fwd and down camera
129	124742							transision off the boulder rocky area; sandy/gravelly/shell hash and still a lot of algae
129	125028							skate
129	130000							crepidula clusters in the troughs of small sand ripples
129	130200							more dense crepidula
129	130328							ripples s little bigger and crepidula aligned in the troughs again
129	130426		NB73-T	2018-018-018			y	voffb - grab

129	133312	transect + grab	NB63-T	2018-018-019	clip 534	6m		vob
129								sandy with patches of algae
129	133540							rocky heading up onto a bouldery ridge
129	134000							we were lined up on the wrong point, what the bridge had was different than what we're looking at in the dry lab.
129	134500							heading now for the target site NB63g1 then will continue transect to the south
129	135040							transition to the bouldery ridge, ship is going to head south now along the crest of the ridge
129	135600							off the boulder ridge, into rippled sand bedforms
129	140310							approaching the ridge; more attached algae probably on rock or gravel
129	140436							bumped a boulder. I think we've gotten to the boulder ridge
	140520							off the boulder ridge, into gravelly sediment
129	140536		NB63-T	2018-018-019				voffb - grab
129	143958	transect	NB59-T1	2018-018-020	clip 535	7m		vob
129								fishies
129	144920							going over a small boulder ridge
129	145508							camera strobe isn't firing. we'll bring the sampler back on then go to a different nearby site

129	145542		NB59-T1	2018-018-020			n	voffb - no grab
129								changed batteries in Nikon, getting camera err, Dann figured out that the shutter must have half stuck open when the battery died, with err showing he took a shot. then he reset the f22 and focus just under .5 m
129	151856							whiteboard shot
129	152150	transect + grab	NB59-T2	2018-018-021	clip 536	7m		lots of fish
129								lost of attached algae and kelp
129	152850							sargasso
129	153500							continuing on further south, to see if there is crepidula; following close to the same transect done last fall
129	154002							clearly in crepidula
129	154016		NB59-T2	2018-018-021			y	voffb - grab
129	162210	transect + grab	NB57-T	2018-018-022	clip 537			vob - sandy with clusters of algae
129	162520							gravelly sediment
129	162600							algae on cobble and small boulders
129	162910							coming up on the ridge; more sm bouldery and cobble; spider crabs hanging on to the algae

129	163020							skate
129								very dense algae
129	163904							line; very fresh looking; Dann doesn't see any bouys though
129	164226							boulders; algae; spider crabs
129	164550							jellyfish
129	164700							into sand and gravelly sediment
129	155336							spider crab back-flip
129	165454							spider crab just flipped us off; international diplomacy (he gave us the bird)
129	165654		NB57-T	2018-018-022			y	voffb - grab
129	173106	transect + grab	NB53-T	2018-018-023	clip 538			vob
129	173210							sandy some shell hash with batches of algae; line - has algae growing on it.
129	173410							actaully it looks like that line is a cable
129	174512							flounder and sea-robin
129	174608							entered the "sea desert"
129								spider crab

129	175556		NB53-T	2018-018-023			y	voffb - grab
129	182500							changed batteries on Nikon, GoPro, Reidian - downloaded Photos from Nikon and GoPro vid; Dann opened up the f-stop on the Nikon to f16
129	183616	transect + grab	NB46-T	2018-018-024	clip 539	14m		vob - crepidula
129	183700							lots and lots of crepidula
129	184300							spider crabs galore
129	184536							skate
129								expansive crepidula mats with ribbons of sand and shell hash between them
129	190240						n	voffb - grab (looks like we might be losing some sediment) - will re-take in same spot.
129	190850		NB46-T	2018-018-024				vob - no video; just a photo (GoPro was running for the 2nd try grab)
129	190904		NB46-T	2018-018-024			y	voffb - grab
129	193223	grab	SB68g3	2018-018-025	clip 540			vob - muddy sand (?) - ***NOTE: the whiteboard says SB68g1; it should be SB68g3
129	193344		SB68g3	2018-018-025			y	voffb - grab
129	193726		SB68g1	2018-018-026	clip 541			vob - sand and shell hash
129								some cobble
129	194842							boulder nearby, tried for grab but half on the boulder - didn't trip the sampler

129								will bump us to the east 10 meters and we'll try there
129								clear of it.going for the grab
129	195040		SB68g1	2018-018-026			y	voffb - grab
129	200636	transect + grab	SB68-T	2018-018-027	clip 542	7m		voffb - boulders with algae - we'll motor 100 west over this bouldery area then drop off to low relief seabed; sample near SB68t2 in ~28 m water
129	200804							lobster!!
129								big bouldery ledge area
129	301314							ghost lobster pot among the booulders
129								no more algae on these boulders as we get deeper
129	201416							transitino from boulders to sand
129	201550							isloated gigantic boulder several meters west of the boulder ridge
129								sand with some shell hash
129	201830							sea-robin; spider crab
129	201940							crepdula scattered
129	202030							sseveral pider crabs
129	202234							lobster pot

129	202630							threading the needle between a handful of isolated boulders as we head west to the sample target spot
129	203000							a little more dense bed of crepidula
129	203052		SB68-T	2018-018-027			y	voffb - grab
129	210350	transect + grab	NB43-T	2018-018-028	clip 543	18m		started recording video in the water column on the way down; cool jelly fish footage in vid (maybe in photo too)
129	210516							vob
129	210700							gravelly sediment
129	210820							object on seabed; looks like fabric
129	211030							bathy had odd rectangular feature on seabed, nothing in the backscatter or on the chart; we ar going right over it
129	211120							some linear objects(?) slightly buried
129	211200							tire?? mostly buried
129	211340							about to move off the bathy "feature" there was a linear thing, Chris caught a photo if it
129	211418							dead fish on the bottom
129	211506							more debris (maybe a coffee cup)
129	211510							more shell hash
129	211524							big bryozoan

129	211638							something man-made; metal object
129	211818							big burrow
129								a bit less gravelly and shell hash
129								more silty
129	212534							going over a small ridge - small boulder to the port side of the video
129	212628							few small boulders
129	212656							back to silty sediment
129	212950							about to grab and we've come into cobble and small boulders; doh!
129	213044		NB43-T	2018-018-028			y	voffb - grab (might have grabbed a piece of old rope on the bottom)
129	220500	transect + grab	NB41-T	2018-018-029	clip 544			vob - sand - going to make our way north towards the NB41-T1 spot
129	220638							hummocky sand
129	220742							isolated boulder - seen in the bathy data too
129	221300							boulder
129	221348							transition to shell hash and attached algae
129	221538							close to the t1 point, starting the originally planned transect to NB41-t2, beginning transect

129	223200		NB41-T	2018-018-029			y	voffb - grab
129	232000							downloaded the photos from the Nikon, vids from GoPro and vids from Odyssey7
Thursday May 10 2018 JD 130 (all times are UTC)								
130	113000							changed GoPro batteries, Nikon, Keldan
130								whiteboard shot with Calibration photo time.is/utc
130	120110	grab	SB58g3	2018-018-030	clip 545	30m		gravel and shell hash
130	120326		SB58g3	2018-018-030			y	voffb - grab
130	122144	grab	SB58g2	2018-018-031	clip 546	29m		vob - first photo before BR recording
130	122306		SB58g2	2018-018-031			y	voffb - grab
130	124022		SB58g1	2018-018-032	clip 547			vob shelly and mix of gravelly sediment and sand (trough to crest)
130	124204	grab	SB58g1	2018-018-032			y	some grab (vob) and some on the bottom of the sand wave so possibly a mix of the gravel and sand)
130	134418	transect + grab	SB58-T	2018-018-033	clip 548	24m		personnel transfer (Roman and Ray are getting on for a day); also got the FedEx package from Jane with MBP charger; etc
130								vob sandy gravelly sediment with shell hash
130								were still about 200m away from the start of the transect. asking the bridge to steam over there a little faster than normal.
130								lobster line

130	135134							lobster trap
130	135300							near the T1 site; heading towards the T2 site
130	135748							into gravelly sediment
130	135900							wire is off to the side, might be hung on something or fighting the current
130								all stop
130	140400							Cptn maneuvered us around so the wire is straght down, will proceed with the transect
130	141038							trying to get moving again, but the current is very strong, sampler kiting way out to the stbd side
130	141240		SB58-T	2018-018-033			n	voffb - no grab - current too strong
130	141500							little excitement, ghost lobster trap and line was stuck on the sampler, Dann couldn't lift it on board, too much tension on the wire. We were
130	143000							changing batteries in the GoPro, Nikon, Keldan - downloaded pic from Nikon
130	145334	transect + grab	NB42-T	2018-018-034	clip 549	46m		vob - first photo before BR recording
130	145450							bouldery and ghost lobster trap
130	145710							more lobster gear
130	150020							didendum on the boulder
130	150400							big boulders

130	150436							fish - no id, just in video
130	150712							sea-robin
130	150900							gravelly sediment with isolated small boulders
130	151140							back into boulders large and small
130	151150							giant boulder
130	151700							gravel and shell hash
130	151806							some cobble
130	151840							lost of cobble and sm boulders
130	152034		NB42-T	2018-018-034			y	voffb - grab beyond the cobbles, in gravel/shell hash
130	153000							pausing for lunch and a parts delivery to the ship's crew
130	164330		NB39-T	2018-018-035	clip 550	97m		came right upon a lobster line on the decent. brining the sample up and moving a bit to the west
130	164850		NB39-T	2018-018-035				vob - gravelly sediment with shell hash
130	165008							another line on the bottom
130	165110							cobbles and small boulders
130	165128							fish head

130								kelp
130	165754							gravel and cobble with shell hash, spider crabs
130	170336							sea robin
130	170642							sea robin
130	170720							line in the vid - bigger than a lobster line - communication cable?
130	170946							skate in t fwd camera - got away before the botton vid picked him up
130	171020		NB39-T	2018-018-035		84m	y	voffb - grab
130	175026	grab	SB66g3	2018-018-036	clip 551	75m		vob - boulders - put down near the T2 site, so we'll motor under DP the g3 site to get a grab
130								crab
130	175810							sea-robin
130	180002							sea-robin swimming in the fwd camera
130	180200							big boulder
								Keldan light battery low, light going out, we're coming up to change out all batteries
130	180648		SB66g3	2018-018-036			n	voffb - no grab
120	182000							changed GoPro batteries, Nikon, Keldan, and strobe - downloaded the GoPro vids

130	183330				clip 552 (see comment)			something funky with the recording (or the operator); I must have hit play instead of record and we all thought we were on the bottom already. Odyssey clip 552 is just water column; not sure if anything was recorded on the BRs.
130	183448	transect + grab	SB66-T	2018-018-037	clip 553			vob - boulders
130	183828							sea robin swimming along in down vid
130	184246							beginning ascent up the wall, rise ~30m over run ~80m -- pretty good slope; Chris noted that the fwd-looking vid looks like the down vid usually
130	184608							ghost trap stuck in the rocks
130	184636							couple fish in the fwd vid (Cunner? Black Seabass?)
130	184820							leveling off at the top of the rise; lots of big boulders; not looking sample-able at this site.
130	185012		SB66-T	2018-018-037			n	voffb - no grab - boulders and cobble
130	191352	transect + grab	SB48-T gra	2018-018-038	clip 554	82m		vob - gravelly sediment with shell hash and small isolated boulders
	192100							asked the bridge to head due south so that we can continue transect across the depression feature as seen in the bathy data; we'll do a jog to
130	192320							less bryozoan, more like coarse sand and shell hash less gravel/cobble, still small isolated boulders
130	192528							sediments getting finer, medium sand and shell hash, hummocky sand
130	192540							transition to cobble and boulders, scoured out around the small boulders

130	192634							algae covered rocks and substrate
130	192700							gone far enough south to catch the depression, good stuff; great transitions; asked the bridge to head west;
130	193200							currents are tricky, might just go where we can go east then take a sample
130	193310							finer sediment but just got to small boulders as we come up on the flank of a ridge.
130	193520							heading south and up on the ridge, lots of cobble and boulders covered with algae
130	194104	NB48-T grab		2018-018-038			y	we got something, we did so we'll go back to that sandy spot in the hole and just do a grab there.
130	201350	grab	NB48g2	2018-018-039	clip 555	90m		vob - just on the edge of the sand and the boulder cobble at the northern edge of the depression
130								moving to the SW to try to get that sand
130								getting deeper still nothing grab-able
130	201838							maybe more sandy now
130	201846		NB48g2	2018-018-039			y	voffb - grab in a sandy patch - crab and skate in vid at the grab site
130	205000							changed GoPro batteries, Nikon
130	210626	grab	NB40g	2018-018-040	clip 556	25m		vob - cobbly gravelly
130	210734		NB40g	2018-018-040			n	voffb - no grab -- didn't get a good one; big rock stuck in the sampler jaw
130	211414	transect + grab	NB40-T	2018-018-041	clip 557	25m		vob - cobble gravel - came down in same spot as last grab attempt

130								lots of cobble on sediment
130	212048							small boulder
130	212140							getting a little more small bouldery
130	212240							astrangia (white stoney coral - northern star coral) on the cobble and boulders
130	212320							fewer scattered cobbles on gravelly sediment, no more astrangia
130	212800							sandy sediment
130	212820							now some cobble
130	212928							line
130	212942							small boulders
130	213010							more ghost line
130	213022							line wrapped all around the small boulders
130	213240							slightly bigger boulder, blood star on the side of one boulder
130	213344							another blood star on boulder
130	213444							crashed into a giant boulder
130	213452							anchor in the down vid

130	213820							into a patch of sandy sediment - going to try for a grab
130	213836		NB40-T	2018-018-041			y	voffb - grab
130	220524	transect + grab	NB36-T	2018-018-042	clip 558	50m		vob - atlantic jack knife clams (razor clams) on gravelly sediment
130	220842							fewer clam shells more gravelly sediment
130	220950							boulders
130	221100							searobin
130	221430							searobin 3 in a row
130	221450							another searobin and another, and another all lined up facing the same way.
130	222300							gravelly sediment with shell hash
130	222836							small boulders up on the ridge as we approach the T2 site
130	222930							cobble with isolated medium sized boulders
130	223018							sharp transition sand to cobble
130	223108							searobin
130	223128		NB36-T	2018-018-042			y	voffb - grab might be spewing sediment
130	224510	grab	NB36g2	2018-018-043	clip 559	36m		vob - going for just a quick grab - Keldan is flaking out, low bat, no good fwd vid

130								boulders on sand - asking bridge to bump us to the north to try in a sandier area
130	224850			2018-018-043			y	voffb - grab
Friday May 11 2018 JD 131 (all times are UTC)								
131								changed GoPro batteries, Nikon, Keldan, and strobe
131	11228	grab	SB55g2	2018-018-044	clip 560	9m		vob -came down on a lobster line, nearby small boulders
								off the boulders into gravelly sediment going to try a grab
131	112828							sampler didn't trip
131	113002		SB55g2	2018-018-044			y	voffb - grab - grab was sandy mud
131	114252	greb	SB55g3	2018-018-045	clip 561	9m		vob- sand; shell hash
131	114400						y	voffb - grab
131	120132	transect + grab	SB55-T	2018-018-046	clip 562	4m		vob - boulders covered with algae and kelp **NOTE: whiteboard shot just says "04" for the USGS SEABOSS site # - it should read "046"
131	121456							lobster pot
131	121526							big boulder
131	122000							off of the ridge and into sandy sediment
131								over the low backscatter area, finer sediment, maybe muddy sand or sandy mud

131	122720							ghost lobster pot
131	122844							another ghost lobster pot
131	123100		SB55-T	2018-018-046			y	voffb - grab
131								personnel transfer (Roman and Kay are returning to the ship)
	133000							changed GoPro batteries, Nikon, Keldan - downloaded the Nikon pics
131	141718	transect + grab	NB37-T	2018-018-047	clip 563	19m		vob - sandy mud - lots of burrows NOTE. deployed the sampler but saw schmutz on the down video; brought it back up to wipe off; on vid
131	142402							crab; small sand ripples
131	143000							a lot of the same; rippled muddy sand with burrows and algae kelp tumbleweeds
131	143000							more of the same
131	144342							crab; maybe dead
131	144424		NB37-T	2018-018-047			y	voffb - grab
131	150920	transect + grab	NB32-T	2018-018-048	clip 564	35m		vob - gravelly sediment with shell hash
131								some cobble
131	152046							spider crab
131								getting into some small boulders

131	152000							we seem to be turning, might be heading to the wrong point now, but it could take us over an isolated large boulder (according to the bathy).
131	152440							turning to get back on course to T1 looks like we passed just east of the boulder
131								heading towards another possible boulder
131	152850							small boulder
131								spider crab
131	153250							lots of cobble or slightly bigger
131	153300							approaching another boulder feature as seen on the bathy
131	153410							passed right over the "big boulder" feature, but never saw anything; maybe someone moved it out of the way.
131	153726							asterias sea star (Chris says that's "super duper random" to see here)
131	154124							another asterias
131	154152							and another asterias; maybe not so "super duper random" after all
131	154240							more asterias
131	154702		NB32-T	2018-018-048			y	voffb - grab - in the gravelly sediment/cobble - we'll see
131	163256	grab	SB48g2	2018-018-049	clip 565	9m		vob - shell hash on sand?
131	163414		SB48g2	2018-018-049			y	voffb - grab

131	165042	grab	SB48g3	2018-018-050	clip 566	10m		vob - sandy and shelly again; a few cobbles
131								maybe a few isolated crepidula
131	165216		SB48g3	2018-018-050			y	voffb - grab
131	179246	grab	SB48g1	2018-018-051	clip 567			vob - muddy sand
131								no flash on the Nikon camera - don't think we got a photo at this grab site
131	170352		SB48g1	2018-018-051			y	voffb - grab
131								changed out to batteries, Nikon, Reikan - Damn thinks the Nikon had a poor connection to the trigger since the battery still had juice when we
131	172306	transect + grab	SB48-T	2018-018-052	clip 568	10m		vob - shell hash on sand
131								some crepidula
131	172722							round object on the seabed; looked like some sort of equipment tag
131	172812							another object (?) looks like a hose clamp to me
131	173128							spider crab getting excited at us
131	173320							sand ripples with shell hash in the troughs
131	173918							spider crad
131	175250							spidar crab on the move

131	175758		SB48-T	2018-018-052			y	voffb - grab
131	182146	grab	SB44g1	2018-018-053	clip 569			vob - sand ripples with shell hash in troughs
131	182338		SB44g1	2018-018-053			y	voffb - grab
131	183402	grab	SB44g2	2018-018-054	clip 570	14m		vob - lots and lots of crepidula
131	183556		SB44g2	2018-018-054			y	voffb - grab
131	184600	transect + grab	SB44-T	2018-018-055	clip 571	19m		vob
131								came down in the wrong spot; arrive at the SB44g3 site; but we wanted SB44t2 (to begin the transect to the south); motoring now over to the t1 site and will continue transect NE to the t2 site and take a grab there
131								sandy gravelly with some shell hash and cobbles w/ attached algae
131	185500							Cptn need to do some sort of turning so were holding position for a few min
								fewer cobbles, just a lot of sandy substrate
131	185750							worm castings (hemichorde)
131	190308							couple big boulders in the down vid
131								more cobble and shell hash

131	190720							rocks covered with silt - coming up a small ridge to the west of the bigger ridge
131	190810							boulders!!
131								rippled sand
131	191000							boulders again; spider crab close up in pic(?)
131	191150							boulders
131								rippled sand again
131	191510							noulders
131	191540							back in to sand; gravelly sediment shell hash and cobble
131	191700							cobble and astrengia
131	191724							sandy slope; bottom is coming up on us
131	191744							boulders
131	191822							down the sandy east flank; but we might go up again in a min
131	191854							another big boulder
131	191922							coming over the ridge now, giant boulder (or ledge?) covered bryozoans and dileucona (little pink anenome)
131	192046							east of the ridges, into rippled sand

131	192248		SB44-T	2018-018-055			y	voffb - grab in the rippled sand
131	194626	grab	SB45g1	2018-018-056	clip 572	35m		vob - gravelly sediment with shell hash
131	194754		SB45g1	2018-018-056			y	voffb - grab
131	195810	grab	SB45g2	2018-018-057	clip 573	34m		vob
131	195952		SB45g2	2018-018-057			y	voffb - grab
131	201110	transect + grab	SB45-T	2018-018-058	clip 574	33m		vob - gravelly sediment with shell hash
131	202000							rippled sand with shell hash
131	202616							searobin
131	202730							back to gravelly sediment with shell hash; bryozoans
131								bryozoans(?) hydroids(?)
131	202816							heading down into the hole
131	202840							sand ripples in the hole with patches of shell hash (no ripples)
131	202950							giant giant boulder in the middle of the hole
131	203036							rippled sand on the western side heading back up out of the hole; shell hash in the troughs
131	203912							skate

131	204000		SB45-T	2018-018-058			y	voffb - grab
131	211128	grab	SB42g1	2018-018-059	clip 575	13m		vob - almost a crash landing! - sand ripples very turbid
131	211258		SB42g1	2018-018-059			y	voffb - grab
131	212408	grab	SB42g2	2018-018-060	clip 576	22m		vob - again pretty turbid at the bottom; rippled sand with some shell hash
131	212510		SB42g2	2018-018-060			y	voffb - grab
131	214022	transect + grab	SB42-T	2018-018-061	clip 577			vob - gravelly cobble(?) bottom
131	214606							crabs (spider crabs and jonah crabs)
131	215020							alternating ribbons of gravel and crepidula
131	215110							searobin
131	215200							crab (unknown type)
131	215224							transitions to sand - rippled sand - we are moving along the SW flank of a large sandwave
131	215440							fish (no id)
131	215824							fish wizzing by the SEABOSS
131	215956							fish in the dwn vid
131	220630							changing course to head north and hopefully cross over the crest of one of the big sandwaves

131	220900							searobin buried in the sand
131								crab
131	221000							heading up the crest of the sandwave, hummocky sand in the fwd camera
131	221028							fish
131	221124							at the crest of the sandwave (according to the bathy)
131	221200							heading down the NE flank of the sandwave
131	221206							crab
131	221234							big spider crab
131	221322							lobster!!
131	221340		SB42-T	2018-018-061			y	voffb - grab
Saturday May 12 2018 JD 132 (all times are UTC)								
132	103700							changed GoPro batteries, Nikon, Keldan, and strobe
132	111018	grab	SB41g3	2018-018-062	clip 578	5m		vob hummocky sand
132	111214		SB41g3	2018-018-062			y	voffb - grab
132	112620	grab	SB41g2	2018-018-063	clip 579			vob

132	112744		SB41g2	2018-018-063			y	voffb - grab
132	114132	transect + grab	SB41-T	2018-018-064	clip 580	5m		vob - hummocky sand (among sand waves as seen on the stripy bathy)
132	114444							spider crabs frolicking
132	114904							big spider crab
132	115330							we lost the strobe. will pause here and bring the SEABOSS onboard to have a look.
132	115452		SB41-T	2018-018-064			n	voffb - no grab
132	120326	transect + grab	SB41-T	2018-018-065	clip 581			vob - sandy seabed NOTE: restarting transect from where we stopped to check out the camera/strobe - incremented the USGS site # but
132								mor muddy with atlantic jacknife (razor?) clam shells and moon snail egg case and spider crabs
132	120544							dead blue crab
132	120742							cluster of spider crabs
132	121030							strobe/camera making again; reconnected the trigger cable to the control box and that worked once; but strobe didn't trigger a second time; all stop to bring
132	121204		SB41-T	2018-018-065			n	voffb - no grab
								strobe works on deck
								changed the strobe
132	122248		SB41-T	2018-018-066				vob - strobe still flaky - sometimes work sometimes doesn't

132	122404							voffb - but didn't bring it up on deck
132	122602							vob - back down and win command along transect until the camera stops working again - same SEABOSS and NURTEC site # since we didn't
132	122902							spider crab
132	123120		SB41-T	2018-018-066			y	voffb - grab - calling this grab "SB41-T and g1" (?)
132								changing the battery in the Nikon and GoPro - download GoPro vid and Nikon pic
132								Dann thinks the connectino on the camera to the strobe might have been loose; since the camera was shooting photos (all dark); it wasn't the camera battery; and since we saw the same behavior after swapping strobes it wasn't the strobe.
132	125252							set the GoPro time using Camera Suite
132	125930-ish							whiteboard shot with Calibration photo time.is/utc
132	132204	transect + grab	NB27-T	2018-018-067	clip 584	38m		vob - gravelly sediment with shell hash
132								occasional sipder crab
132	132824							scup
132	133116				clip 585			Odyssey GSD lined (see note at 134000) - fixed in post processing ***NOTE this LTC is seed time; GeoStamp audio for the first 2 min will be wrong
132	134322							more of the same, gravelly sediment occational crabs

132	134510							crab in pic (?)
132	134656							crab & searobin
132	134858						y	vob - grab - DCR - the Odyssey DVD lined up and we missed it. Will fix by playing back the DVD and into the Odyssey
132	142814	grab	NB29g	2018-018-068	clip 586			vob - sand shell hash
132	142950		NB29g	2018-018-068			y	voffb - grab
132								set the time on the BR recorder so now the video clips on the BR will be labeled by time (just realized it didn't keep the clock setting from the
132	144140	transect + grab	NB29-T	2018-018-069	clip 587	46m		vob - small rippled sand
132	144600							hummocky sand
132	144908							welk egg case (there was another one ~10-20 earlier too)
132	145120							sea robin
132	145204							another sea robin
132	145612							another sea robin
132	145900							sculpin or sea robin; didn't get a good look
132	150218							sea robin
132	150320							flounder and something else b/w striped

132	150520		NB29-T	2018-018-069			y	voffb - grab
132	153750	transect + grab	NB25-T	2018-018-070	clip 588	50m		vob - scallop shell; graveely sediment
132	154000							getting a little more cobble-y as we approach the t1 site up on this subtle bathy high
132	154100							small boulder;
132	154140							some super circular things (probably clay); should be a pic of one here
132								more exposed gravel than at start of this deployment
132	154410							beginning transect to the t2 site
132	155100							transitions back and forth from gravel to sand with crepidula
132	155226							sea robin
132	155736							flounder
132								continuing transition after transition from gravel to crepidula
132	160040							stake captured in pic too
132	160816		NB25-T	2018-018-070			y	voffb - grab
132	164050	grab	SB47g3	2018-018-071	clip 589	47m		vob - hummocky rippled sand
132	164144		SB47g3	2018-018-071			y	voffb - grab

132	165624	grab	SB47g2	2018-018-072	clip 590	46m		vob - hummocky rippled sand - same as previous site (we're only 100m due west)
132	165734		SB47g2	2018-018-072			y	voffb - grab
132	172002	transect + grab	SB47-T	2018-018-073	clip 591	45m		vob - rippled sand
132								shell hash in the troughs
132								just a lot of rippled sand with some shell hash and some bigger shells
132	173000							something jumped on the bottom (baby flounder? says the geologist)
132								some crepidula in the troughs; maybe more hash; "maybe more going on" -CC
132	173602							flounder
132	174250							transition into gravelly sediment with cobbles and bigger shells, some of those clay nodule
132	175000							into more sandy substrate
132	175054		SB47-T	2018-018-073			y	voffb - grab
132	180000							changed GoPro; Nikon; Keldan batteries - downloaded the GoPro vids
132	182446	transect + grab	NB24-T	2018-018-074	clip 592	43m		vob - setting up just west of the hole - will try to motor over it to the
132								gravelly sediment with shells and shell hash
132	182630							no flash on the Nikon camera - will try to reseal the connection on the camera to the strobe

	182652		NB24-T	2018-018-074			n	voffb - no grab
132								Dann and I (but mostly Dann) worked on the strobe and the strobe connection to the camera. Switched out to the other strobe and
132	192502	transect + grab	NB24-T	2018-018-075	clip 593	43m		vob - at the start of the transect - renamed this site for USGS # but not NURTEC
132	192710							starting transect - about to head right down into the hole (~ 4m deeper than surrounding
132								gravelly sediment with shell hash
132	192830							rippled sand
132	193330							objects on the seabed
132	193350							lobster backing into the down vid
132								very hummocky sand
132	193540							giant angular object in the fwd camera - shipwreck!! covered with algae
132								crab
132								steep sand heading up out of the hole
132	194000							slightly hummocky sand
132	194710							more hummocky sand; the occasional algae tumbleweed and moon snail
132	194756							sea robin

	195700							ship is veering off track to the south; trying to get back on course
	200530							this isn't working; fighting the current too much; will grab here and move on
132	200700		NB24-T	2018-018-075			y	voffb - grab
132	202956	transect + grab	NB23-T	2018-018-076	clip 594	43m		vob - started vid on Odyssey7 (but not on the BR recorders)
132	203012							late start on the BR recorders
132								arrived at the bottom on top of the edge of an angular boulder
132	203140							beginning transect to the t1 site
132	203200							scup and sea robin
132								corymorpha - hydroid attached to the sand(?), bryozoans, lots of shell fragments
132	203310							spider crab
132	203600							out of the hydroids; few stragglers
132								hummocky sand
132	203720							patch of hummocky sand with more gravel in the troughs
132								back to an area of more hydroids
132	203900							heading up the western flank of a big sandwave

132	204012							sea robin
132	204110							heading down a spur off of the main sandwave
132	204300							heading back up over the main sandwave again
132	204450							starting to come up fast - ~ 7m relief over 25m horizontally
132	204900							sea robin
132	205122		NB23-T	2018-018-076			y	voffb - grab
132	211350	grab	SB40g3	2018-018-077	clip 595	50m		vob - coming down on the edge of a sandwave
132								spider crab crunch in the down vid
132								strobe didn't flash
132	211502		SB40g3	2018-018-077			y	voffb - grab
132	213252	grab	SB40g1	2018-018-078	clip 596	49m		vob - gravelly with shell hash (BRS don't say 19min; must have forgot to stop them at the last site or accidentally restarted them -- will need to
132								still no strobe going off
132								second try it worked; got 2 photos
132	213426		SB40g1	2018-018-078			y	voffb - grab
132	220028	transect + grab	SB40-T	2018-018-079	clip 597			vob - sandy with hydroids - strobe seems to be working again; Yay!

132	220208							starting transect to t1
132	220230							maybe a shrimp or some type of isopod (Roman says cumacusian?)
132	220340							heading up the steep slope of the sandwave
132	220620							buried libinium (spider crabs)
132	221230							heading up the next sandwave
132	221410							scup in the down vid; drifting by in the current
132	222020							rippled sand on the flanks of the second sandwave that we've crested
132	222450							coming up on the next (third and last) steep sandwave climb for this transect
132	222730							upslope
132	222834							jonah crab at the crest of the sandwave
132	223046							couple fish (not certain on the ids - one striped might have been a sculpin or sea robin)
132	223134							moon snail flipped by
132	223830							welk shells
132	223910		SB40-T	2018-018-079			y	voffb - grab

								downloaded all the data - backed up to NURTEC and Lacie drives
Sunday May 13 2018 JD 133 (all times are UTC)								
133								changed GoPro; Nikon; Keldan; using strobe that we used yesterday
133	111602	transect + grab	NB22-T	2018-018-080	clip 598	52m		vob - crepidula and gravelly sediment
133	111700							no strobe - bringing it back up - no grab
133	111716		NB22-T	2018-018-080			n	voffb - no grab
133								Dann changed out the camera (spare Nikon D300); Dann set the camera to GPS time; took calibration photos with the whiteboard; Dann set
133	120332	transect + grab	NB22-T	2018-018-081	clip 599			vob - crepidula and gravelly sediment
133								beginning transect to the t1 site
133	120810							transitions back and forth from ribbons of gravel to sand with crepidula
133	121006							jar on the seabed - encrusted with encrusting stuff
133								
133	122448							spider crab
133	123436		NB22-T	2018-018-081			y	voffb - grab
133	130000							I just reset the time on the Odyssey- it had gotten to be a couple seconds ahead of the GPS time

133	130956	grab	SB38g3	2018-018-082	clip 600	6m		vob - muddy sand cobble-y; turbuent
133	131140		SB38g3	2018-018-082			y	voffb - grab (there were some cobbles in the grab, each sample bagged has a cobble in it)
133	122435	grab	SB38g2	2018-018-083	clip 601	4m		vob
133								hummocky sand; hermit crab
133	132610		SB38g2	2018-018-083			y	voffb - grab
133	134240	transect + grab	SB38-T	2018-018-084	clip 602	6m		vob - rippled sand
133								doh; late start on the BR vid; missed ~10 sec
133								sand ripples with POM (particulate organic matter) suspended and settled in the troughs
133	135740							not rippled sand - muddy sand with cobbles
133	135930							more cobble crossed a transition from low to high backscatter (NOTE: need to re-watch the vid for exact time of transition)
133	140116							something; man-made object - piece of sheet metal or something
133								more cobble and gravel
133	141030		SB38-T	2018-018-084			y	voffb - grab
133								change GoPro and Reelcam batteries, noticed that the Odyssey LTC is 1 min slow (must have oops-ed that when I reset the Odyssey time/date back at
133	142400-ish							took calibration shots with the GoPro - short vid clip and photo

133	144002	transect + grab	NB19	2018-018-085	clip 603		vob - sand hummocky sand - lots of POM floating around and settling into the troughs/catchin on the hummocky sand; some whole leaves; "rivers of detritous; float past the bentic desert; worms waiting for breakdown" -RZ
133	144700						lots of leaf detritous; near the mouth of the CT River
133	144812						moon snail
133	145020						big piles of detritus
133	145320						lots of leaf detritous
133							hummocky sand and some rippled sand; bathy shows us in a large field of small sandwaves but we're not really seeing much surface expression
133	145550						I think there was a white plastic bag in the fwd camera
133							a lot of allochthonous input; the leaves (as opposed to autothonous input - the algae)
133	150100						dense dense allochthonous material; crazy amounts of it here
133							at times you can't even see through it to the seabed
133	150450						another plastic bag in the fwd camera
133	150522						coffee cup top - probably Dunkin Donuts
133							going for a grab - we'll need a rake to get this sample out

133	150746		NB19	2018-018-085			y	voffb - grab
133	152000							we went to change the Nikon battery but it hadn't gone down at all (we are set to ~10s preview instead of the 10min preview-- that must really be saving battery life); not changing the battery yet; previewed some pics from that last site with all the detritus on the camera and they actually look pretty good. Will download later.
133	154244	transect + grab	NB17-T	2018-018-086	clip 604	15m		vob - rippled sand
133								no strobe on the camera again -- damn
133	154624		NB17-T	2018-018-086			n	voffb - no grab
133	161334		NB17-T	2018-018-087	clip 605			vob - continuing on with the transect (new USGS site # same NURTEC)
								took a few photos then the strobe stopped again
133	161844		NB17-T	2018-018-087			y	voffb - grab
133	171158	grab	SB36g3	2018-018-088	clip 606	39m		vob - hummocky sand - camera strobe flashed; yay!
133	171308			2018-018-088			y	voffb - grab
								strobe not working on deck now.
								working on a solution for the non-functional strobe

133	174004	grab	SB36g2	2018-018-089	clip 607	28m		vob - no strobe
133								1 photo worked (out of 5+)
133	174200		SB36g2	2018-018-089			n	voffb - grab attempt - oyster shel stuck in jaw; will redeploy for a grab
133	174906		SB36g2	2018-018-089	clip 608			vob - didn't change the site number for USGS or NURTEC
133	175000		SB36g2	2018-018-089			y	voffb - grab
133	175550							fwd BR was still recording; just turned it off now
133								trying something new for a bit. GoPro (Hero4_4 black) down facing attached to the Nikon housing via 1/4-20 stud (Bill cut a bolt Dann had). Took off the strobe and replaced with another Keldan down facing in the mount for the strobe. The down-looking GoPro is set to time lapse interval 10 seconds (can't use the one-button mode). I set the GoPro time using Camera Suite to GPS time. We will do the transect stopping periodically to make sure we get some good pics from the down GoPro - stoping every ~2min
133	181800	transect + grab	SB36-T	2018-018-090	clip 609	32m		vob - sandy maybe muddy sand come cobbles
133								small boulders (or big big cobbles)
133	181946							rippled hummocky sand; sea robin

133	182220							spider crab
133	182328							sea robin
133	182706							sea robin; spider crab
133	183456							little fish
133	183622							sea robin
133	184220							lots of hummocky sand; occasionally more shell-hash in the troughs
133	184250							entering into the bigger sandwave area
133	184312							sea robin
133	185524		SB36-T	2018-018-090			y	voffb - grab
133								Dann opened up the Nikon settings to f5, shutter 1/400; ISO 2000. We'll see if the lighting with the extra Keldan can give us good Nikon pics. If so
133	195620	transect + grab	NB20-T	2018-018-091	clip 610	42m		vob - sea robin; some of those circular clay depositis
133	195710							spider crab; gravelly cobble seabed
133	195830							lots of clay deposits
133	195920							crepidula too; sea robin; spider crabs; still lots of clay
133	200150							big welk

133	200210							skate egg casings (mermaid's purses)
133								tons of cerpidula and clay nodules
133								maybe just got a little slitier
133	200732							skate
133	200754							driftwood
133	201010							clay pavement under the silty substrate
133	201100							changed to gravel with the clay deposits
133	201610							lots of cerpidula; sea robin
133	201748							striped fish
133	202036							spider crab
133	202052							rope
133	202450							another ribbon of clay pavement
133								gravelly cobble shell hash
133	202914							fish scup(?)
133	202920							sea robin

133	204048		NB20-T	2018-018-091			y	voffb - grab
								Nikon photos w/o the strobe are too under exposed; we'll need to use the down looking GoPro for all of this afternoon's sites ; maybe
133	210042	grab	SB37g1	2018-018-092	clip 611	43m		vob - sand ripples
133								worm tubes; little shell hash
133	210146		SB37g1	2018-018-092			y	voffb - grab
133	211602	grab	SB37g2	2018-018-093	clip 612	43m		vob - gravelly sand some shell hash
133	211734							flounder
133	211804		SB37g2	2018-018-093				voffb - grab
133	213624	transect + grab	SB37-T	2018-018-094	clip 613	41m		vob - sandy seabed
133								just noticed that the Odyssey7's timecode is a couple seconds faster than the GPS time.
133	214200							spider crab
133	214258							mermaid's purse (skate eggs)
133	214348							spider crab
133	214434							sea robin
133	214920							squid

133	214938							same squid; keeps flying past the down camera
133	215046							that squid just inked
133	215550							something? muffler?
133	220338							2 fish - 1 w/ vlack stripes; then a sea robin
133	220626							spider crab
133	220728							moon snail cruised by in the current
133								about to head down the slope 35m down to 50m
133								sandy slope, not as interesting as I thought it would be
133	220940							spoke too soon, hyrdoids and fish down slope
133	221100							seems like we're in some substantiak current (down vid looks like fwd)
133	221152						n	voffb - grab - piece of wood got stuck- re do the grab
133	221846							vob - going for a grab - no video or photos
133	221916		SB37-T	2018-018-094			y	voffb - grab
133	224658	grab	NB21g	2018-018-095	clip 614	35m		vob - shells and gravelly sediment
133	224806		NB21g	2018-018-095			y	voffb - grab

133	225706	transect + grab	NB21-T	2018-018-096	clip 615	36m		vob - sand
133								hydroids
133	230640							at the top of the big sandwave
133	230710							flounder and sea robin
133	230930							hydroidd
133	231020							shell hash
133	231312							couple fish fighting the current over this sandwave with us in the down vid
133	232542							sea robin; lots of shells and shell hash
133	232610							moon snail cruised by in the current
133	233130							up on the rise; crepidula and gravelly sediment
133	233314		NB21-T	2018-018-096			y	voffb - grab
133								downloaded photos from down GoPro; vids from fwd GoPro; vids from Odyssey7
								downloaded all the data - backed up to NURTEC and Lacie drives
Monday May 14 2018 JD 134 (all times are UTC)								

134								battery change on GoPros; Nikon and Keldans; we put the strobe back on and it seems to be working. we fitted the 2nd Keldan next to the strobe in case we need to fall back on the down-looking GoPro. If the strobe is working; we will not do the "stop and go" during the transects
134								personnel transfer (Ivar off; Peter on)
134	145408	transect + grab	NB33-T	2018-018-097	clip 616	39m		bouldery with lots of attached algae
134								down video failed on the ORP and the Sony screen (and the feed out to Dann); didn't affect the Odyssey video (so must be a squirrely connecting
134								lots of boulders covered with yellow algae cliona (orange algae cliona to) estrangia; red beard sponge
134	150320							transition from boulders to gravel and cobble and shell hash
134	150530							more small boulders and bigger cobble; more shell hash too
134	151000							just crossed over a low backscatter area; but didn't see any difference of seabed in the video
134	151938		NB33-T	2018-018-097			y	voffb - grab
134	160544	grab	SB52g1	2018-018-098	clip 617	48m		vob - sandy with shell hash, rippled sand - were sitting in the trough of a couple sizeable sand waves
134	160608		SB52g1	2018-018-098				voffb - grab - Roman pointed out the worm tubes (also a cool view in the fwd camera
134	162122	grab	SB52g2	2018-018-099	clip 618	49m		vob - another site in the trough of 2 big sandwaves; rippled sand with shell hash in troughs
134	162234		SB52g2	2018-018-099			y	voffb - grab

								tried to change the strobe but the fresh one didn't fire when hooked in to the SEABOSS (fired ok in the lab with the manual button). Switched
134	164422	transect + grab	SB52-T	2018-018-100	clip 619	45m		vob - sand; on the eastern flank of a large sand dune
134	164544							beginning transect to the t2 site
134	165110							sea robin
134	165720							little subtle sand ridges with piles of shell hash in the low
134	165920							Roman is pointing out worm tubes sticking up out of the sediment
134	165924							good example of the cluster of shell hash - sharp transitions
134	170638							fish in fwd camera
134	170756							crab
134	170936							spider crab
134	171230							skate swam away in down; can see in fwd vid for a little more
134	171732		SB52-T	2018-018-100			y	voffb - grab
134								strobe not working on deck now. we will troubleshoot again after a grab; maybe open them up and swap out the batteries from B to A (seen
134	175638	grab	NB35g	2018-018-101	clip 620	53m		vob - going for a grab - no Nikon photos (no strobe anyway)
134								sand with shell hash

134	175754		NB35g	2018-018-101			y	voffb - grab
134								We tested all the strobes using the Electro pigtail that Peter brought out. All the strobes seem to fire okay so it doesn't seem like any of them are dead (we named the strobes A (the one we've used all morning - the more reliable one on this trip so far); B - tight connection; C - the hidden away one - Dann thinks the connection on this one is loose
134								Dann and I cut the wire on the SEABOSS to strobe thinking the connection to the strobe is bad. We spliced in the pigtail; then adjusted/tightened the cable inside the camera housing; and the strobe is back to working now. Yay!
134	200152	grab	SB59g3	2018-018-102	clip 621	45m		vob - boulders; line; lobster trap
134	200214							transiton to sand
134	200248		SB59g3	2018-018-102			y	voffb - grab
134	201708	grab	SB59g1	2018-018-103	clip 622	59m		vob - boulders; cobble shell hash
134								too cobble-y to grab; asking the bridge to bump us aft a bit
134	202054		SB59g1	2018-018-103			y	voffb - grab
134	203432	transect + grab	SB59-T	2018-018-104	clip 623	45m		vob - coarse sand with lots of shell hash

134	203700						on the flank of big sandwaves; sand ripples with shell hash in the troughs
134	204556						cobble-y patch
134	204630						back to sand and shell hash
134	204640						moon snail
134	204710						skate
134	204850						sea robin
134	204900						we're moving along the crest of a sand ripple for a bit there; sand on one side; gravel and shell hash on the other
134	205050						cluster of ghost lobster pots hung up on an isolated small boulder.
134	205210						getting very gravelly in the troughs
134	205318						we're skirting along the crest of a sand ripple again; gravel on the right side of the video; sand on the left
134	205348						elongate boulder
134							another small boulder
134	205420						bunch of small boulders
134	205440						back into gravel/sand
134	205526						boulders on the sand ripples w/ gravel

134	205814							small boulder/big cobbles clustered among the sand
134	205918		SB59-T	2018-018-104			n	voffb - no grab - attempt - big rock stuck in it. - will clear and regrab
134	210430	grab	SB59-T	2018-018-104				vob - just for a grab - recording the Corros (two and down) but no Odyssey or BR - Chris took a couple pics with the Nikon.
134	210618		SB59-T	2018-018-104			y	voffb - grab
								no strobe again
134	213010	grab	SB63g1	2018-018-105	clip 624	28m		vob - boulders covered with algae
134								one of the Reddan lights must be dying, keeps flashing in the video; shouldn't effect the photos since the strobe is working okay now.
134	213314		SB63g1	2018-018-105			n	voffb - no grab - all boulder down there
134	215024	grab	SB63g1	2018-018-106	clip 625	24m		vob - muddy sand with some small boulders - not sure if we'll get a grab
								asking the bridge to shimmy us to the SE to see if there's something grabable there.
134	215342			2018-018-106				voffb - grab
								downloaded all the data - backed up to NURTEC and Lacie drives
Tuesday May 15 2018 JD 135 (all times are UTC)								
135								strobe seems to be working this AM
135	123712	grab	NL1	2018-018-107	clip 626	17m		vob - gravelly sand some shell hash

135	123744		NL1	2018-018-107			y	voffb - grab
135	124808	grab	NL2	2018-018-108	clip 627	14m		vob - sm boulder cobble gravel
135								algae covered boulders
135	125056							big boulder
135	125300							transition to fewer boulders; mostly coarse sand; going for the grab
135	125330		NL2	2018-018-108				voffb - grab
135								transect next (Roman's station is called T11 to T12 - the brigde was given a different station # (call transect 1))
135	131546	transect + grab	NT1-NT2	2018-018-109	clip 628	18m		vob - gravel with some cobble
135	132128							spider crab
135	132520							boulders as we approach the ridge; rope; astrangia
135	132542							big boulder; cliona; blood star
135	132800							out of the boulders; into gravelly sediment with shell hash
135	132820							sm boulders; cable/line
135	133120							line; boulder
135	133148							small patch of sand ripples around the boulders

135	133400							bottom is a little more cobble-y or coarser gravel
135	133500							sea robin
								strobe seems to be firing weak (see calibration shot)
135	133726		T11-T12	2018-018-109			y	voffb - grab (grab and log calling this T11-T12; ***NOTE the whiteboard says "NT1-NT2"
								Odyssey LTO was a couple seconds ahead again; reset the time on the Odyssey with the GPS time
135	142054	grab	NL4	2018-018-110	clip 629	21m		vob - muddy sand with shell hash
135	142216		NL4	2018-018-110			y	voffb - grab
135	143630	grab	NL5	2018-018-111	clip 630	16m		vob - cobble; boulder; algae
135	143918		NL5	2018-018-111			n	voffb - no grab - too much boulder down there
135	150628		T21-T22	2018-018-112		14m		vob - boulders covered with algae
135	150806							line; giant boulder
	151200							gravelly sand - fewer boulder and cobble; going for a grab here.
135	151300		T21-T22	2018-018-112			y	grab and continuing b/c we're not going to get to the end of the line
135	151400							back to boulders
135	151720							cliona towers among the boulder

135	151828		T21-T22	2018-018-112				voffb - grab-at-151300 ***NOTE: USGS sample has a cobble in it; LDEO is just gravelly sediment
135	161234	transect + grab	SB63-T	2018-018-113	clip 632	17m		vob - algae covered boulders and cobble
135	161600							lots of big boulders - we're moving sideways and crashing into them
135								more big boulders as we head east over this ridge;
135	162240							huge huge boulder
135								heading down the east slope of the ridge 14m to 20m to 30m near the end of the transect
135	162530							hung up on big boulder
135								big boulders with more gravel and cobble between
135								back to piles of boulders
135	163300							more finer sediment between the boulder
135	163520							more fine sediment with cobble and occasional isolated small boulder
135	163802		SB63-T	2018-018-113			n	voffb - no grab - too much sm boulder and cobble down there
135	170048	transect + grab	NB44-T	2018-018-114	clip 633	70m		vob - starting off deep ~70m with a gradual climb to ~50m then steep climb to ~20m
135	170500							muddy sand (or sandy mud) seabed; some shell hash and algae floating by
135	170736							some sort of angular man-made object mostly buried

135	170928							a little gravel and cobble now; couple spider crabs
135	171630							jonah crab?
135	171730							lots of cobble; some sponge covered; several spider crabs
135	171818							sea robin
135	171920							cobbles are getting bigger
135	171950							one of the Keldan lights must be dying; keeps flashing in the video; shouldn't effect the photos.
135	172240							skate; more of the sponge covered cobbles
135	172510							hermit crab in a welk shell
135	172654		NB44-T	2018-018-114			n	voffb - grab
135	174400	grab	NB44g	2018-018-115	clip 634	70m		vob - returning to the same site that we started the NB44 transect at ~70m to get a sediment sample
								turbid and murky - but looks sandy
135	174432		NB44g	2018-018-115			y	voffb - grab
135	181030	grab	NB50-T	2018-018-116	clip 635	64m		vob - gravel and cobble -- too much current (~4knots) to do a transect here; just grab
135								clay mound? Dann is trying a grab; maybe we'll scrape some of it up
135	181214		NB50-T	2018-018-116			y	voffb - grab

135	184418	transect + grab	NB55-T	2018-018-117	clip 636	32m		vob - rippled sand; some shell hash; shells
135	184700							beginning transect to the t1 site
135	185000							hummocky sand with more scattered shell hash
135	185656							sea robin
135	190200							hummocky to rippled sand; shell hash and a gravel in the troughs
135	190620							transition to gravelly sediment
135								then back to hummocky sand
135	191442		NB55-T	2018-018-117			y	voffb - grab - looks like some clay nodules in when we got in close for the grab
								downloaded all the data - will back up to NURTEC and Lacie drives tonight or tomorrow
135	201000							END of SURVEY -- heading back in to Avery Point.
135								
135								
135								
135								
135								

Appendix 3-3: Kraken2 Remotely Operated Vehicle Field Log

1 Ching Loney

5/19/18

Dine Old 1706-

4634 9860

Lex nonglotype, etc

- looking HDG 151

1st pul 1712 45 no. 377 116-6308 date stamp

1566

part nonglotype

HDG 131 for nonglotype, 1/2 kn for last

1714

- Cadet played green

- pulled by RCT

1714

- cadet

- Green light & off road & high

2315

- see some structure in corner

- still have cad (to the)

- Astragalus on rock (dgers)

- Bryozoa

- Lumen

- D. lencidra on top

- red algae

3744

- nonglotype

- Chondrites, right after ladder

3796

blackish Chondrites, right after ladder, long 2 m, 1 m

3842

black Chondrites

red algae ladder

drifts like

3900

bottom large ledge structure, sandy to dsl

3958

Astragalus on bottom ledge

3970

recording change Ductin 2

4138

gypsum ledge

4174

oligoclase

gypsum settled down

4244

2 (lateral) like

4285

bedden

4324

team tension on top of

Astragalus "bulks"

4448

Clay, trying to find out why

4524

gray hel. clon

4549

coming up to deck

CL

5/19/18

Dred

- 193/00 Erythromae back to trans 043
- 3340 Astangia
- 3530 fish
- 3600 black star
- 3700 Cliona
- 3720 fish (198)
- 3830 very solid rock on sand ^{mineral}
- 4151 ^{CL} still has an s ad, not yet sancted, 100 grand it's Buzzone
- 4600 sponge next ← Cliona, D. leucodora, fish, piece of Halictia, dirt ^{fish}
- 4730 ⁱⁿ byzantine hydro
- 5070 black star Cliona tares
- 5800 Dred 01-5
- 20045 ? red crustacean algae (rubra?)
- 0204 Cliona, halictia
- 0331 Cliona, Astangia, Cliona
- 067 Halictia?, green Cliona
- 141000 Hemera, Halictia, pink/orange crustacean algae
- 1525 limy vermetus, bush byzantine
- 1703
- 2015/10 manta boat, off bottom
- 20305 stalked anemone? anemone
- CL, asteria shell
- 3713 Cliona in, feather worm (demon-looking)
- 4145 Astangia / Desmarestia on end
- 4850 Palmaria
- 5000 Astangia Cliona, rock?
- 5609 bushy byzantine
- 5801 ~~black star~~ 3 small greenish spiky, pink orange, ^{red}
- 2100 anemone in dem looking
- 22050 Worm tubes, sea urchins
- 0845 Didemnum?, brown orange spiky
- 1434 byzantine, ^{red} Astangia
- 1515 Astangia (274), Cliona

2

CC

5/9/18

Dre 81

Canon ParaShot 6V

- 1829 Ciana - like ~~egg~~ Sangguta like a g. (Sangguta)
 2244 yellow spore - what? a little more protection
 3830 Katerina - target? (Adm)
 3440 spore Katerina, Ash Spore, many fast
 4740 Ciana
 4903 anemone, Ciana, egg, egg
 5155 byes, anemone, egg, egg, egg, egg
 5641 anemone, Ciana, egg, egg, egg, egg
 5840 new finger / Achyros
 22007 Astreia, anemone, Ciana
 0158 anemone, byes
 0305 trying to get closer to hydrozoans
 Desmone, anemone, hydrozoans, Ciana
 2215 Ciana
 Summary Disc 1 - 170519 - 190635 $\Rightarrow$ 12036
 Disc 2 - 192822 - 192907 $\Rightarrow$ 12
 Disc 3

includes disc $\rightarrow$ Total:

+ the other 4 discs included

Final pic 447 - Final Pic 377 $\rightarrow$ 70 pics

To return $\leftarrow$ orange / brown spores
 dull yellow spore
 hydrozoans
 byes
 target
 rock reef
 anemones

3

CC

28/1/75m

James

6

Dive 2

NB 65

5/20/18

Dive 2 - 001

11 50³⁴

gravel, small green C. fern, broken shells, coarse Siderite, heavily
 'Card-like' brown calcareous drifts, 448 stars
 'hyos/hyos? small to fly (small), tufted), Clava

12 010³⁰

anemone ref 1st sit
 - hemifemur, Dilucida

110³¹

moving 1dm

1415

- Clava, Hald

1630

Hald - P. caly of P. amonax
 - moon snail apocae, C. ferulata
 - large red algae
 - hyosan equist

3444

hyosan/hyosan (tubular?) 2cm

4444

Macoma shell?

5844

none

2653

hose fin lamp Dive 2 - 6

5008

mangrove egg

5611

Clava

5700

Base of corals/Erinace

0238

calling down, fishes out box, solved probe characterized
 plant at bottom

~~1500~~

Dive 3 - 1

SB 71

Notes on (cc)

1520 30

1603 46

getting set-up for transect

0710

L. b. d
 transition, boulder by L. b. d
 green algae, gravel
 1100 hyosan/hyosan,
 algae, L. b. d

1415

macrom
 ditto grey C. ferulata

Dive 3 - 3

1411

seaw

4

5/20/18

Due 3 cont'd.

- 2311 macroalgae SPT
- 2476 macroalgae, rocky
- 2913 detrital part, rocky
- 3136 maddy on
- 3421 rocky
- 4059 mossy lily
- 4730 sea lily
- 5254 ~~macroalgae~~
- 4420 stone / ~~lily~~ F. lily
- 0090 settled down C. formica, baradles
- 0130 fish
- 0322 ~~goby~~ stone

processed
 3 no Mar file cardie
 4 + bedrocks, det. & kb
 but no data is available

Due 4 - SB56 77m PC 674

- 43430 bottom
- 4127 ~~gastropods~~ bottom
- ~~43430~~ Astrangia on boulder
- 20250 starting science
- Due 4
- 25001 hydrob. - long m. m. , Didemnum -
- anemone on, long m. m. ,
- fan long on BS B.
- 3372
- 3444 Agassiz
- 4010 sponge or tunicate
- 4070 ~~lily~~
- 4350 ~~lily~~ Anemone, Cliona
- 4600 may be a Cliona
- 4615 ~~More Proposed Area~~

Due 05 - SB56

- 30358 starting lot 3
- 4015 bottom, bc
- 4100 Larymoria, fish
- 4412 Atl. purple sea urchin (x)

5

CC

5/29/10

Dre 85

- 5105 *Dendium? coral miscol shells* red ~~off~~ *off* coral
 5953 *barrocos? byzans? crawling*
 230426 many
 6050 *thin coral*
 1224 ~~1500~~ *1500? 2 segments? with unchewed 5, 10% 15%*
 2633 *many again, Doleman again*
 2840 *arenaceous* ← *gone as in SE 855*
 3050 *ameres, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100*
 3450 *n*
 3650
 3750 *hate-like fish coral shrimp*
 shrimp
 sponge
 00940 *more mud branch stalks*
 mud branch - *like grass, cylindrical*
 1029 *Cliona atad* ← *transition?* *End of Dre*

Dre

14/12/30 ← *the/ per se stopped on vid, then, the will*
interpretation (12/48 to
 12/48 to

ll
 [Dive 07] 9866

5/21/18

151003 notes start
 2983 bottom 60m
 3004 29m
 3318 strong current
 3840 sea robins
 4218 highly fluorescent, Jacob Creek
 4301 high density of fish
 5155 lobster ↑
 5200 possible Cidaris
 59201 Clione
 Clione + d. d. d.
 16920 Sculpin
 1703 Skate
 1623 Sculpin feeding on bottom ~51m end 1621

[Dive 08] feather issue
 Continue to Dive 08 NB44F-2

2514 Start of work
 3008 bottom 98m, looking current 1622
 3735 encrusting org? sponge moving to West
 4407 Skate egg case
 4835 mac to boulder
 4838 moving to new spot
 4909 family up off bottom
 49 Flander
 17230

CC

(5/22/8)

Labrador, near the shore

Dive 10

SB39 (starting @ SB39-d, sta @ 1629)

120659

Start time, on bottom

0857

sand, many small stones w/ small shell pieces

behind the rock

Lid on under ROV

1708

maneuvering

maneuvering forward

12501

100m small, Lid on

Seal down

bagging out over the side

4501

flounder

4900

hummocky organic matter

shell hash in sand

550

5046

still hummocky sand, org. matter in

105900

feeding / pilocarpus

drift tested

maneuvering / sampling

W3 is pretty rough 2.5

132305

making very noisy and visible

Dive 10

MB20

close to MB20-mid/

151921

clay lenses, C. formicata, red tide

4600

end of Lid on

1740

160150 Vane + C. formicata

170500

50m ROV

17007

Al. fragilis boulder, C. formicata boulder, bygonia

w/ fungus / boulder

Due 11 SB37

2230 organic matter, anemorep, clam (what kind?), lamellae

Chimborazo → volcans

2840 heading out to 1st ptr

learning about "5 spot"

3549 Caryophyllaceae ~~Sp.~~ here in tent notes!

ham + aab 5

Libra X2

hate, in Cifarn

gravel

mac course by log Campbell
in that

3610	redhake
------	---------

522 / Lokantseva

+ negative up debits

46 34

5025 rachate } trough
L. larva }

L. B. M. C.

5946 *Caryocarpa* *hirsuta* (L.)

23d/50 top of the sandstone

2322 Endot, Cany Memphis

3001 and of Longman's again

CC

5/23/18

Die 12 SB45-1

~~Kottens~~

- 101842 nets started down - botany can.
- 2443 moving towards boulder from W. of SB45-1
- 2553
- 3148 @ SB45-1, leading down transect to boulder
- 3451 found boulder fragments
very gracile, still high
Orange sponge
metroidium
- 5400 leathery top, Caprellid behind Cliona tubularis
among Cliona, Tubularia
- 5600 Fish
- 110009 Caprellid + crustacean tubularis
Didemnum stylodonta
- 0530 possible pycnogonid
- 5707 Deep amphipod
- 121710 white sponges
grubby, tubularis w/ sponge
- 122503 ending line, recovery row

11

CC

5/23/18



NB 24

- 1646 07 Shallow water
 crepidula 4th m
 ENE of shipwreck
 small, shallow water
 1653 medium sized weed
 170843 hamlets, getting scarier of weed, still high currents
 170844 debris
 1750 hamlets
 1751 hamlets
 1817 Caten
 2110 many tangled seaweeds, shells, NE of wreck
 2640 anchored
 2722 mid Bell buoy
 180713 1st m. 1st m.
 0813 5 m
 1222 Caten
 181930 because +

Appendix 3-4: Kraken2 Remotely Operated Vehicle Navigation Summary

Note: Complete K2 ROV/Research Vessel Connecticut Navigation Files are available on the LIS Map Web Site and the LDEO LIS Phase II Archive

2018 LIS Mapping Cruise Dive Summary
Dive System ~ Kraken2

<u>Dive</u>	<u>Location</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Launch</u>	<u>Bottom Time (hrs)</u>	<u>Dive Time (hrs)</u>	<u>Max Depth (m)</u>
Dive 01	SB60	N41 16.5309	W072 05.9723	05-19-18 16:54:32.0	5.75	6.00	20.35
Dive 02	NB65	N41 18.2527	W071 54.7845	05-20-18 11:40:25.0	2.33	2.55	31.24
Dive 03	SB71	N41 18.7707	W071 57.5070	05-20-18 15:17:36.0	1.67	2.00	19.78
Dive 04	SB56	N41 15.0753	W072 08.3480	05-20-18 19:29:15.0	1.25	1.62	66.60
Dive 05	SB56	N41 15.0672	W072 08.4502	05-20-18 22:29:17.0	1.58	1.90	63.40
Dive 06	NB42	N41 14.8889	W072 06.6702	05-21-18 11:57:41.0	2.40	2.73	53.40
Dive 07	SB66	N41 14.3486	W072 02.9229	05-21-18 15:18:24.0	0.83	1.13	65.10
Dive 08	NB44	N41 11.9123	W072 04.0194	05-21-18 22:16:57.0	0.42	0.97	98.30
Dive 09	SB39	N41 13.6557	W072 20.8211	05-22-18 11:54:57.0	2.15	2.43	45.00
Dive 10	NB20	N41 13.2833	W072 21.7599	05-22-18 15:08:41.0	2.48	2.73	44.70
Dive 11	SB37	N41 11.5840	W072 23.4180	05-22-18 21:11:59.0	2.53	2.78	48.60
Dive 12	SB45	N41 14.7094	W072 15.8112	05-23-18 10:13:15.0	2.18	2.40	36.10
Dive 13	NB24	N41 11.7684	W072 15.9868	05-23-18 16:40:37.0	1.75	2.13	43.50
					27.32	31.37	98.30

Appendix 3-5: Kraken2 Remotely Operated Vehicle Photo Log

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180519T180511Z.JPG	5/19/18 18:05	Dive01	-72.09941167	41.27542833	-15.026	345	IMG_6321.JPG	-1	SB60	NA	3	3
LISMaRC_Spring2018_ROV_PT_20180519T180852Z.JPG	5/19/18 18:08	Dive01	-72.09935667	41.27543167	-15.104	346.8	IMG_6322.JPG	1	SB60	NA	4	2
LISMaRC_Spring2018_ROV_PT_20180519T193323Z.JPG	5/19/18 19:33	Dive01	-72.09929833	41.275445	-16.827	236.7	IMG_6323.JPG	0	SB60	NA	5	2
LISMaRC_Spring2018_ROV_PT_20180519T193338Z.JPG	5/19/18 19:33	Dive01	-72.099305	41.27543333	-16.749	248.2	IMG_6324.JPG	-1	SB60	NA	5	2
LISMaRC_Spring2018_ROV_PT_20180519T193433Z.JPG	5/19/18 19:34	Dive01	-72.0993	41.27543167	-16.827	209.1	IMG_6325.JPG	0	SB60	NA	5	2
LISMaRC_Spring2018_ROV_PT_20180519T193454Z.JPG	5/19/18 19:34	Dive01	-72.09928333	41.275425	-16.984	227.3	IMG_6326.JPG	-1	SB60	NA	5	2
LISMaRC_Spring2018_ROV_PT_20180519T193525Z.JPG	5/19/18 19:35	Dive01	-72.09926667	41.27541833	-17.062	225.4	IMG_6327.JPG	0	SB60	NA	5	1
LISMaRC_Spring2018_ROV_PT_20180519T193634Z.JPG	5/19/18 19:36	Dive01	-72.09925833	41.27540167	-16.984	222.9	IMG_6328.JPG	-1	SB60	NA	5	2
LISMaRC_Spring2018_ROV_PT_20180519T193808Z.JPG	5/19/18 19:38	Dive01	-72.09908833	41.27538167	-18.629	135.8	IMG_6329.JPG	-1	SB60	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180519T194144Z.JPG	5/19/18 19:41	Dive01	-72.09913667	41.27540833	-18.707	100.2	IMG_6330.JPG	-1	SB60	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180519T194518Z.JPG	5/19/18 19:45	Dive01	-72.09903667	41.275445	-18.55	48.9	IMG_6331.JPG	-1	SB60	NA	5	2
LISMaRC_Spring2018_ROV_PT_20180519T195924Z.JPG	5/19/18 19:59	Dive01	-72.09902333	41.27543833	-17.924	231.2	IMG_6334.JPG	-1	SB60	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180519T200319Z.JPG	5/19/18 20:03	Dive01	-72.09883833	41.27534333	-18.237	121.2	IMG_6335.JPG	0	SB60	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180519T200329Z.JPG	5/19/18 20:03	Dive01	-72.098845	41.27534	-18.472	121.2	IMG_6336.JPG	0	SB60	NA	1	1
LISMaRC_Spring2018_ROV_PT_20180519T201010Z.JPG	5/19/18 20:10	Dive01	-72.09869333	41.27523833	-18.55	222.6	IMG_6340.JPG	-1	SB60	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180519T201200Z.JPG	5/19/18 20:12	Dive01	-72.09865833	41.275165	-18.942	208.4	IMG_6341.JPG	-1	SB60	NA	5	2
LISMaRC_Spring2018_ROV_PT_20180519T203346Z.JPG	5/19/18 20:33	Dive01	-72.09830667	41.27558333	-19.569	250.9	IMG_6344.JPG	-1	SB60	NA	5	0
LISMaRC_Spring2018_ROV_PT_20180519T203404Z.JPG	5/19/18 20:34	Dive01	-72.09830667	41.27558167	-20.195	252.4	IMG_6345.JPG	-1	SB60	NA	5	0
LISMaRC_Spring2018_ROV_PT_20180519T203422Z.JPG	5/19/18 20:34	Dive01	-72.09830667	41.275585	-19.49	252.2	IMG_6346.JPG	-1	SB60	NA	5	0
LISMaRC_Spring2018_ROV_PT_20180519T204605Z.JPG	5/19/18 20:46	Dive01	-72.09828833	41.27558167	-19.647	258.2	IMG_6348.JPG	0	SB60	NA	2	4
LISMaRC_Spring2018_ROV_PT_20180519T204839Z.JPG	5/19/18 20:48	Dive01	-72.098335	41.27556833	-19.804	238.9	IMG_6349.JPG	0	SB60	NA	2	4
LISMaRC_Spring2018_ROV_PT_20180519T211717Z.JPG	5/19/18 21:17	Dive01	-72.09875833	41.275395	-19.255	269.8	IMG_6356.JPG	0	SB60	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180519T213016Z.JPG	5/19/18 21:30	Dive01	-72.09880333	41.27542333	-17.689	263.5	IMG_6358.JPG	-1	SB60	NA	5	3
LISMaRC_Spring2018_ROV_PT_20180519T213021Z.JPG	5/19/18 21:30	Dive01	-72.09880667	41.27542	-17.141	258.4	IMG_6359.JPG	0	SB60	NA	5	1
LISMaRC_Spring2018_ROV_PT_20180519T214131Z.JPG	5/19/18 21:41	Dive01	-72.098855	41.27541833	-17.689	268.7	IMG_6366.JPG	0	SB60	NA	2	4
LISMaRC_Spring2018_ROV_PT_20180519T214735Z.JPG	5/19/18 21:47	Dive01	-72.09903	41.27539	-17.219	240	IMG_6368.JPG	0	SB60	NA	2	4
LISMaRC_Spring2018_ROV_PT_20180519T214821Z.JPG	5/19/18 21:48	Dive01	-72.09902833	41.27539833	-17.219	242.7	IMG_6369.JPG	0	SB60	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180519T220454Z.JPG	5/19/18 22:04	Dive01	-72.099075	41.275405	-18.081	263.8	IMG_6373.JPG	-1	SB60	NA	3	3
LISMaRC_Spring2018_ROV_PT_20180519T220508Z.JPG	5/19/18 22:05	Dive01	-72.09907667	41.27540333	-18.081	263.7	IMG_6374.JPG	-1	SB60	NA	3	3
LISMaRC_Spring2018_ROV_PT_20180519T220543Z.JPG	5/19/18 22:05	Dive01	-72.09907	41.27539667	-18.237	264.5	IMG_6375.JPG	0	SB60	NA	2	3
LISMaRC_Spring2018_ROV_PT_20180519T220601Z.JPG	5/19/18 22:06	Dive01	-72.09907167	41.27537667	-18.237	264.5	IMG_6376.JPG	0	SB60	NA	1	0
LISMaRC_Spring2018_ROV_PT_20180519T171213Z.JPG	5/19/18 17:12	Dive01	-72.09995667	41.27567667	-20.273	147.7	IMG_6308.JPG	-1	NA	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180519T171743Z.JPG	5/19/18 17:17	Dive01	-72.09994667	41.275655	-20.352	116.6	IMG_6309.JPG	-1	NA	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180519T172419Z.JPG	5/19/18 17:24	Dive01	-72.099685	41.27544	-18.785	62.8	IMG_6310.JPG	-1	NA	NA	5	4
LISMaRC_Spring2018_ROV_PT_20180519T172529Z.JPG	5/19/18 17:25	Dive01	-72.09960667	41.27546	-18.081	79.6	IMG_6311.JPG	-1	NA	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180519T173049Z.JPG	5/19/18 17:30	Dive01	-72.099605	41.27545	-18.081	78.2	IMG_6312.JPG	-1	NA	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180519T173137Z.JPG	5/19/18 17:31	Dive01	-72.09960667	41.27545833	-18.315	77.7	IMG_6313.JPG	-1	NA	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180519T173159Z.JPG	5/19/18 17:31	Dive01	-72.099605	41.27545333	-18.002	77.6	IMG_6314.JPG	-1	NA	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180519T174340Z.JPG	5/19/18 17:43	Dive01	-72.099605	41.27543667	-17.376	91.7	IMG_6315.JPG	0	NA	NA	1	0
LISMaRC_Spring2018_ROV_PT_20180519T174449Z.JPG	5/19/18 17:44	Dive01	-72.09959833	41.27544833	-17.846	92.9	IMG_6316.JPG	-1	NA	NA	2	4
LISMaRC_Spring2018_ROV_PT_20180519T175222Z.JPG	5/19/18 17:52	Dive01	-72.099605	41.27543	-17.689	75.3	IMG_6317.JPG	0	NA	NA	2	4
LISMaRC_Spring2018_ROV_PT_20180519T175405Z.JPG	5/19/18 17:54	Dive01	-72.09952833	41.27542333	-16.749	35.2	IMG_6318.JPG	-1	NA	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180519T175442Z.JPG	5/19/18 17:54	Dive01	-72.099525	41.275415	-16.514	34.3	IMG_6319.JPG	0	NA	NA	2	4
LISMaRC_Spring2018_ROV_PT_20180519T175522Z.JPG	5/19/18 17:55	Dive01	-72.09952167	41.275425	-16.749	35.9	IMG_6320.JPG	0	NA	NA	1	0
LISMaRC_Spring2018_ROV_PT_20180519T223829Z.JPG	5/19/18 22:38	Dive01	-72.09955333	41.27537667	-16.436	282.9	IMG_6377.JPG	0	NA	NA		4
LISMaRC_Spring2018_ROV_PT_20180519T223844Z.JPG	5/19/18 22:38	Dive01	-72.09955833	41.27538167	-16.514	283.3	IMG_6378.JPG	-1	NA	NA		4

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180519T195155Z.JPG	5/19/18 19:51	Dive01	-72.09901833	41.27544333	-18.55	48.2	IMG_6332.JPG	0	SB60	NA	1	0
LISMaRC_Spring2018_ROV_PT_20180519T195341Z.JPG	5/19/18 19:53	Dive01	-72.099025	41.27544333	-18.472	47.4	IMG_6333.JPG	0	SB60	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180519T200622Z.JPG	5/19/18 20:06	Dive01	-72.09884833	41.27533	-18.315	124.2	IMG_6338.JPG	-1	SB60	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180519T204537Z.JPG	5/19/18 20:45	Dive01	-72.09828667	41.27558	-19.804	259.2	IMG_6347.JPG	0	SB60	NA	2	1
LISMaRC_Spring2018_ROV_PT_20180519T205502Z.JPG	5/19/18 20:55	Dive01	-72.09853333	41.27545	-19.725	225.1	IMG_6350.JPG	-1	SB60	NA	2	4
LISMaRC_Spring2018_ROV_PT_20180519T205638Z.JPG	5/19/18 20:56	Dive01	-72.098525	41.27543333	-19.804	240.8	IMG_6351.JPG	-1	SB60	NA	2	3
LISMaRC_Spring2018_ROV_PT_20180519T210636Z.JPG	5/19/18 21:06	Dive01	-72.09852833	41.27544167	-19.882	232.6	IMG_6352.JPG	-1	SB60	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180519T210707Z.JPG	5/19/18 21:07	Dive01	-72.09852333	41.275435	-19.569	230.5	IMG_6353.JPG	0	SB60	NA	1	0
LISMaRC_Spring2018_ROV_PT_20180519T211122Z.JPG	5/19/18 21:11	Dive01	-72.09875667	41.27540833	-19.255	271.3	IMG_6354.JPG	-1	SB60	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180519T212206Z.JPG	5/19/18 21:22	Dive01	-72.09876167	41.27540167	-18.942	294	IMG_6357.JPG	-1	SB60	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180519T214207Z.JPG	5/19/18 21:42	Dive01	-72.09885167	41.27540833	-18.002	268.3	IMG_6367.JPG	0	SB60	NA	2	4
LISMaRC_Spring2018_ROV_PT_20180519T215457Z.JPG	5/19/18 21:54	Dive01	-72.09907167	41.275385	-18.472	281.6	IMG_6371.JPG	0	SB60	NA	2	1
LISMaRC_Spring2018_ROV_PT_20180519T220145Z.JPG	5/19/18 22:01	Dive01	-72.09908	41.27536167	-18.394	283.6	IMG_6372.JPG	0	SB60	NA	1	0
LISMaRC_Spring2018_ROV_PT_20180519T200529Z.JPG	5/19/18 20:05	Dive01	-72.09883667	41.27533333	-18.394	126	IMG_6337.JPG	0	SB60	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180519T200658Z.JPG	5/19/18 20:06	Dive01	-72.09886	41.27531833	-18.472	129.2	IMG_6339.JPG	-1	SB60	NA	1	1
LISMaRC_Spring2018_ROV_PT_20180519T202937Z.JPG	5/19/18 20:29	Dive01	-72.09830833	41.27557667	-19.725	260.4	IMG_6342.JPG	0	SB60	NA	2	3
LISMaRC_Spring2018_ROV_PT_20180519T202956Z.JPG	5/19/18 20:29	Dive01	-72.09831	41.27557833	-19.725	260.7	IMG_6343.JPG	-1	SB60	NA	1	0
LISMaRC_Spring2018_ROV_PT_20180519T211658Z.JPG	5/19/18 21:16	Dive01	-72.09875667	41.275395	-19.334	270.8	IMG_6355.JPG	-1	SB60	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180519T213030Z.JPG	5/19/18 21:30	Dive01	-72.098805	41.27541833	-17.611	265.5	IMG_6360.JPG	-1	SB60	NA	2	4
LISMaRC_Spring2018_ROV_PT_20180519T213336Z.JPG	5/19/18 21:33	Dive01	-72.098855	41.27541333	-17.689	267.5	IMG_6361.JPG	-1	SB60	NA	2	4
LISMaRC_Spring2018_ROV_PT_20180519T213407Z.JPG	5/19/18 21:34	Dive01	-72.09885833	41.27541833	-17.767	267.3	IMG_6362.JPG	0	SB60	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180519T213803Z.JPG	5/19/18 21:38	Dive01	-72.09886167	41.27541333	-17.924	267.5	IMG_6363.JPG	0	SB60	NA	2	4
LISMaRC_Spring2018_ROV_PT_20180519T213926Z.JPG	5/19/18 21:39	Dive01	-72.09886	41.27542	-17.846	266.1	IMG_6364.JPG	-1	SB60	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180519T213949Z.JPG	5/19/18 21:39	Dive01	-72.09885833	41.27541667	-18.315	267.6	IMG_6365.JPG	0	SB60	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180519T215451Z.JPG	5/19/18 21:54	Dive01	-72.09907333	41.27539	-18.315	283.5	IMG_6370.JPG	0	SB60	NA	2	1
LISMaRC_Spring2018_ROV_PT_20180520T115659Z.JPG	5/20/18 11:56	Dive02	-71.91257333	41.30381833	-30.768	336.5	IMG_6379.JPG	0	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T115925Z.JPG	5/20/18 11:59	Dive02	-71.912575	41.30381333	-30.768	335.3	IMG_6380.JPG	0	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T115943Z.JPG	5/20/18 11:59	Dive02	-71.91257667	41.303815	-30.925	339	IMG_6381.JPG	0	NA	NA		1
LISMaRC_Spring2018_ROV_PT_20180520T120531Z.JPG	5/20/18 12:05	Dive02	-71.91256667	41.30382	-30.847	337.3	IMG_6382.JPG	0	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T120703Z.JPG	5/20/18 12:07	Dive02	-71.91256833	41.303825	-30.612	332.8	IMG_6383.JPG	0	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T121124Z.JPG	5/20/18 12:11	Dive02	-71.91256833	41.30383333	-30.612	340.3	IMG_6384.JPG	-1	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T121138Z.JPG	5/20/18 12:11	Dive02	-71.91258667	41.30384833	-30.22	346.2	IMG_6385.JPG	-1	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T121312Z.JPG	5/20/18 12:13	Dive02	-71.91263833	41.30390667	-30.925	343.6	IMG_6386.JPG	-1	NA	NA		1
LISMaRC_Spring2018_ROV_PT_20180520T121328Z.JPG	5/20/18 12:13	Dive02	-71.91264333	41.30390667	-30.377	348.7	IMG_6387.JPG	-1	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T121509Z.JPG	5/20/18 12:15	Dive02	-71.91264333	41.30390167	-30.847	342.2	IMG_6388.JPG	0	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T121532Z.JPG	5/20/18 12:15	Dive02	-71.91264667	41.303905	-30.847	343	IMG_6389.JPG	-1	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T121559Z.JPG	5/20/18 12:15	Dive02	-71.91264667	41.30390667	-30.768	348.2	IMG_6390.JPG	0	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T121604Z.JPG	5/20/18 12:16	Dive02	-71.912645	41.30390167	-30.69	345.3	IMG_6391.JPG	-1	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T121648Z.JPG	5/20/18 12:16	Dive02	-71.91264	41.30389667	-30.455	342.1	IMG_6392.JPG	-1	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T121715Z.JPG	5/20/18 12:17	Dive02	-71.912635	41.3039	-30.69	346.4	IMG_6393.JPG	0	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T121740Z.JPG	5/20/18 12:17	Dive02	-71.91264	41.30389833	-30.768	343	IMG_6394.JPG	-1	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T121748Z.JPG	5/20/18 12:17	Dive02	-71.91264333	41.30389833	-30.768	343	IMG_6395.JPG	-1	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T122330Z.JPG	5/20/18 12:23	Dive02	-71.91264333	41.303925	-30.612	349.4	IMG_6396.JPG	-1	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T122352Z.JPG	5/20/18 12:23	Dive02	-71.912655	41.30394333	-30.69	347	IMG_6397.JPG	-1	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T122439Z.JPG	5/20/18 12:24	Dive02	-71.91266667	41.30397667	-30.69	340.6	IMG_6398.JPG	0	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T122522Z.JPG	5/20/18 12:25	Dive02	-71.91267	41.30400333	-30.925	344.4	IMG_6399.JPG	-1	NA	NA		2

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180520T122530Z.JPG	5/20/18 12:25	Dive02	-71.91267667	41.30401167	-31.238	339.3	IMG_6400.JPG	-1	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T122608Z.JPG	5/20/18 12:26	Dive02	-71.91267667	41.30401667	-30.847	340.7	IMG_6401.JPG	-1	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T122617Z.JPG	5/20/18 12:26	Dive02	-71.912675	41.304015	-30.768	343.4	IMG_6402.JPG	0	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T122634Z.JPG	5/20/18 12:26	Dive02	-71.91267667	41.30401667	-31.003	338.5	IMG_6403.JPG	-1	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T122642Z.JPG	5/20/18 12:26	Dive02	-71.91267667	41.30401667	-31.003	338.8	IMG_6404.JPG	-1	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T122737Z.JPG	5/20/18 12:27	Dive02	-71.91268167	41.30401333	-30.612	338.8	IMG_6405.JPG	0	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T122756Z.JPG	5/20/18 12:27	Dive02	-71.912675	41.30401167	-30.768	340.2	IMG_6406.JPG	-1	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T123549Z.JPG	5/20/18 12:35	Dive02	-71.91269	41.30401167	-30.925	343.4	IMG_6407.JPG	0	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T124125Z.JPG	5/20/18 12:41	Dive02	-71.91268333	41.30400833	-30.455	336.6	IMG_6408.JPG	0	NA	NA		0
LISMaRC_Spring2018_ROV_PT_20180520T124157Z.JPG	5/20/18 12:41	Dive02	-71.91269333	41.30402833	-30.533	338.5	IMG_6409.JPG	0	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T124216Z.JPG	5/20/18 12:42	Dive02	-71.91270333	41.30403833	-31.003	348.4	IMG_6410.JPG	-1	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T124233Z.JPG	5/20/18 12:42	Dive02	-71.91270167	41.30405	-30.847	340.9	IMG_6411.JPG	0	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T124247Z.JPG	5/20/18 12:42	Dive02	-71.91271	41.30406167	-30.847	350.7	IMG_6412.JPG	0	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T124308Z.JPG	5/20/18 12:43	Dive02	-71.91271	41.30407	-30.768	342.5	IMG_6413.JPG	-1	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T124328Z.JPG	5/20/18 12:43	Dive02	-71.91272167	41.304085	-31.003	342.8	IMG_6414.JPG	-1	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T124359Z.JPG	5/20/18 12:43	Dive02	-71.91274167	41.30411667	-30.925	342.1	IMG_6415.JPG	0	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T124432Z.JPG	5/20/18 12:44	Dive02	-71.91276167	41.30414667	-30.533	339.3	IMG_6416.JPG	-1	NA	NA		0
LISMaRC_Spring2018_ROV_PT_20180520T124457Z.JPG	5/20/18 12:44	Dive02	-71.91278833	41.30418333	-30.69	353.3	IMG_6417.JPG	0	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T124531Z.JPG	5/20/18 12:45	Dive02	-71.91276833	41.30415167	-30.455	345.4	IMG_6418.JPG	0	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T124544Z.JPG	5/20/18 12:45	Dive02	-71.91277	41.30415667	-30.377	341.1	IMG_6419.JPG	-1	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T124602Z.JPG	5/20/18 12:46	Dive02	-71.912775	41.304175	-30.377	351	IMG_6420.JPG	-1	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T124620Z.JPG	5/20/18 12:46	Dive02	-71.91277667	41.30419333	-30.298	346.5	IMG_6421.JPG	-1	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T124635Z.JPG	5/20/18 12:46	Dive02	-71.91278	41.30420667	-29.985	351.4	IMG_6422.JPG	0	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T124738Z.JPG	5/20/18 12:47	Dive02	-71.91278667	41.30422	-30.298	347.8	IMG_6423.JPG	-1	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T124809Z.JPG	5/20/18 12:48	Dive02	-71.91277667	41.30422333	-30.455	346.2	IMG_6424.JPG	0	NA	NA		0
LISMaRC_Spring2018_ROV_PT_20180520T124942Z.JPG	5/20/18 12:49	Dive02	-71.91277667	41.30422333	-30.298	352.6	IMG_6425.JPG	-1	NA	NA		0
LISMaRC_Spring2018_ROV_PT_20180520T125002Z.JPG	5/20/18 12:50	Dive02	-71.91277833	41.30422667	-30.69	353.2	IMG_6426.JPG	-1	NA	NA		0
LISMaRC_Spring2018_ROV_PT_20180520T125107Z.JPG	5/20/18 12:51	Dive02	-71.91277333	41.30421833	-30.22	354	IMG_6427.JPG	0	NA	NA		1
LISMaRC_Spring2018_ROV_PT_20180520T125127Z.JPG	5/20/18 12:51	Dive02	-71.91278333	41.30421667	-30.298	352.1	IMG_6428.JPG	0	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T125254Z.JPG	5/20/18 12:52	Dive02	-71.91278	41.30422833	-31.003	352.1	IMG_6429.JPG	-1	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T125912Z.JPG	5/20/18 12:59	Dive02	-71.91279333	41.30423	-30.142	357	IMG_6430.JPG	-1	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T125925Z.JPG	5/20/18 12:59	Dive02	-71.91279333	41.30423333	-29.985	358.6	IMG_6431.JPG	0	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T125935Z.JPG	5/20/18 12:59	Dive02	-71.91279167	41.30423667	-29.828	5.2	IMG_6432.JPG	0	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T125942Z.JPG	5/20/18 12:59	Dive02	-71.91279333	41.30424	-30.298	27.6	IMG_6433.JPG	-1	NA	NA		1
LISMaRC_Spring2018_ROV_PT_20180520T130131Z.JPG	5/20/18 13:01	Dive02	-71.91282	41.30428	-30.142	55.2	IMG_6434.JPG	0	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T130158Z.JPG	5/20/18 13:01	Dive02	-71.91282333	41.30427833	-30.142	58.2	IMG_6435.JPG	-1	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T130209Z.JPG	5/20/18 13:02	Dive02	-71.91282667	41.30427833	-30.22	57.9	IMG_6436.JPG	0	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T130513Z.JPG	5/20/18 13:05	Dive02	-71.91282833	41.30427333	-29.828	59.1	IMG_6437.JPG	0	NA	NA		3
LISMaRC_Spring2018_ROV_PT_20180520T130523Z.JPG	5/20/18 13:05	Dive02	-71.91282833	41.30427333	-29.985	58.7	IMG_6438.JPG	0	NA	NA		3
LISMaRC_Spring2018_ROV_PT_20180520T131057Z.JPG	5/20/18 13:10	Dive02	-71.91282833	41.30427833	-29.515	335.5	IMG_6439.JPG	0	NA	NA		1
LISMaRC_Spring2018_ROV_PT_20180520T131134Z.JPG	5/20/18 13:11	Dive02	-71.912805	41.30430167	-29.437	329.5	IMG_6440.JPG	-1	NA	NA		4
LISMaRC_Spring2018_ROV_PT_20180520T131145Z.JPG	5/20/18 13:11	Dive02	-71.91281167	41.304315	-29.515	337.2	IMG_6441.JPG	0	NA	NA		4
LISMaRC_Spring2018_ROV_PT_20180520T131150Z.JPG	5/20/18 13:11	Dive02	-71.91281667	41.30431667	-29.515	338.4	IMG_6442.JPG	-1	NA	NA		4
LISMaRC_Spring2018_ROV_PT_20180520T131207Z.JPG	5/20/18 13:12	Dive02	-71.91283	41.30433	-29.358	335	IMG_6443.JPG	0	NA	NA		4
LISMaRC_Spring2018_ROV_PT_20180520T131242Z.JPG	5/20/18 13:12	Dive02	-71.91282667	41.30434667	-28.967	307.2	IMG_6444.JPG	-1	NA	NA		2
LISMaRC_Spring2018_ROV_PT_20180520T131257Z.JPG	5/20/18 13:12	Dive02	-71.91282667	41.304345	-29.437	306.8	IMG_6445.JPG	0	NA	NA		2

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180520T131822Z.JPG	5/20/18 13:18	Dive02	-71.91290333	41.30439833	-29.124	346.6	IMG_6446.JPG	-1	NA	NA		4
LISMaRC_Spring2018_ROV_PT_20180520T132211Z.JPG	5/20/18 13:22	Dive02	-71.91293333	41.304385	-29.202	347.8	IMG_6447.JPG	0	NA	NA		3
LISMaRC_Spring2018_ROV_PT_20180520T132437Z.JPG	5/20/18 13:24	Dive02	-71.912935	41.30438333	-29.907	348.3	IMG_6448.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T132637Z.JPG	5/20/18 13:26	Dive02	-71.91293167	41.30438333	-28.889	349.9	IMG_6449.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T132737Z.JPG	5/20/18 13:27	Dive02	-71.91295667	41.30439333	-28.575	26.8	IMG_6450.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T132749Z.JPG	5/20/18 13:27	Dive02	-71.91295167	41.30442167	-28.34	32.6	IMG_6451.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T132802Z.JPG	5/20/18 13:28	Dive02	-71.91293667	41.304455	-28.262	52.5	IMG_6452.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T132815Z.JPG	5/20/18 13:28	Dive02	-71.91290833	41.30449667	-28.105	52.6	IMG_6453.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T132839Z.JPG	5/20/18 13:28	Dive02	-71.91288667	41.30452333	-27.401	325.1	IMG_6454.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T132847Z.JPG	5/20/18 13:28	Dive02	-71.91288333	41.30453	-27.635	342.7	IMG_6455.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T132902Z.JPG	5/20/18 13:29	Dive02	-71.91289	41.30454	-27.009	323.3	IMG_6456.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T132913Z.JPG	5/20/18 13:29	Dive02	-71.91288167	41.30454833	-27.635	336.7	IMG_6457.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T132925Z.JPG	5/20/18 13:29	Dive02	-71.91288	41.30455	-27.244	348.1	IMG_6458.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T132941Z.JPG	5/20/18 13:29	Dive02	-71.91288333	41.304555	-27.401	352.8	IMG_6459.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T132950Z.JPG	5/20/18 13:29	Dive02	-71.912885	41.30456333	-27.244	358.3	IMG_6460.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T133000Z.JPG	5/20/18 13:30	Dive02	-71.91289667	41.30457833	-26.852	354.8	IMG_6461.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T133010Z.JPG	5/20/18 13:30	Dive02	-71.9129	41.30458833	-27.322	6.6	IMG_6462.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T133044Z.JPG	5/20/18 13:30	Dive02	-71.91290833	41.30459	-27.166	8.3	IMG_6463.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T133105Z.JPG	5/20/18 13:31	Dive02	-71.91290667	41.30459333	-27.635	7.5	IMG_6464.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T133115Z.JPG	5/20/18 13:31	Dive02	-71.91290833	41.30459667	-27.244	7.6	IMG_6465.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T133126Z.JPG	5/20/18 13:31	Dive02	-71.912905	41.30459833	-27.322	6.6	IMG_6466.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T133137Z.JPG	5/20/18 13:31	Dive02	-71.91290167	41.30459333	-27.479	7.4	IMG_6467.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T133154Z.JPG	5/20/18 13:31	Dive02	-71.91290333	41.30459333	-27.557	13.2	IMG_6468.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T133206Z.JPG	5/20/18 13:32	Dive02	-71.912905	41.30459833	-27.479	11.6	IMG_6469.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T133732Z.JPG	5/20/18 13:37	Dive02	-71.91290333	41.3046	-27.087	13.2	IMG_6470.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T134118Z.JPG	5/20/18 13:41	Dive02	-71.91292833	41.30461167	-27.322	30.4	IMG_6471.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T134221Z.JPG	5/20/18 13:42	Dive02	-71.91293667	41.304605	-27.166	55	IMG_6472.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T134232Z.JPG	5/20/18 13:42	Dive02	-71.91293667	41.30461	-26.931	55.1	IMG_6473.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T134256Z.JPG	5/20/18 13:42	Dive02	-71.91294	41.30461167	-27.087	56.6	IMG_6474.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T134455Z.JPG	5/20/18 13:44	Dive02	-71.91294667	41.304615	-27.244	54.1	IMG_6475.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T134510Z.JPG	5/20/18 13:45	Dive02	-71.91294167	41.304615	-27.322	54	IMG_6476.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T134551Z.JPG	5/20/18 13:45	Dive02	-71.91295833	41.30461833	-27.401	54.8	IMG_6477.JPG	1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T135139Z.JPG	5/20/18 13:51	Dive02	-71.912935	41.30460833	-27.244	30.6	IMG_6478.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T135204Z.JPG	5/20/18 13:52	Dive02	-71.91294833	41.30461	-27.322	50.9	IMG_6479.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T135238Z.JPG	5/20/18 13:52	Dive02	-71.91294667	41.30460333	-27.322	66.3	IMG_6480.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T135314Z.JPG	5/20/18 13:53	Dive02	-71.91295	41.30460833	-27.244	62	IMG_6481.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T135328Z.JPG	5/20/18 13:53	Dive02	-71.91295	41.304615	-26.696	69.3	IMG_6482.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T135348Z.JPG	5/20/18 13:53	Dive02	-71.912955	41.30462333	-27.244	88	IMG_6483.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T135429Z.JPG	5/20/18 13:54	Dive02	-71.91298	41.30462167	-26.304	15.5	IMG_6484.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T135456Z.JPG	5/20/18 13:54	Dive02	-71.91300167	41.30465667	-26.539	27.8	IMG_6485.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T135504Z.JPG	5/20/18 13:55	Dive02	-71.91301	41.30466333	-26.304	352.9	IMG_6486.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T135511Z.JPG	5/20/18 13:55	Dive02	-71.913025	41.30467333	-26.069	353.5	IMG_6487.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T135524Z.JPG	5/20/18 13:55	Dive02	-71.913035	41.30469667	-25.991	355.6	IMG_6488.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T135603Z.JPG	5/20/18 13:56	Dive02	-71.91309667	41.304715	-25.912	16.8	IMG_6489.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T135631Z.JPG	5/20/18 13:56	Dive02	-71.91312	41.304695	-26.774	350.7	IMG_6490.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T135650Z.JPG	5/20/18 13:56	Dive02	-71.91314333	41.30467667	-26.852	351.9	IMG_6491.JPG	-1	NA	NA		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180520T135725Z.JPG	5/20/18 13:57	Dive02	-71.91321667	41.30464	-27.166	33.8	IMG_6492.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T135753Z.JPG	5/20/18 13:57	Dive02	-71.91322333	41.30464667	-27.087	25.5	IMG_6493.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T135851Z.JPG	5/20/18 13:58	Dive02	-71.91323333	41.30464333	-26.931	26.9	IMG_6494.JPG	1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T135952Z.JPG	5/20/18 13:59	Dive02	-71.91321167	41.30465833	-26.617	15.8	IMG_6495.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T140004Z.JPG	5/20/18 14:00	Dive02	-71.91323167	41.304675	-26.461	39.1	IMG_6496.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T140038Z.JPG	5/20/18 14:00	Dive02	-71.91327	41.30469667	-26.382	48.2	IMG_6497.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T140057Z.JPG	5/20/18 14:00	Dive02	-71.91326333	41.3047	-25.834	58.5	IMG_6498.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T140114Z.JPG	5/20/18 14:01	Dive02	-71.91326333	41.30471333	-26.539	58.5	IMG_6499.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T140123Z.JPG	5/20/18 14:01	Dive02	-71.91326833	41.30472167	-26.617	58.5	IMG_6500.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T140137Z.JPG	5/20/18 14:01	Dive02	-71.91326167	41.30472667	-26.539	58.5	IMG_6501.JPG	1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T140157Z.JPG	5/20/18 14:01	Dive02	-71.91326167	41.30472	-26.539	58.5	IMG_6502.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180520T152449Z.JPG	5/20/18 15:24	Dive03	-71.95844783	41.31283867	-19.17	257.12	IMG_6505.JPG	-1	SB71	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180520T160421Z.JPG	5/20/18 16:04	Dive03	-71.958031	41.31309767	-19.69	115.11	IMG_6513.JPG	-1	SB71	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180520T160546Z.JPG	5/20/18 16:05	Dive03	-71.95803567	41.3130935	-19.6	106.93	IMG_6517.JPG	0	SB71	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180520T161410Z.JPG	5/20/18 16:14	Dive03	-71.957848	41.3131715	-19.53	77.79	IMG_6531.JPG	0	SB71	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180520T164740Z.JPG	5/20/18 16:47	Dive03	-71.956951	41.313441	-19.2	100.09	IMG_6587.JPG	0	SB71	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180520T165120Z.JPG	5/20/18 16:51	Dive03	-71.95694283	41.31343767	-19.55	67.35	IMG_6590.JPG	0	SB71	NA	2	3
LISMaRC_Spring2018_ROV_PT_20180520T165734Z.JPG	5/20/18 16:57	Dive03	-71.9566525	41.31360017	-19.4	77.34	IMG_6604.JPG	0	SB71	NA	3	1
LISMaRC_Spring2018_ROV_PT_20180520T152415Z.JPG	5/20/18 15:24	Dive03	-71.95845417	41.3128455	-18.94	257.38	IMG_6503.JPG	-1	SB71	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180520T152439Z.JPG	5/20/18 15:24	Dive03	-71.95845017	41.31283983	-19.01	257.07	IMG_6504.JPG	-1	SB71	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180520T155958Z.JPG	5/20/18 15:59	Dive03	-71.95818167	41.31305483	-19.21	75.48	IMG_6506.JPG	0	SB71	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180520T160027Z.JPG	5/20/18 16:00	Dive03	-71.958144	41.3130555	-19.11	41.12	IMG_6507.JPG	-1	SB71	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180520T160238Z.JPG	5/20/18 16:02	Dive03	-71.9580405	41.313088	-19.65	94.08	IMG_6508.JPG	0	SB71	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180520T160244Z.JPG	5/20/18 16:02	Dive03	-71.9580375	41.31308333	-19.52	93.27	IMG_6509.JPG	0	SB71	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180520T160402Z.JPG	5/20/18 16:04	Dive03	-71.9580365	41.31308117	-19.44	95.37	IMG_6510.JPG	0	SB71	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180520T160409Z.JPG	5/20/18 16:04	Dive03	-71.9580325	41.313086	-19.62	99.56	IMG_6511.JPG	-1	SB71	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180520T160417Z.JPG	5/20/18 16:04	Dive03	-71.95802983	41.31309167	-19.57	115.84	IMG_6512.JPG	-1	SB71	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180520T160459Z.JPG	5/20/18 16:04	Dive03	-71.9580315	41.31309033	-19.71	103.99	IMG_6514.JPG	-1	SB71	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180520T160514Z.JPG	5/20/18 16:05	Dive03	-71.95803333	41.31309467	-19.5	103.59	IMG_6515.JPG	0	SB71	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180520T160531Z.JPG	5/20/18 16:05	Dive03	-71.95803967	41.313097	-19.51	101.68	IMG_6516.JPG	-1	SB71	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180520T160603Z.JPG	5/20/18 16:06	Dive03	-71.95803617	41.313096	-18.94	96.52	IMG_6518.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T160619Z.JPG	5/20/18 16:06	Dive03	-71.9580395	41.31309767	-19.41	103.92	IMG_6519.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T160643Z.JPG	5/20/18 16:06	Dive03	-71.95804117	41.3130985	-19.39	101.84	IMG_6520.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T160754Z.JPG	5/20/18 16:07	Dive03	-71.95802083	41.31310883	-19.33	81.07	IMG_6521.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T160840Z.JPG	5/20/18 16:08	Dive03	-71.95797817	41.31313383	-19.59	77.93	IMG_6522.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T160854Z.JPG	5/20/18 16:08	Dive03	-71.95795583	41.31314417	-19.39	85.93	IMG_6523.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T160941Z.JPG	5/20/18 16:09	Dive03	-71.95788267	41.31316017	-19.5	83.52	IMG_6524.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T160952Z.JPG	5/20/18 16:09	Dive03	-71.9578765	41.31316617	-19.28	83.94	IMG_6525.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T161011Z.JPG	5/20/18 16:10	Dive03	-71.95787283	41.31316917	-19.7	85.14	IMG_6526.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T161315Z.JPG	5/20/18 16:13	Dive03	-71.95788533	41.31315867	-19.54	71.88	IMG_6527.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T161331Z.JPG	5/20/18 16:13	Dive03	-71.95788867	41.31316133	-19.49	68.14	IMG_6528.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T161349Z.JPG	5/20/18 16:13	Dive03	-71.95788083	41.31316267	-19.19	71.88	IMG_6529.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T161359Z.JPG	5/20/18 16:13	Dive03	-71.95786533	41.31316417	-19.27	73.82	IMG_6530.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T161419Z.JPG	5/20/18 16:14	Dive03	-71.9578365	41.313175	-19.63	78.29	IMG_6532.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T161434Z.JPG	5/20/18 16:14	Dive03	-71.95782383	41.3131825	-19.57	76.97	IMG_6533.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T161442Z.JPG	5/20/18 16:14	Dive03	-71.957814	41.31318433	-19.48	84.06	IMG_6534.JPG	0	SB71	NA		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180520T161453Z.JPG	5/20/18 16:14	Dive03	-71.95779817	41.313189	-19.5	87.76	IMG_6535.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T161501Z.JPG	5/20/18 16:15	Dive03	-71.95779117	41.31319467	-19.64	87.01	IMG_6536.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T161510Z.JPG	5/20/18 16:15	Dive03	-71.95778033	41.31320267	-19.64	76.04	IMG_6537.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T161521Z.JPG	5/20/18 16:15	Dive03	-71.95776867	41.31320917	-19.41	88.05	IMG_6538.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T161531Z.JPG	5/20/18 16:15	Dive03	-71.95774917	41.3132105	-19.11	77.94	IMG_6539.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T161613Z.JPG	5/20/18 16:16	Dive03	-71.95769167	41.31323167	-19.48	73.86	IMG_6540.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T161626Z.JPG	5/20/18 16:16	Dive03	-71.95767233	41.31323867	-19.64	75.45	IMG_6541.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T161652Z.JPG	5/20/18 16:16	Dive03	-71.95765133	41.31323983	-19.39	81.01	IMG_6542.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T161659Z.JPG	5/20/18 16:16	Dive03	-71.957646	41.31324117	-19.42	88.08	IMG_6543.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T161708Z.JPG	5/20/18 16:17	Dive03	-71.95763767	41.31324767	-19.42	78.47	IMG_6544.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T161721Z.JPG	5/20/18 16:17	Dive03	-71.9576315	41.31324917	-19.42	77.38	IMG_6545.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T161741Z.JPG	5/20/18 16:17	Dive03	-71.95762433	41.31326217	-19.3	85.16	IMG_6546.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T161756Z.JPG	5/20/18 16:17	Dive03	-71.957616	41.31325833	-19.43	82.42	IMG_6547.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T161845Z.JPG	5/20/18 16:18	Dive03	-71.9575935	41.3132715	-19.42	79.84	IMG_6548.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T161949Z.JPG	5/20/18 16:19	Dive03	-71.9575915	41.31327367	-19.6	71.55	IMG_6549.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T162007Z.JPG	5/20/18 16:20	Dive03	-71.9575905	41.313272	-19.22	74.99	IMG_6550.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T162124Z.JPG	5/20/18 16:21	Dive03	-71.95759267	41.31327167	-19.58	73.23	IMG_6551.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T162233Z.JPG	5/20/18 16:22	Dive03	-71.9575925	41.31326833	-19.78	74.01	IMG_6552.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T162407Z.JPG	5/20/18 16:24	Dive03	-71.95757483	41.31326833	-19.67	79.12	IMG_6553.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T162458Z.JPG	5/20/18 16:24	Dive03	-71.957545	41.313296	-19.41	81.57	IMG_6554.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T162517Z.JPG	5/20/18 16:25	Dive03	-71.95753317	41.313291	-19.27	66.85	IMG_6555.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T162556Z.JPG	5/20/18 16:25	Dive03	-71.95752217	41.3133255	-19.19	75.58	IMG_6556.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T162607Z.JPG	5/20/18 16:26	Dive03	-71.95752567	41.313324	-19.3	77.78	IMG_6557.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T162722Z.JPG	5/20/18 16:27	Dive03	-71.95746	41.3133305	-19.13	80.42	IMG_6558.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T162732Z.JPG	5/20/18 16:27	Dive03	-71.9574455	41.313328	-19.17	77.12	IMG_6559.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T162739Z.JPG	5/20/18 16:27	Dive03	-71.95744017	41.31333133	-18.93	75.36	IMG_6560.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T162748Z.JPG	5/20/18 16:27	Dive03	-71.95742883	41.31333683	-19.09	82.33	IMG_6561.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T162755Z.JPG	5/20/18 16:27	Dive03	-71.95742233	41.31334733	-19.05	85.15	IMG_6562.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T162821Z.JPG	5/20/18 16:28	Dive03	-71.9574	41.31334517	-19.11	87.56	IMG_6563.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T163204Z.JPG	5/20/18 16:32	Dive03	-71.95736217	41.31335767	-19.15	77.67	IMG_6564.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T163232Z.JPG	5/20/18 16:32	Dive03	-71.95731133	41.3133685	-18.99	64.2	IMG_6565.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T163243Z.JPG	5/20/18 16:32	Dive03	-71.95729183	41.313374	-19.16	66.7	IMG_6566.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T163258Z.JPG	5/20/18 16:32	Dive03	-71.95726883	41.31338683	-19.27	77.32	IMG_6567.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T163402Z.JPG	5/20/18 16:34	Dive03	-71.95723517	41.31338983	-19.01	85.55	IMG_6568.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T163417Z.JPG	5/20/18 16:34	Dive03	-71.957236	41.3133925	-19.02	85.81	IMG_6569.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T163518Z.JPG	5/20/18 16:35	Dive03	-71.95724	41.3133905	-19.15	85.4	IMG_6570.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T163532Z.JPG	5/20/18 16:35	Dive03	-71.957239	41.313392	-19.11	83.87	IMG_6571.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T163541Z.JPG	5/20/18 16:35	Dive03	-71.957238	41.3133915	-19.07	86.29	IMG_6572.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T163554Z.JPG	5/20/18 16:35	Dive03	-71.9572345	41.31338933	-19.17	84.31	IMG_6573.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T163606Z.JPG	5/20/18 16:36	Dive03	-71.957233	41.31338917	-19.05	83.25	IMG_6574.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T163615Z.JPG	5/20/18 16:36	Dive03	-71.9572325	41.313391	-19.25	84.73	IMG_6575.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T163629Z.JPG	5/20/18 16:36	Dive03	-71.95723267	41.31339583	-19	82.36	IMG_6576.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T163702Z.JPG	5/20/18 16:37	Dive03	-71.9572375	41.31339367	-18.96	81.73	IMG_6577.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T163713Z.JPG	5/20/18 16:37	Dive03	-71.95723733	41.3133905	-19.24	83.32	IMG_6578.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T163730Z.JPG	5/20/18 16:37	Dive03	-71.95723267	41.31339	-19.22	84.09	IMG_6579.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T164145Z.JPG	5/20/18 16:41	Dive03	-71.957118	41.31342333	-18.67	86.37	IMG_6580.JPG	-1	SB71	NA		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180520T164152Z.JPG	5/20/18 16:41	Dive03	-71.9571095	41.31341867	-18.68	85.48	IMG_6581.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T164315Z.JPG	5/20/18 16:43	Dive03	-71.95703333	41.31342667	-19.79	101.21	IMG_6582.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T164322Z.JPG	5/20/18 16:43	Dive03	-71.95702133	41.31342533	-19.33	93.95	IMG_6583.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T164331Z.JPG	5/20/18 16:43	Dive03	-71.95701383	41.31342067	-19.33	82.76	IMG_6584.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T164349Z.JPG	5/20/18 16:43	Dive03	-71.957001	41.313421	-19.22	87.41	IMG_6585.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T164634Z.JPG	5/20/18 16:46	Dive03	-71.95695983	41.31345333	-19.65	116.37	IMG_6586.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T164805Z.JPG	5/20/18 16:48	Dive03	-71.95695233	41.31343917	-19.26	100.7	IMG_6588.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T165057Z.JPG	5/20/18 16:50	Dive03	-71.9569375	41.31342667	-19.73	63.12	IMG_6589.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T165315Z.JPG	5/20/18 16:53	Dive03	-71.95692233	41.313447	-19.65	61.52	IMG_6591.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T165322Z.JPG	5/20/18 16:53	Dive03	-71.95690767	41.31345567	-19.71	64.34	IMG_6592.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T165340Z.JPG	5/20/18 16:53	Dive03	-71.95688717	41.31346833	-19.49	61.29	IMG_6593.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T165355Z.JPG	5/20/18 16:53	Dive03	-71.95686483	41.31348167	-19.58	68.86	IMG_6594.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T165456Z.JPG	5/20/18 16:54	Dive03	-71.95680767	41.31351033	-19.41	58.28	IMG_6595.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T165507Z.JPG	5/20/18 16:55	Dive03	-71.95679817	41.31351133	-19.32	75.15	IMG_6596.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T165529Z.JPG	5/20/18 16:55	Dive03	-71.9567685	41.313521	-19.57	74.02	IMG_6597.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T165556Z.JPG	5/20/18 16:55	Dive03	-71.95674383	41.31353233	-19.53	80.6	IMG_6598.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T165614Z.JPG	5/20/18 16:56	Dive03	-71.95673233	41.31354383	-19.33	78.66	IMG_6599.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T165625Z.JPG	5/20/18 16:56	Dive03	-71.95672283	41.3135415	-19.6	81.52	IMG_6600.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T165646Z.JPG	5/20/18 16:56	Dive03	-71.95669883	41.31354183	-19.63	76.76	IMG_6601.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T165656Z.JPG	5/20/18 16:56	Dive03	-71.95669617	41.31355483	-19.1	88.99	IMG_6602.JPG	0	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T165707Z.JPG	5/20/18 16:57	Dive03	-71.95668383	41.31356367	-19.22	81.24	IMG_6603.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T170135Z.JPG	5/20/18 17:01	Dive03	-71.9566265	41.31358983	-19.66	87.2	IMG_6605.JPG	-1	SB71	NA		
LISMaRC_Spring2018_ROV_PT_20180520T202251Z.JPG	5/20/18 20:22	Dive04	-72.14049333	41.25065167	-64.054	47.6	IMG_6610.JPG	0	SB56	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180520T202642Z.JPG	5/20/18 20:26	Dive04	-72.140245	41.250665	-64.68	71.5	IMG_6614.JPG	-1	SB56	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180520T203011Z.JPG	5/20/18 20:30	Dive04	-72.14027833	41.25068667	-64.994	70.2	IMG_6617.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T203551Z.JPG	5/20/18 20:35	Dive04	-72.14039833	41.25076667	-64.68	47.8	IMG_6619.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T204719Z.JPG	5/20/18 20:47	Dive04	-72.14028833	41.250865	-64.524	58.3	IMG_6626.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T204940Z.JPG	5/20/18 20:49	Dive04	-72.14021167	41.250875	-66.638	49.3	IMG_6633.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T194201Z.JPG	5/20/18 19:42	Dive04	-72.13999167	41.251235	-64.759	85.7	IMG_6606.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T194212Z.JPG	5/20/18 19:42	Dive04	-72.13997333	41.25123333	-63.741	84.8	IMG_6607.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T194247Z.JPG	5/20/18 19:42	Dive04	-72.139935	41.25118833	-63.036	77.4	IMG_6608.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T202154Z.JPG	5/20/18 20:21	Dive04	-72.14051833	41.25067833	-64.132	46.4	IMG_6609.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T202319Z.JPG	5/20/18 20:23	Dive04	-72.14047667	41.250645	-64.21	50	IMG_6611.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T202442Z.JPG	5/20/18 20:24	Dive04	-72.140445	41.25067333	-64.289	63.7	IMG_6612.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T202459Z.JPG	5/20/18 20:24	Dive04	-72.14042333	41.250685	-64.367	49.7	IMG_6613.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T202709Z.JPG	5/20/18 20:27	Dive04	-72.14025167	41.25066833	-65.072	70	IMG_6615.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T202954Z.JPG	5/20/18 20:29	Dive04	-72.14026833	41.250685	-65.072	71.3	IMG_6616.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T203503Z.JPG	5/20/18 20:35	Dive04	-72.14027833	41.25068167	-63.114	35.1	IMG_6618.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T203708Z.JPG	5/20/18 20:37	Dive04	-72.14039833	41.25076833	-64.367	46.7	IMG_6620.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T203719Z.JPG	5/20/18 20:37	Dive04	-72.14038167	41.25076	-64.132	45.5	IMG_6621.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T204559Z.JPG	5/20/18 20:45	Dive04	-72.14038833	41.25078167	-63.584	66	IMG_6622.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T204637Z.JPG	5/20/18 20:46	Dive04	-72.14033167	41.25080333	-65.542	58.7	IMG_6623.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T204644Z.JPG	5/20/18 20:46	Dive04	-72.14031833	41.25080833	-65.933	64.8	IMG_6624.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T204702Z.JPG	5/20/18 20:47	Dive04	-72.14029167	41.250815	-64.915	32.2	IMG_6625.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T204728Z.JPG	5/20/18 20:47	Dive04	-72.14028833	41.25088	-64.837	55.3	IMG_6627.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T204836Z.JPG	5/20/18 20:48	Dive04	-72.14023833	41.25086167	-65.385	64.4	IMG_6628.JPG	-1	SB56	NA		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180520T204845Z.JPG	5/20/18 20:48	Dive04	-72.14023	41.25086	-66.168	95.2	IMG_6629.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T204855Z.JPG	5/20/18 20:48	Dive04	-72.14022333	41.25086	-66.56	49.6	IMG_6630.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T204916Z.JPG	5/20/18 20:49	Dive04	-72.14021	41.25085833	-66.168	17	IMG_6631.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T204929Z.JPG	5/20/18 20:49	Dive04	-72.14020833	41.250875	-66.717	50.6	IMG_6632.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T204957Z.JPG	5/20/18 20:49	Dive04	-72.14020833	41.250865	-66.482	14.9	IMG_6634.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T205200Z.JPG	5/20/18 20:52	Dive04	-72.14024	41.25072667	-66.482	243.9	IMG_6635.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T224408Z.JPG	5/20/18 22:44	Dive05	-72.139575	41.251205	-57.162	307.4	IMG_6639.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T225252Z.JPG	5/20/18 22:52	Dive05	-72.13956	41.25121	-57.318	274.1	IMG_6646.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T225522Z.JPG	5/20/18 22:55	Dive05	-72.13959	41.25123833	-56.927	301.6	IMG_6650.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T230040Z.JPG	5/20/18 23:00	Dive05	-72.13962333	41.25125333	-57.083	284.3	IMG_6651.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T230057Z.JPG	5/20/18 23:00	Dive05	-72.13963667	41.25125333	-56.927	291.1	IMG_6653.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T230103Z.JPG	5/20/18 23:01	Dive05	-72.13964333	41.25125667	-56.614	289.9	IMG_6654.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T230250Z.JPG	5/20/18 23:02	Dive05	-72.139675	41.25129333	-56.692	266.5	IMG_6658.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T230758Z.JPG	5/20/18 23:07	Dive05	-72.13986833	41.25137667	-62.096	264.1	IMG_6660.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T231817Z.JPG	5/20/18 23:18	Dive05	-72.13985	41.25141833	-63.036	286.4	IMG_6664.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T231836Z.JPG	5/20/18 23:18	Dive05	-72.13985667	41.25143	-62.722	285.6	IMG_6665.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T231940Z.JPG	5/20/18 23:19	Dive05	-72.139895	41.25143667	-63.036	283.4	IMG_6667.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232001Z.JPG	5/20/18 23:20	Dive05	-72.13989333	41.25145167	-63.036	290.6	IMG_6668.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232032Z.JPG	5/20/18 23:20	Dive05	-72.13991667	41.251445	-63.114	293.5	IMG_6670.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232038Z.JPG	5/20/18 23:20	Dive05	-72.13992333	41.25144	-63.271	300.8	IMG_6671.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232104Z.JPG	5/20/18 23:21	Dive05	-72.139935	41.25144	-62.722	298.8	IMG_6675.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232305Z.JPG	5/20/18 23:23	Dive05	-72.14001833	41.25146833	-62.722	318.6	IMG_6683.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232448Z.JPG	5/20/18 23:24	Dive05	-72.14004167	41.251465	-62.722	324.4	IMG_6684.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232858Z.JPG	5/20/18 23:28	Dive05	-72.14022667	41.25154833	-63.427	314.7	IMG_6695.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232921Z.JPG	5/20/18 23:29	Dive05	-72.14022	41.25154667	-63.271	300.2	IMG_6698.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T233247Z.JPG	5/20/18 23:32	Dive05	-72.14024833	41.25159667	-62.879	304.2	IMG_6703.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T233434Z.JPG	5/20/18 23:34	Dive05	-72.14021667	41.25159333	-63.114	302.9	IMG_6710.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T233717Z.JPG	5/20/18 23:37	Dive05	-72.14028833	41.25163333	-62.487	263.2	IMG_6720.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234104Z.JPG	5/20/18 23:41	Dive05	-72.14028	41.251645	-62.018	285.5	IMG_6723.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234134Z.JPG	5/20/18 23:41	Dive05	-72.14029667	41.251655	-61.313	306.8	IMG_6726.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234423Z.JPG	5/20/18 23:44	Dive05	-72.14032833	41.25167667	-60.451	276.5	IMG_6734.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234500Z.JPG	5/20/18 23:45	Dive05	-72.140315	41.25167333	-60.373	269	IMG_6737.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234545Z.JPG	5/20/18 23:45	Dive05	-72.14032833	41.25168833	-60.764	273.4	IMG_6739.JPG	1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234655Z.JPG	5/20/18 23:46	Dive05	-72.14036167	41.25169833	-59.198	292	IMG_6742.JPG	1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234717Z.JPG	5/20/18 23:47	Dive05	-72.14039167	41.25170667	-58.728	303.3	IMG_6747.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234749Z.JPG	5/20/18 23:47	Dive05	-72.14039667	41.251705	-58.571	289	IMG_6752.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234844Z.JPG	5/20/18 23:48	Dive05	-72.14041833	41.25172833	-57.71	288.9	IMG_6759.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235015Z.JPG	5/20/18 23:50	Dive05	-72.14045167	41.251735	-57.475	277	IMG_6770.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235320Z.JPG	5/20/18 23:53	Dive05	-72.14056	41.25175333	-55.909	339.4	IMG_6785.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235459Z.JPG	5/20/18 23:54	Dive05	-72.14057	41.25175167	-55.987	3.9	IMG_6794.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235833Z.JPG	5/20/18 23:58	Dive05	-72.14060333	41.25180333	-56.065	343.1	IMG_6810.JPG	1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000024Z.JPG	5/21/18 00:00	Dive05	-72.14061167	41.25183	-57.083	0.8	IMG_6822.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000234Z.JPG	5/21/18 00:02	Dive05	-72.14068	41.25190667	-57.632	349.2	IMG_6828.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000612Z.JPG	5/21/18 00:06	Dive05	-72.14069833	41.251885	-56.3	331.1	IMG_6843.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000951Z.JPG	5/21/18 00:09	Dive05	-72.14081333	41.25193167	-56.222	321.3	IMG_6858.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T224045Z.JPG	5/20/18 22:40	Dive05	-72.139315	41.251225	-57.24	264.3	IMG_6636.JPG	0	SB56	NA		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180520T224122Z.JPG	5/20/18 22:41	Dive05	-72.13956667	41.25120333	-57.397	304.5	IMG_6637.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T224235Z.JPG	5/20/18 22:42	Dive05	-72.13957	41.25120667	-57.397	301.9	IMG_6638.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T224500Z.JPG	5/20/18 22:45	Dive05	-72.13958333	41.251205	-57.632	291.8	IMG_6640.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T224744Z.JPG	5/20/18 22:47	Dive05	-72.139565	41.25121	-57.71	270.4	IMG_6641.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T225227Z.JPG	5/20/18 22:52	Dive05	-72.13956833	41.25120167	-56.927	262.3	IMG_6642.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T225233Z.JPG	5/20/18 22:52	Dive05	-72.13957167	41.25120333	-57.24	289.9	IMG_6643.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T225239Z.JPG	5/20/18 22:52	Dive05	-72.13953833	41.25119667	-57.397	287.3	IMG_6644.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T225243Z.JPG	5/20/18 22:52	Dive05	-72.13955667	41.251205	-57.318	273.6	IMG_6645.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T225328Z.JPG	5/20/18 22:53	Dive05	-72.1396	41.25122167	-57.318	281	IMG_6647.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T225333Z.JPG	5/20/18 22:53	Dive05	-72.13959833	41.25121833	-57.397	286.9	IMG_6648.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T225345Z.JPG	5/20/18 22:53	Dive05	-72.13959833	41.25121	-57.475	305.5	IMG_6649.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T230050Z.JPG	5/20/18 23:00	Dive05	-72.13963167	41.251255	-57.005	289.9	IMG_6652.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T230115Z.JPG	5/20/18 23:01	Dive05	-72.13964833	41.25125833	-56.535	292.1	IMG_6655.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T230133Z.JPG	5/20/18 23:01	Dive05	-72.13967667	41.25126667	-56.77	286.9	IMG_6656.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T230159Z.JPG	5/20/18 23:01	Dive05	-72.1397	41.25126333	-56.692	289.3	IMG_6657.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T230255Z.JPG	5/20/18 23:02	Dive05	-72.13967	41.25129333	-56.222	268.3	IMG_6659.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T231727Z.JPG	5/20/18 23:17	Dive05	-72.13977167	41.25138	-61.861	276.1	IMG_6661.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T231802Z.JPG	5/20/18 23:18	Dive05	-72.13982833	41.25140167	-63.271	287.1	IMG_6662.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T231807Z.JPG	5/20/18 23:18	Dive05	-72.13983833	41.25140667	-62.957	290.3	IMG_6663.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T231859Z.JPG	5/20/18 23:18	Dive05	-72.13988167	41.251425	-62.957	288.6	IMG_6666.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232023Z.JPG	5/20/18 23:20	Dive05	-72.13991	41.25144833	-63.036	277	IMG_6669.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232048Z.JPG	5/20/18 23:20	Dive05	-72.13993167	41.25143333	-62.879	308.8	IMG_6672.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232053Z.JPG	5/20/18 23:20	Dive05	-72.139935	41.25143167	-63.271	318.2	IMG_6673.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232059Z.JPG	5/20/18 23:20	Dive05	-72.13993333	41.25143833	-63.036	296.4	IMG_6674.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232109Z.JPG	5/20/18 23:21	Dive05	-72.139935	41.25144	-62.409	289	IMG_6676.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232115Z.JPG	5/20/18 23:21	Dive05	-72.13994333	41.25144833	-62.409	296	IMG_6677.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232120Z.JPG	5/20/18 23:21	Dive05	-72.13994667	41.25144833	-62.487	285.8	IMG_6678.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232128Z.JPG	5/20/18 23:21	Dive05	-72.13995667	41.25145333	-62.331	285.2	IMG_6679.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232155Z.JPG	5/20/18 23:21	Dive05	-72.13997667	41.25147333	-62.331	284.2	IMG_6680.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232202Z.JPG	5/20/18 23:22	Dive05	-72.13998333	41.251475	-62.096	294.7	IMG_6681.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232208Z.JPG	5/20/18 23:22	Dive05	-72.13998667	41.25147167	-61.783	312.5	IMG_6682.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232715Z.JPG	5/20/18 23:27	Dive05	-72.140065	41.251485	-62.252	301.9	IMG_6685.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232718Z.JPG	5/20/18 23:27	Dive05	-72.14007167	41.251485	-62.487	312.5	IMG_6686.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232723Z.JPG	5/20/18 23:27	Dive05	-72.14008333	41.251485	-62.331	301.3	IMG_6687.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232736Z.JPG	5/20/18 23:27	Dive05	-72.1401	41.25148833	-62.174	302.4	IMG_6688.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232746Z.JPG	5/20/18 23:27	Dive05	-72.14011333	41.25149833	-62.566	298.7	IMG_6689.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232753Z.JPG	5/20/18 23:27	Dive05	-72.14011333	41.25149833	-62.879	313.7	IMG_6690.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232802Z.JPG	5/20/18 23:28	Dive05	-72.14011333	41.25149833	-62.957	313.7	IMG_6691.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232815Z.JPG	5/20/18 23:28	Dive05	-72.14014667	41.251515	-63.349	296.4	IMG_6692.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232823Z.JPG	5/20/18 23:28	Dive05	-72.140135	41.25150667	-62.957	309.7	IMG_6693.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232830Z.JPG	5/20/18 23:28	Dive05	-72.14017	41.25152	-63.036	302.1	IMG_6694.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232909Z.JPG	5/20/18 23:29	Dive05	-72.14021833	41.251545	-63.506	302.1	IMG_6696.JPG	1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232916Z.JPG	5/20/18 23:29	Dive05	-72.14022167	41.25154833	-63.741	303.1	IMG_6697.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232935Z.JPG	5/20/18 23:29	Dive05	-72.140225	41.25154667	-63.506	317	IMG_6699.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T232946Z.JPG	5/20/18 23:29	Dive05	-72.14023833	41.25154833	-63.036	323.1	IMG_6700.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T233006Z.JPG	5/20/18 23:30	Dive05	-72.140295	41.25157167	-63.349	11	IMG_6701.JPG	-1	SB56	NA		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180520T233149Z.JPG	5/20/18 23:31	Dive05	-72.140285	41.25158	-62.879	304.2	IMG_6702.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T233258Z.JPG	5/20/18 23:32	Dive05	-72.14024333	41.25159167	-63.036	303.6	IMG_6704.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T233316Z.JPG	5/20/18 23:33	Dive05	-72.14022833	41.25157833	-62.957	305.9	IMG_6705.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T233329Z.JPG	5/20/18 23:33	Dive05	-72.140225	41.25157333	-62.801	304.7	IMG_6706.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T233346Z.JPG	5/20/18 23:33	Dive05	-72.14021833	41.25158167	-63.114	306.8	IMG_6707.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T233356Z.JPG	5/20/18 23:33	Dive05	-72.14021	41.251585	-62.801	306.6	IMG_6708.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T233422Z.JPG	5/20/18 23:34	Dive05	-72.14021	41.25159667	-62.801	303.4	IMG_6709.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T233538Z.JPG	5/20/18 23:35	Dive05	-72.14024333	41.25159333	-62.566	294.3	IMG_6711.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T233546Z.JPG	5/20/18 23:35	Dive05	-72.14025167	41.2516	-62.487	283.7	IMG_6712.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T233553Z.JPG	5/20/18 23:35	Dive05	-72.14026167	41.25160333	-62.566	289.6	IMG_6713.JPG	1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T233601Z.JPG	5/20/18 23:36	Dive05	-72.14026	41.25160333	-62.566	301.2	IMG_6714.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T233613Z.JPG	5/20/18 23:36	Dive05	-72.14026833	41.25160667	-62.487	304.4	IMG_6715.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T233627Z.JPG	5/20/18 23:36	Dive05	-72.140265	41.25160833	-62.174	296.9	IMG_6716.JPG	1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T233632Z.JPG	5/20/18 23:36	Dive05	-72.140265	41.25161	-62.331	292.3	IMG_6717.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T233637Z.JPG	5/20/18 23:36	Dive05	-72.14026167	41.25161	-62.252	289.8	IMG_6718.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T233646Z.JPG	5/20/18 23:36	Dive05	-72.140275	41.25161167	-62.331	270	IMG_6719.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234052Z.JPG	5/20/18 23:40	Dive05	-72.14027	41.25164167	-61.548	280.6	IMG_6721.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234058Z.JPG	5/20/18 23:40	Dive05	-72.140275	41.25164333	-61.939	274.7	IMG_6722.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234121Z.JPG	5/20/18 23:41	Dive05	-72.14029333	41.25165333	-61.234	293.5	IMG_6724.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234127Z.JPG	5/20/18 23:41	Dive05	-72.14029667	41.251655	-61.234	298.4	IMG_6725.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234142Z.JPG	5/20/18 23:41	Dive05	-72.14031833	41.25165833	-61.156	317.3	IMG_6727.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234149Z.JPG	5/20/18 23:41	Dive05	-72.14032333	41.25166167	-60.843	304.2	IMG_6728.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234154Z.JPG	5/20/18 23:41	Dive05	-72.14033167	41.25166667	-60.608	298.7	IMG_6729.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234159Z.JPG	5/20/18 23:41	Dive05	-72.140345	41.25167	-60.686	290.2	IMG_6730.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234205Z.JPG	5/20/18 23:42	Dive05	-72.14035333	41.25167167	-60.608	284.3	IMG_6731.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234210Z.JPG	5/20/18 23:42	Dive05	-72.14035167	41.25167167	-60.686	274.3	IMG_6732.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234213Z.JPG	5/20/18 23:42	Dive05	-72.14035167	41.25167333	-60.451	269.6	IMG_6733.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234435Z.JPG	5/20/18 23:44	Dive05	-72.14031667	41.25167167	-60.373	287	IMG_6735.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234453Z.JPG	5/20/18 23:44	Dive05	-72.14031833	41.25166833	-60.451	275.9	IMG_6736.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234509Z.JPG	5/20/18 23:45	Dive05	-72.14031833	41.25167833	-60.451	265.1	IMG_6738.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234552Z.JPG	5/20/18 23:45	Dive05	-72.14033333	41.25168667	-60.608	274.7	IMG_6740.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234647Z.JPG	5/20/18 23:46	Dive05	-72.14035	41.25169333	-59.355	284	IMG_6741.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234700Z.JPG	5/20/18 23:47	Dive05	-72.14036833	41.25169833	-58.806	298.8	IMG_6743.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234704Z.JPG	5/20/18 23:47	Dive05	-72.140375	41.2517	-58.806	295.8	IMG_6744.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234708Z.JPG	5/20/18 23:47	Dive05	-72.14038167	41.25170333	-58.415	293.5	IMG_6745.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234712Z.JPG	5/20/18 23:47	Dive05	-72.140385	41.251705	-58.493	299.3	IMG_6746.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234731Z.JPG	5/20/18 23:47	Dive05	-72.140395	41.25170167	-58.337	294.8	IMG_6748.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234736Z.JPG	5/20/18 23:47	Dive05	-72.140395	41.2517	-58.102	273.7	IMG_6749.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234741Z.JPG	5/20/18 23:47	Dive05	-72.14039167	41.25170167	-58.258	274.7	IMG_6750.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234746Z.JPG	5/20/18 23:47	Dive05	-72.14039167	41.25170333	-58.18	275.7	IMG_6751.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234758Z.JPG	5/20/18 23:47	Dive05	-72.14040167	41.25170833	-58.258	287.8	IMG_6753.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234801Z.JPG	5/20/18 23:48	Dive05	-72.14040333	41.25171	-58.023	289.1	IMG_6754.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234810Z.JPG	5/20/18 23:48	Dive05	-72.14040333	41.25171333	-57.867	285.3	IMG_6755.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234830Z.JPG	5/20/18 23:48	Dive05	-72.14041	41.251725	-57.632	283.8	IMG_6756.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234834Z.JPG	5/20/18 23:48	Dive05	-72.14041167	41.25172667	-58.102	288.3	IMG_6757.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234838Z.JPG	5/20/18 23:48	Dive05	-72.140415	41.25172833	-57.945	288.7	IMG_6758.JPG	0	SB56	NA		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180520T234848Z.JPG	5/20/18 23:48	Dive05	-72.14042167	41.25172833	-57.475	290.5	IMG_6760.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234853Z.JPG	5/20/18 23:48	Dive05	-72.14042167	41.25172833	-57.475	290.7	IMG_6761.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234905Z.JPG	5/20/18 23:49	Dive05	-72.140425	41.25172833	-57.475	296.4	IMG_6762.JPG	1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234908Z.JPG	5/20/18 23:49	Dive05	-72.14042667	41.25172833	-57.475	301.5	IMG_6763.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234913Z.JPG	5/20/18 23:49	Dive05	-72.14043	41.25172667	-57.632	301.5	IMG_6764.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234923Z.JPG	5/20/18 23:49	Dive05	-72.140435	41.25172333	-57.632	327.1	IMG_6765.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234942Z.JPG	5/20/18 23:49	Dive05	-72.14044	41.25171833	-57.24	302.2	IMG_6766.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234954Z.JPG	5/20/18 23:49	Dive05	-72.14043333	41.25172667	-57.318	298	IMG_6767.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T234959Z.JPG	5/20/18 23:49	Dive05	-72.14043333	41.25173167	-57.397	298.3	IMG_6768.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235003Z.JPG	5/20/18 23:50	Dive05	-72.14043667	41.25173167	-57.318	289.3	IMG_6769.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235019Z.JPG	5/20/18 23:50	Dive05	-72.14045333	41.251735	-57.005	276.8	IMG_6771.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235026Z.JPG	5/20/18 23:50	Dive05	-72.14046167	41.25173833	-57.397	279.6	IMG_6772.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235036Z.JPG	5/20/18 23:50	Dive05	-72.14046167	41.251735	-57.162	289.4	IMG_6773.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235040Z.JPG	5/20/18 23:50	Dive05	-72.14046167	41.251735	-56.692	288.7	IMG_6774.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235044Z.JPG	5/20/18 23:50	Dive05	-72.14046833	41.251735	-56.692	277.7	IMG_6775.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235048Z.JPG	5/20/18 23:50	Dive05	-72.140475	41.25173667	-56.222	291.6	IMG_6776.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235051Z.JPG	5/20/18 23:50	Dive05	-72.14048167	41.25174	-56.222	298.4	IMG_6777.JPG	1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235055Z.JPG	5/20/18 23:50	Dive05	-72.140485	41.25174167	-56.065	301.7	IMG_6778.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235108Z.JPG	5/20/18 23:51	Dive05	-72.14048333	41.25174167	-56.535	315.3	IMG_6779.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235126Z.JPG	5/20/18 23:51	Dive05	-72.14048833	41.251735	-55.674	291.1	IMG_6780.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235130Z.JPG	5/20/18 23:51	Dive05	-72.14049667	41.25173833	-55.674	290.2	IMG_6781.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235134Z.JPG	5/20/18 23:51	Dive05	-72.14049833	41.25174	-55.517	288.5	IMG_6782.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235143Z.JPG	5/20/18 23:51	Dive05	-72.14051167	41.25174333	-55.595	287.9	IMG_6783.JPG	1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235148Z.JPG	5/20/18 23:51	Dive05	-72.14051667	41.251745	-55.439	277.9	IMG_6784.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235325Z.JPG	5/20/18 23:53	Dive05	-72.14055833	41.25175333	-55.987	342.1	IMG_6786.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235330Z.JPG	5/20/18 23:53	Dive05	-72.14056	41.25175167	-55.987	333.8	IMG_6787.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235334Z.JPG	5/20/18 23:53	Dive05	-72.14056	41.25175	-55.987	332.6	IMG_6788.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235339Z.JPG	5/20/18 23:53	Dive05	-72.14055833	41.25175	-56.144	336.2	IMG_6789.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235342Z.JPG	5/20/18 23:53	Dive05	-72.14056167	41.25175	-55.987	335.9	IMG_6790.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235349Z.JPG	5/20/18 23:53	Dive05	-72.14056333	41.25175	-56.144	3.9	IMG_6791.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235352Z.JPG	5/20/18 23:53	Dive05	-72.14056333	41.25175	-56.144	359	IMG_6792.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235417Z.JPG	5/20/18 23:54	Dive05	-72.140565	41.25175333	-55.909	355.4	IMG_6793.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235503Z.JPG	5/20/18 23:55	Dive05	-72.14056833	41.25175	-55.83	8.7	IMG_6795.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235533Z.JPG	5/20/18 23:55	Dive05	-72.14055833	41.25174667	-56.065	350.9	IMG_6796.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235611Z.JPG	5/20/18 23:56	Dive05	-72.14056333	41.25175	-55.595	317.2	IMG_6797.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235617Z.JPG	5/20/18 23:56	Dive05	-72.14055667	41.25175167	-55.282	298.4	IMG_6798.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235624Z.JPG	5/20/18 23:56	Dive05	-72.14054	41.25175333	-55.517	302.3	IMG_6799.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235631Z.JPG	5/20/18 23:56	Dive05	-72.14053833	41.25175667	-55.517	303.2	IMG_6800.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235645Z.JPG	5/20/18 23:56	Dive05	-72.14055667	41.25176333	-55.439	301.6	IMG_6801.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235709Z.JPG	5/20/18 23:57	Dive05	-72.14056667	41.25176667	-55.752	302.1	IMG_6802.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235751Z.JPG	5/20/18 23:57	Dive05	-72.14060167	41.25179	-56.144	316.1	IMG_6803.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235757Z.JPG	5/20/18 23:57	Dive05	-72.14060667	41.25179333	-55.909	308.3	IMG_6804.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235806Z.JPG	5/20/18 23:58	Dive05	-72.14060167	41.251795	-55.987	310.3	IMG_6805.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235811Z.JPG	5/20/18 23:58	Dive05	-72.14060167	41.25179667	-56.065	312.3	IMG_6806.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235818Z.JPG	5/20/18 23:58	Dive05	-72.14060333	41.2518	-55.83	304.2	IMG_6807.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235823Z.JPG	5/20/18 23:58	Dive05	-72.14060167	41.2518	-55.674	312.3	IMG_6808.JPG	-1	SB56	NA		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180520T235828Z.JPG	5/20/18 23:58	Dive05	-72.14060333	41.25180333	-55.439	318.6	IMG_6809.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235836Z.JPG	5/20/18 23:58	Dive05	-72.14060167	41.25180333	-55.674	347.2	IMG_6811.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235841Z.JPG	5/20/18 23:58	Dive05	-72.14060167	41.25180167	-56.379	354.5	IMG_6812.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235850Z.JPG	5/20/18 23:58	Dive05	-72.14060833	41.25180167	-56.222	0	IMG_6813.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235858Z.JPG	5/20/18 23:58	Dive05	-72.14060833	41.2518	-56.065	347.8	IMG_6814.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235908Z.JPG	5/20/18 23:59	Dive05	-72.140605	41.25179833	-56.222	350.7	IMG_6815.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235913Z.JPG	5/20/18 23:59	Dive05	-72.14060167	41.25179667	-55.909	340.4	IMG_6816.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235919Z.JPG	5/20/18 23:59	Dive05	-72.14059333	41.251795	-55.909	319.5	IMG_6817.JPG	1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235923Z.JPG	5/20/18 23:59	Dive05	-72.14059	41.251795	-55.987	316.4	IMG_6818.JPG	1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235940Z.JPG	5/20/18 23:59	Dive05	-72.14058833	41.25180167	-55.987	326.2	IMG_6819.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180520T235948Z.JPG	5/20/18 23:59	Dive05	-72.140595	41.25180167	-55.987	326.7	IMG_6820.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000008Z.JPG	5/21/18 00:00	Dive05	-72.1406	41.25180833	-56.692	324.2	IMG_6821.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T0000028Z.JPG	5/21/18 00:00	Dive05	-72.14062	41.25183833	-57.083	0.4	IMG_6823.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000038Z.JPG	5/21/18 00:00	Dive05	-72.14064667	41.25186333	-57.475	355.1	IMG_6824.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000043Z.JPG	5/21/18 00:00	Dive05	-72.14065667	41.25187	-57.318	354.4	IMG_6825.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000123Z.JPG	5/21/18 00:01	Dive05	-72.140695	41.251905	-57.475	353.5	IMG_6826.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000131Z.JPG	5/21/18 00:01	Dive05	-72.14069667	41.25190833	-57.632	349.5	IMG_6827.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000301Z.JPG	5/21/18 00:03	Dive05	-72.14067667	41.25189	-57.553	356.6	IMG_6829.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000311Z.JPG	5/21/18 00:03	Dive05	-72.14067	41.251885	-57.397	355.8	IMG_6830.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000323Z.JPG	5/21/18 00:03	Dive05	-72.140665	41.25187833	-57.553	356.1	IMG_6831.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000345Z.JPG	5/21/18 00:03	Dive05	-72.140675	41.25188333	-57.24	355.4	IMG_6832.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000357Z.JPG	5/21/18 00:03	Dive05	-72.14067167	41.25187667	-57.553	353.7	IMG_6833.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000433Z.JPG	5/21/18 00:04	Dive05	-72.14065667	41.25186333	-57.475	349.7	IMG_6834.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000441Z.JPG	5/21/18 00:04	Dive05	-72.14065333	41.25186667	-57.553	334.4	IMG_6835.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000449Z.JPG	5/21/18 00:04	Dive05	-72.14064333	41.25186667	-57.005	300.4	IMG_6836.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000503Z.JPG	5/21/18 00:05	Dive05	-72.140645	41.25187167	-57.397	290.9	IMG_6837.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000507Z.JPG	5/21/18 00:05	Dive05	-72.140645	41.25187333	-57.005	292	IMG_6838.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000528Z.JPG	5/21/18 00:05	Dive05	-72.14065667	41.25187667	-56.692	288.7	IMG_6839.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000541Z.JPG	5/21/18 00:05	Dive05	-72.14068	41.25188333	-56.222	287.2	IMG_6840.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000546Z.JPG	5/21/18 00:05	Dive05	-72.14068333	41.251885	-56.144	283.3	IMG_6841.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000549Z.JPG	5/21/18 00:05	Dive05	-72.14069	41.25188833	-55.909	283.3	IMG_6842.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000641Z.JPG	5/21/18 00:06	Dive05	-72.14068833	41.25186333	-56.457	322.3	IMG_6844.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000734Z.JPG	5/21/18 00:07	Dive05	-72.140685	41.25186167	-55.987	310.2	IMG_6845.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000739Z.JPG	5/21/18 00:07	Dive05	-72.14069167	41.25186	-55.909	300	IMG_6846.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000743Z.JPG	5/21/18 00:07	Dive05	-72.14069167	41.25186167	-55.674	315.1	IMG_6847.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000751Z.JPG	5/21/18 00:07	Dive05	-72.14069667	41.25186833	-55.282	317.1	IMG_6848.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000755Z.JPG	5/21/18 00:07	Dive05	-72.14070167	41.25187333	-55.595	288.1	IMG_6849.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000800Z.JPG	5/21/18 00:08	Dive05	-72.14070667	41.25188333	-55.595	292.2	IMG_6850.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000807Z.JPG	5/21/18 00:08	Dive05	-72.14071833	41.25188833	-55.36	296.7	IMG_6851.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000818Z.JPG	5/21/18 00:08	Dive05	-72.14075333	41.25189	-55.674	319	IMG_6852.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000822Z.JPG	5/21/18 00:08	Dive05	-72.14076167	41.25188667	-55.909	314.5	IMG_6853.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000831Z.JPG	5/21/18 00:08	Dive05	-72.140775	41.251895	-55.909	309.8	IMG_6854.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000835Z.JPG	5/21/18 00:08	Dive05	-72.140785	41.2519	-56.065	319.6	IMG_6855.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000840Z.JPG	5/21/18 00:08	Dive05	-72.14079333	41.25191167	-55.752	329.6	IMG_6856.JPG	0	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T000943Z.JPG	5/21/18 00:09	Dive05	-72.14081667	41.25193167	-55.909	320	IMG_6857.JPG	-1	SB56	NA		
LISMaRC_Spring2018_ROV_PT_20180521T104517Z.JPG	5/21/18 10:45	Dive06	-72.139565	41.25167167	1.656	288.6	IMG_6859.JPG	4344	SB56	NA		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180521T120914Z.JPG	5/21/18 12:09	Dive06	-72.11008333	41.24814	-50.348	54.8	IMG_6860.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T121043Z.JPG	5/21/18 12:10	Dive06	-72.110235	41.24808167	-50.896	263	IMG_6861.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T121055Z.JPG	5/21/18 12:10	Dive06	-72.11022167	41.24808333	-50.583	256.6	IMG_6862.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T121101Z.JPG	5/21/18 12:11	Dive06	-72.11022	41.24808667	-50.505	257.3	IMG_6863.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T121113Z.JPG	5/21/18 12:11	Dive06	-72.11022333	41.248085	-51.053	257	IMG_6864.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T121200Z.JPG	5/21/18 12:12	Dive06	-72.11024167	41.24808	-50.661	259.4	IMG_6865.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T121207Z.JPG	5/21/18 12:12	Dive06	-72.11024333	41.24808	-50.583	265	IMG_6866.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T121521Z.JPG	5/21/18 12:15	Dive06	-72.11055333	41.24805333	-52.306	265.9	IMG_6869.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T121532Z.JPG	5/21/18 12:15	Dive06	-72.11060667	41.24805667	-52.463	281.5	IMG_6870.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T121541Z.JPG	5/21/18 12:15	Dive06	-72.11065833	41.24806333	-52.463	280.2	IMG_6871.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T121556Z.JPG	5/21/18 12:15	Dive06	-72.110735	41.24808	-52.384	267.9	IMG_6872.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T121605Z.JPG	5/21/18 12:16	Dive06	-72.11077333	41.24809	-52.463	281.5	IMG_6873.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T121614Z.JPG	5/21/18 12:16	Dive06	-72.11077333	41.24809	-52.384	278.4	IMG_6874.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T121635Z.JPG	5/21/18 12:16	Dive06	-72.11086667	41.24809333	-51.914	298	IMG_6875.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T121712Z.JPG	5/21/18 12:17	Dive06	-72.11095	41.248075	-52.698	12.5	IMG_6877.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122558Z.JPG	5/21/18 12:25	Dive06	-72.11089667	41.248065	-52.463	48.9	IMG_6889.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122612Z.JPG	5/21/18 12:26	Dive06	-72.11088333	41.24808	-52.463	42.8	IMG_6890.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122725Z.JPG	5/21/18 12:27	Dive06	-72.11076833	41.24811167	-52.384	346.7	IMG_6898.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122843Z.JPG	5/21/18 12:28	Dive06	-72.11076333	41.24817	-52.541	350.4	IMG_6908.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122904Z.JPG	5/21/18 12:29	Dive06	-72.11078667	41.24818833	-52.228	50.2	IMG_6912.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122908Z.JPG	5/21/18 12:29	Dive06	-72.11079167	41.24819667	-52.463	44.5	IMG_6913.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122913Z.JPG	5/21/18 12:29	Dive06	-72.11079333	41.248205	-52.228	24.4	IMG_6914.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122942Z.JPG	5/21/18 12:29	Dive06	-72.11077	41.24821333	-52.698	9.2	IMG_6917.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122948Z.JPG	5/21/18 12:29	Dive06	-72.110775	41.24821833	-52.306	36.2	IMG_6918.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123015Z.JPG	5/21/18 12:30	Dive06	-72.110755	41.24822833	-52.071	330.7	IMG_6923.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123019Z.JPG	5/21/18 12:30	Dive06	-72.11074167	41.24822667	-51.601	317.8	IMG_6924.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123048Z.JPG	5/21/18 12:30	Dive06	-72.11074	41.24822833	-50.661	351.9	IMG_6931.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123059Z.JPG	5/21/18 12:30	Dive06	-72.11074333	41.24823333	-49.878	2	IMG_6933.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123119Z.JPG	5/21/18 12:31	Dive06	-72.110765	41.248245	-49.095	38.8	IMG_6936.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123124Z.JPG	5/21/18 12:31	Dive06	-72.11077	41.24824667	-49.643	36.3	IMG_6937.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123219Z.JPG	5/21/18 12:32	Dive06	-72.110765	41.24824667	-49.8	9.6	IMG_6939.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123224Z.JPG	5/21/18 12:32	Dive06	-72.11076333	41.248245	-49.8	3.5	IMG_6940.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123238Z.JPG	5/21/18 12:32	Dive06	-72.11075833	41.24825	-49.8	1.5	IMG_6942.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123243Z.JPG	5/21/18 12:32	Dive06	-72.11075333	41.248255	-49.956	353.7	IMG_6943.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123254Z.JPG	5/21/18 12:32	Dive06	-72.110745	41.24825667	-49.643	356.7	IMG_6944.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123548Z.JPG	5/21/18 12:35	Dive06	-72.110745	41.24824167	-49.643	2.2	IMG_6947.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123634Z.JPG	5/21/18 12:36	Dive06	-72.11075833	41.24822	-50.818	5.2	IMG_6951.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123645Z.JPG	5/21/18 12:36	Dive06	-72.11076333	41.24821667	-51.601	22.5	IMG_6952.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123652Z.JPG	5/21/18 12:36	Dive06	-72.110775	41.24821833	-51.836	32.8	IMG_6953.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123715Z.JPG	5/21/18 12:37	Dive06	-72.11080667	41.24822333	-52.541	20.4	IMG_6954.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123942Z.JPG	5/21/18 12:39	Dive06	-72.11080333	41.248215	-52.384	3.6	IMG_6960.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T124005Z.JPG	5/21/18 12:40	Dive06	-72.11081667	41.248225	-51.836	27.9	IMG_6961.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T124013Z.JPG	5/21/18 12:40	Dive06	-72.11083167	41.24823833	-51.679	43.4	IMG_6962.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T124248Z.JPG	5/21/18 12:42	Dive06	-72.11081667	41.24823833	-52.698	13.7	IMG_6965.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T124306Z.JPG	5/21/18 12:43	Dive06	-72.11081	41.248245	-52.384	17.8	IMG_6966.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T124320Z.JPG	5/21/18 12:43	Dive06	-72.11081333	41.248245	-52.776	15.5	IMG_6967.JPG	-1	NA	NB42		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180521T124505Z.JPG	5/21/18 12:45	Dive06	-72.11077333	41.24823333	-50.113	11.7	IMG_6968.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T124511Z.JPG	5/21/18 12:45	Dive06	-72.11076	41.24822833	-50.113	4.2	IMG_6969.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T124521Z.JPG	5/21/18 12:45	Dive06	-72.11073333	41.24822333	-50.348	304.2	IMG_6970.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T124544Z.JPG	5/21/18 12:45	Dive06	-72.11069167	41.24823833	-50.27	301.3	IMG_6971.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T124618Z.JPG	5/21/18 12:46	Dive06	-72.11070333	41.24825333	-50.818	328.8	IMG_6972.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T124631Z.JPG	5/21/18 12:46	Dive06	-72.11071167	41.24825	-51.053	330.7	IMG_6973.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T124703Z.JPG	5/21/18 12:47	Dive06	-72.11072833	41.248285	-50.74	338.3	IMG_6974.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T124713Z.JPG	5/21/18 12:47	Dive06	-72.11073	41.24829333	-50.896	328.2	IMG_6975.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T124719Z.JPG	5/21/18 12:47	Dive06	-72.11073167	41.24829333	-50.975	337.4	IMG_6976.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T124728Z.JPG	5/21/18 12:47	Dive06	-72.11073833	41.24829167	-51.053	330.5	IMG_6977.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T124837Z.JPG	5/21/18 12:48	Dive06	-72.110765	41.248315	-52.149	357.2	IMG_6984.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125526Z.JPG	5/21/18 12:55	Dive06	-72.11064167	41.24846833	-51.836	9.3	IMG_7016.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125531Z.JPG	5/21/18 12:55	Dive06	-72.11064167	41.24846667	-51.914	25.9	IMG_7017.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125541Z.JPG	5/21/18 12:55	Dive06	-72.11063167	41.24847167	-51.601	21.3	IMG_7019.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125935Z.JPG	5/21/18 12:59	Dive06	-72.11059667	41.24852833	-51.131	320.4	IMG_7028.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T130742Z.JPG	5/21/18 13:07	Dive06	-72.11064667	41.24860167	-51.601	183.6	IMG_7046.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T130750Z.JPG	5/21/18 13:07	Dive06	-72.11064667	41.2486	-51.209	159.6	IMG_7047.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T130755Z.JPG	5/21/18 13:07	Dive06	-72.11064167	41.24859833	-50.74	121	IMG_7048.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T130805Z.JPG	5/21/18 13:08	Dive06	-72.11062667	41.24858667	-51.679	90.7	IMG_7049.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T130812Z.JPG	5/21/18 13:08	Dive06	-72.11061333	41.24858	-51.601	55.6	IMG_7050.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T130817Z.JPG	5/21/18 13:08	Dive06	-72.110595	41.248575	-51.444	40.9	IMG_7051.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T131446Z.JPG	5/21/18 13:14	Dive06	-72.11049833	41.248625	-51.523	9.2	IMG_7064.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T131503Z.JPG	5/21/18 13:15	Dive06	-72.11049	41.24862833	-51.601	15.2	IMG_7066.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T131510Z.JPG	5/21/18 13:15	Dive06	-72.110495	41.248635	-51.758	8.9	IMG_7067.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T131519Z.JPG	5/21/18 13:15	Dive06	-72.11050667	41.24864667	-51.758	1.4	IMG_7068.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T131540Z.JPG	5/21/18 13:15	Dive06	-72.1105	41.24865333	-51.993	16	IMG_7069.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T131545Z.JPG	5/21/18 13:15	Dive06	-72.1105	41.24865167	-52.149	21.9	IMG_7070.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T131550Z.JPG	5/21/18 13:15	Dive06	-72.110505	41.24865167	-51.758	32.7	IMG_7071.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T131554Z.JPG	5/21/18 13:15	Dive06	-72.11051167	41.24865667	-51.444	21.4	IMG_7072.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T131600Z.JPG	5/21/18 13:16	Dive06	-72.11051833	41.24866	-51.601	6.4	IMG_7073.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T131605Z.JPG	5/21/18 13:16	Dive06	-72.110525	41.24866333	-51.209	9.5	IMG_7074.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T131617Z.JPG	5/21/18 13:16	Dive06	-72.110525	41.24867	-51.523	20.1	IMG_7075.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T131648Z.JPG	5/21/18 13:16	Dive06	-72.11053333	41.24867333	-51.758	24.6	IMG_7076.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T131816Z.JPG	5/21/18 13:18	Dive06	-72.11054667	41.24867167	-51.758	22.7	IMG_7081.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T132036Z.JPG	5/21/18 13:20	Dive06	-72.11052167	41.24868833	-51.601	348.9	IMG_7085.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T132044Z.JPG	5/21/18 13:20	Dive06	-72.110515	41.24868833	-51.601	356.7	IMG_7086.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T132105Z.JPG	5/21/18 13:21	Dive06	-72.11052333	41.24869333	-51.444	344.4	IMG_7087.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T132113Z.JPG	5/21/18 13:21	Dive06	-72.110525	41.248695	-51.993	350.3	IMG_7088.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T132132Z.JPG	5/21/18 13:21	Dive06	-72.11053	41.24870667	-51.131	334.1	IMG_7091.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T133529Z.JPG	5/21/18 13:35	Dive06	-72.110515	41.24881833	-50.74	21.1	IMG_7114.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T133733Z.JPG	5/21/18 13:37	Dive06	-72.11049833	41.248835	-50.583	10.3	IMG_7122.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T133741Z.JPG	5/21/18 13:37	Dive06	-72.11049667	41.24884	-50.896	22.2	IMG_7123.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T134123Z.JPG	5/21/18 13:41	Dive06	-72.11051667	41.24888667	-50.426	62.9	IMG_7129.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T134127Z.JPG	5/21/18 13:41	Dive06	-72.11051833	41.24888833	-50.426	62.4	IMG_7130.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T134325Z.JPG	5/21/18 13:43	Dive06	-72.11048333	41.24889167	-50.27	63.8	IMG_7135.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T134336Z.JPG	5/21/18 13:43	Dive06	-72.11047667	41.24889167	-50.426	66.4	IMG_7136.JPG	0	NA	NB42		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180521T134349Z.JPG	5/21/18 13:43	Dive06	-72.11047333	41.24889333	-50.426	62.5	IMG_7137.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T134403Z.JPG	5/21/18 13:44	Dive06	-72.110455	41.24889667	-50.661	57.4	IMG_7139.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T134408Z.JPG	5/21/18 13:44	Dive06	-72.11044667	41.2489	-50.583	56.4	IMG_7140.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T134412Z.JPG	5/21/18 13:44	Dive06	-72.11044	41.24890167	-50.583	62.5	IMG_7141.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T134432Z.JPG	5/21/18 13:44	Dive06	-72.11042167	41.248915	-50.583	29.2	IMG_7143.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135012Z.JPG	5/21/18 13:50	Dive06	-72.11040333	41.24892833	-50.113	16.3	IMG_7150.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135026Z.JPG	5/21/18 13:50	Dive06	-72.11039833	41.24893167	-50.348	25.9	IMG_7151.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135106Z.JPG	5/21/18 13:51	Dive06	-72.11039667	41.24894167	-50.348	24.5	IMG_7156.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135250Z.JPG	5/21/18 13:52	Dive06	-72.11034667	41.24900667	-49.956	26.9	IMG_7169.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135258Z.JPG	5/21/18 13:52	Dive06	-72.11034	41.24901167	-49.643	21.1	IMG_7170.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135304Z.JPG	5/21/18 13:53	Dive06	-72.11033333	41.24901667	-49.565	21.9	IMG_7171.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135314Z.JPG	5/21/18 13:53	Dive06	-72.11032833	41.24902	-49.721	14.6	IMG_7172.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135326Z.JPG	5/21/18 13:53	Dive06	-72.11031833	41.24902667	-50.426	4.8	IMG_7174.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135334Z.JPG	5/21/18 13:53	Dive06	-72.11031	41.24903167	-49.878	353.3	IMG_7175.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135351Z.JPG	5/21/18 13:53	Dive06	-72.11029667	41.24904333	-50.191	332.1	IMG_7177.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135359Z.JPG	5/21/18 13:53	Dive06	-72.11029333	41.24904333	-50.191	335.6	IMG_7178.JPG	1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135406Z.JPG	5/21/18 13:54	Dive06	-72.11029667	41.249045	-49.8	354.7	IMG_7179.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135414Z.JPG	5/21/18 13:54	Dive06	-72.11030167	41.24905	-50.035	350.1	IMG_7180.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135422Z.JPG	5/21/18 13:54	Dive06	-72.110305	41.249055	-50.035	341.8	IMG_7181.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135427Z.JPG	5/21/18 13:54	Dive06	-72.110305	41.24905667	-49.565	336.3	IMG_7182.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135432Z.JPG	5/21/18 13:54	Dive06	-72.110305	41.24905833	-49.878	339.4	IMG_7183.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140058Z.JPG	5/21/18 14:00	Dive06	-72.110335	41.24910333	-49.095	26.9	IMG_7198.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140139Z.JPG	5/21/18 14:01	Dive06	-72.11033333	41.24912667	-49.017	41.8	IMG_7203.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140146Z.JPG	5/21/18 14:01	Dive06	-72.110335	41.24913333	-48.547	61.7	IMG_7204.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140158Z.JPG	5/21/18 14:01	Dive06	-72.11034333	41.24914	-48.468	52.4	IMG_7206.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140210Z.JPG	5/21/18 14:02	Dive06	-72.11033333	41.24913667	-48.547	353.5	IMG_7207.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140222Z.JPG	5/21/18 14:02	Dive06	-72.11031167	41.24913167	-48.625	13.2	IMG_7208.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140227Z.JPG	5/21/18 14:02	Dive06	-72.1103	41.24913	-48.468	359.1	IMG_7209.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140256Z.JPG	5/21/18 14:02	Dive06	-72.11028333	41.24913667	-48.86	341.6	IMG_7210.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140619Z.JPG	5/21/18 14:06	Dive06	-72.110265	41.24913667	-48.703	321.2	IMG_7220.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140807Z.JPG	5/21/18 14:08	Dive06	-72.11027333	41.24913167	-48.39	321.7	IMG_7221.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140814Z.JPG	5/21/18 14:08	Dive06	-72.11027167	41.24912833	-48.703	320.6	IMG_7222.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140820Z.JPG	5/21/18 14:08	Dive06	-72.110275	41.249125	-49.173	346.8	IMG_7223.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140826Z.JPG	5/21/18 14:08	Dive06	-72.11028	41.24912667	-48.782	30.2	IMG_7224.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140846Z.JPG	5/21/18 14:08	Dive06	-72.11031	41.24914333	-48.547	63.2	IMG_7225.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140857Z.JPG	5/21/18 14:08	Dive06	-72.11032	41.249145	-48.938	60.7	IMG_7226.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140909Z.JPG	5/21/18 14:09	Dive06	-72.11031333	41.24914	-47.998	39.2	IMG_7227.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140919Z.JPG	5/21/18 14:09	Dive06	-72.1103	41.24913667	-48.703	47.6	IMG_7228.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T141028Z.JPG	5/21/18 14:10	Dive06	-72.11028833	41.24914667	-48.86	49.2	IMG_7234.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T141048Z.JPG	5/21/18 14:10	Dive06	-72.11028833	41.24914667	-48.782	50.4	IMG_7235.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T141743Z.JPG	5/21/18 14:17	Dive06	-72.11027667	41.249175	-48.312	58.8	IMG_7245.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T141749Z.JPG	5/21/18 14:17	Dive06	-72.11027333	41.24917667	-47.92	60.2	IMG_7246.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T141755Z.JPG	5/21/18 14:17	Dive06	-72.11027667	41.24918	-47.372	63.4	IMG_7247.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T141822Z.JPG	5/21/18 14:18	Dive06	-72.11026667	41.24919167	-47.842	118.6	IMG_7248.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T141854Z.JPG	5/21/18 14:18	Dive06	-72.1102	41.24917833	-48.233	353.8	IMG_7249.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T141907Z.JPG	5/21/18 14:19	Dive06	-72.11017333	41.24917833	-47.842	309.6	IMG_7250.JPG	-1	NA	NB42		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180521T141944Z.JPG	5/21/18 14:19	Dive06	-72.11018	41.24921167	-47.763	268.9	IMG_7251.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T142132Z.JPG	5/21/18 14:21	Dive06	-72.11020333	41.24921333	-47.998	271.9	IMG_7261.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T142146Z.JPG	5/21/18 14:21	Dive06	-72.110205	41.24921333	-48.155	272.3	IMG_7262.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T142151Z.JPG	5/21/18 14:21	Dive06	-72.110205	41.24921167	-47.842	271.3	IMG_7263.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T142516Z.JPG	5/21/18 14:25	Dive06	-72.11020833	41.24921167	-47.528	273.2	IMG_7270.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T121219Z.JPG	5/21/18 12:12	Dive06	-72.11024833	41.24808167	-50.661	275.4	IMG_6867.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T121304Z.JPG	5/21/18 12:13	Dive06	-72.11024667	41.24808333	-50.583	275.2	IMG_6868.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T121640Z.JPG	5/21/18 12:16	Dive06	-72.1109	41.24810333	-52.149	316.4	IMG_6876.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T121747Z.JPG	5/21/18 12:17	Dive06	-72.11095167	41.24807167	-53.167	43.1	IMG_6878.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T121928Z.JPG	5/21/18 12:19	Dive06	-72.11095833	41.24806667	-53.246	41.8	IMG_6881.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122131Z.JPG	5/21/18 12:21	Dive06	-72.11089167	41.24806	-53.246	45.7	IMG_6883.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122246Z.JPG	5/21/18 12:22	Dive06	-72.11089833	41.24806333	-53.089	44.5	IMG_6884.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122428Z.JPG	5/21/18 12:24	Dive06	-72.1109	41.24805667	-53.089	44.9	IMG_6886.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122453Z.JPG	5/21/18 12:24	Dive06	-72.11089833	41.248055	-52.698	45.6	IMG_6887.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122748Z.JPG	5/21/18 12:27	Dive06	-72.11076333	41.24814333	-52.854	352.8	IMG_6902.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122753Z.JPG	5/21/18 12:27	Dive06	-72.11077167	41.24815	-52.698	359.2	IMG_6903.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122838Z.JPG	5/21/18 12:28	Dive06	-72.11077	41.24816833	-52.698	348.7	IMG_6907.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122859Z.JPG	5/21/18 12:28	Dive06	-72.110775	41.24818167	-52.384	33.9	IMG_6911.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122925Z.JPG	5/21/18 12:29	Dive06	-72.11077833	41.24821167	-52.698	8	IMG_6915.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123002Z.JPG	5/21/18 12:30	Dive06	-72.11078167	41.24822833	-51.993	22.5	IMG_6921.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123029Z.JPG	5/21/18 12:30	Dive06	-72.11072333	41.248225	-51.131	341.1	IMG_6926.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123041Z.JPG	5/21/18 12:30	Dive06	-72.11073	41.24822667	-50.975	355.1	IMG_6929.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123103Z.JPG	5/21/18 12:31	Dive06	-72.11074833	41.24823833	-49.8	9.4	IMG_6934.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123303Z.JPG	5/21/18 12:33	Dive06	-72.11073333	41.24823833	-49.878	351.9	IMG_6945.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123834Z.JPG	5/21/18 12:38	Dive06	-72.11080167	41.24821833	-52.776	11.2	IMG_6957.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123859Z.JPG	5/21/18 12:38	Dive06	-72.110805	41.24821667	-52.933	14.1	IMG_6959.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T124039Z.JPG	5/21/18 12:40	Dive06	-72.11082667	41.248245	-53.011	17.6	IMG_6963.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T124831Z.JPG	5/21/18 12:48	Dive06	-72.110765	41.24831	-52.149	1.3	IMG_6983.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T124958Z.JPG	5/21/18 12:49	Dive06	-72.11077333	41.24836833	-52.228	20.5	IMG_6989.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125339Z.JPG	5/21/18 12:53	Dive06	-72.11071	41.248425	-51.758	34.6	IMG_7002.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125521Z.JPG	5/21/18 12:55	Dive06	-72.11064333	41.24847	-51.914	11.9	IMG_7015.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125628Z.JPG	5/21/18 12:56	Dive06	-72.11059833	41.24849667	-51.601	336.5	IMG_7023.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T130246Z.JPG	5/21/18 13:02	Dive06	-72.11064333	41.24861833	-51.288	184.1	IMG_7035.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T130410Z.JPG	5/21/18 13:04	Dive06	-72.11062833	41.24861667	-51.679	177.6	IMG_7038.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T130436Z.JPG	5/21/18 13:04	Dive06	-72.11063333	41.248615	-51.444	184.1	IMG_7040.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T130501Z.JPG	5/21/18 13:05	Dive06	-72.11063333	41.24860833	-51.366	178.4	IMG_7042.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T130539Z.JPG	5/21/18 13:05	Dive06	-72.11064	41.24862667	-51.209	178.1	IMG_7044.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T130915Z.JPG	5/21/18 13:09	Dive06	-72.11053333	41.2486	-51.836	61.4	IMG_7053.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T130923Z.JPG	5/21/18 13:09	Dive06	-72.11053333	41.2486	-51.601	61	IMG_7054.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T130931Z.JPG	5/21/18 13:09	Dive06	-72.11053333	41.248605	-51.523	61.5	IMG_7055.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T130946Z.JPG	5/21/18 13:09	Dive06	-72.110535	41.24860833	-51.758	61	IMG_7056.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T130957Z.JPG	5/21/18 13:09	Dive06	-72.11053167	41.24860833	-51.288	63.1	IMG_7057.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T131010Z.JPG	5/21/18 13:10	Dive06	-72.11052833	41.24860833	-51.523	62.1	IMG_7058.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T131028Z.JPG	5/21/18 13:10	Dive06	-72.110535	41.24861667	-51.679	62.3	IMG_7059.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T131036Z.JPG	5/21/18 13:10	Dive06	-72.110535	41.24862167	-51.523	60.1	IMG_7060.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T131046Z.JPG	5/21/18 13:10	Dive06	-72.11053167	41.24862667	-51.758	59.9	IMG_7061.JPG	-1	NA	NB42		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180521T131058Z.JPG	5/21/18 13:10	Dive06	-72.11053167	41.24862667	-51.758	62.7	IMG_7062.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T131657Z.JPG	5/21/18 13:16	Dive06	-72.11053167	41.24867167	-51.836	24.6	IMG_7077.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T131752Z.JPG	5/21/18 13:17	Dive06	-72.11054833	41.24867333	-51.836	19.7	IMG_7080.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T131837Z.JPG	5/21/18 13:18	Dive06	-72.11054167	41.24867833	-51.758	25	IMG_7082.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T131937Z.JPG	5/21/18 13:19	Dive06	-72.11054167	41.24867333	-51.836	24	IMG_7083.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T132412Z.JPG	5/21/18 13:24	Dive06	-72.11052833	41.24875667	-50.74	315	IMG_7102.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T132505Z.JPG	5/21/18 13:25	Dive06	-72.110545	41.24875833	-50.896	316.8	IMG_7104.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T132821Z.JPG	5/21/18 13:28	Dive06	-72.11055333	41.248755	-51.053	326.3	IMG_7108.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T133226Z.JPG	5/21/18 13:32	Dive06	-72.11053167	41.24881667	-50.896	19.7	IMG_7110.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T133549Z.JPG	5/21/18 13:35	Dive06	-72.11052167	41.24881167	-50.661	20.1	IMG_7116.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T133940Z.JPG	5/21/18 13:39	Dive06	-72.11051333	41.24888167	-50.661	65.9	IMG_7124.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T134003Z.JPG	5/21/18 13:40	Dive06	-72.11051	41.24888667	-50.348	67.7	IMG_7126.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T134039Z.JPG	5/21/18 13:40	Dive06	-72.11050833	41.24888167	-50.896	66.8	IMG_7128.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T134210Z.JPG	5/21/18 13:42	Dive06	-72.11050333	41.24889167	-50.426	67.8	IMG_7132.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T134542Z.JPG	5/21/18 13:45	Dive06	-72.11039333	41.248925	-50.74	15.3	IMG_7146.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T134619Z.JPG	5/21/18 13:46	Dive06	-72.110395	41.24893167	-50.426	17.8	IMG_7147.JPG	1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T134903Z.JPG	5/21/18 13:49	Dive06	-72.11041833	41.24891667	-50.583	15.2	IMG_7148.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135242Z.JPG	5/21/18 13:52	Dive06	-72.11035167	41.24900167	-50.035	19.6	IMG_7168.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135649Z.JPG	5/21/18 13:56	Dive06	-72.110315	41.2491	-49.956	13.9	IMG_7194.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135708Z.JPG	5/21/18 13:57	Dive06	-72.11033	41.24910167	-49.956	14.2	IMG_7195.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135719Z.JPG	5/21/18 13:57	Dive06	-72.11033667	41.24909333	-49.8	15.1	IMG_7196.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135742Z.JPG	5/21/18 13:57	Dive06	-72.11033	41.24909667	-49.721	19.1	IMG_7197.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140549Z.JPG	5/21/18 14:05	Dive06	-72.110275	41.249135	-49.017	320.1	IMG_7217.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140949Z.JPG	5/21/18 14:09	Dive06	-72.110285	41.249155	-48.625	49.5	IMG_7231.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T141012Z.JPG	5/21/18 14:10	Dive06	-72.11029	41.249155	-48.782	46.7	IMG_7233.JPG	0	NA	NB42	1	2
LISMaRC_Spring2018_ROV_PT_20180521T141645Z.JPG	5/21/18 14:16	Dive06	-72.110275	41.24917667	-48.625	47.9	IMG_7242.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T142037Z.JPG	5/21/18 14:20	Dive06	-72.11020333	41.24922667	-47.528	271.8	IMG_7255.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T142203Z.JPG	5/21/18 14:22	Dive06	-72.11020667	41.24921	-48.155	272	IMG_7264.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T142433Z.JPG	5/21/18 14:24	Dive06	-72.1102	41.24922667	-48.155	271.3	IMG_7267.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T142531Z.JPG	5/21/18 14:25	Dive06	-72.11021	41.24921167	-48.077	272.5	IMG_7272.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T121815Z.JPG	5/21/18 12:18	Dive06	-72.11094667	41.24806833	-53.324	45.4	IMG_6879.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T121834Z.JPG	5/21/18 12:18	Dive06	-72.110955	41.24806667	-53.402	47.3	IMG_6880.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T121950Z.JPG	5/21/18 12:19	Dive06	-72.11094667	41.24806167	-53.324	44.3	IMG_6882.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122339Z.JPG	5/21/18 12:23	Dive06	-72.11091333	41.24806333	-53.324	42.2	IMG_6885.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122551Z.JPG	5/21/18 12:25	Dive06	-72.110895	41.24805833	-52.541	41.8	IMG_6888.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122624Z.JPG	5/21/18 12:26	Dive06	-72.11086667	41.24809	-52.854	33.6	IMG_6891.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122631Z.JPG	5/21/18 12:26	Dive06	-72.110855	41.24808667	-53.011	32.6	IMG_6892.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122639Z.JPG	5/21/18 12:26	Dive06	-72.11084	41.248085	-53.089	7.8	IMG_6893.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122648Z.JPG	5/21/18 12:26	Dive06	-72.11084	41.248085	-52.854	2.7	IMG_6894.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122654Z.JPG	5/21/18 12:26	Dive06	-72.11081833	41.24809	-53.089	3.5	IMG_6895.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122659Z.JPG	5/21/18 12:26	Dive06	-72.11080667	41.248095	-52.776	346.5	IMG_6896.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122717Z.JPG	5/21/18 12:27	Dive06	-72.110775	41.248105	-52.854	332.1	IMG_6897.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122731Z.JPG	5/21/18 12:27	Dive06	-72.11075833	41.24811667	-52.619	336.9	IMG_6899.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122738Z.JPG	5/21/18 12:27	Dive06	-72.110755	41.24813	-52.776	335.3	IMG_6900.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122743Z.JPG	5/21/18 12:27	Dive06	-72.11076	41.24813833	-52.541	353.7	IMG_6901.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122800Z.JPG	5/21/18 12:28	Dive06	-72.11077833	41.24815	-52.698	2.5	IMG_6904.JPG	-1	NA	NB42		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180521T122823Z.JPG	5/21/18 12:28	Dive06	-72.11078333	41.24816167	-52.933	357.6	IMG_6905.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122829Z.JPG	5/21/18 12:28	Dive06	-72.11077833	41.24816667	-52.228	347.1	IMG_6906.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122848Z.JPG	5/21/18 12:28	Dive06	-72.110765	41.24817	-52.541	21.9	IMG_6909.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122853Z.JPG	5/21/18 12:28	Dive06	-72.11077	41.24817667	-52.071	37.9	IMG_6910.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122931Z.JPG	5/21/18 12:29	Dive06	-72.110775	41.24821333	-52.619	2.6	IMG_6916.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122954Z.JPG	5/21/18 12:29	Dive06	-72.11078167	41.24822333	-51.914	49.9	IMG_6919.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T122958Z.JPG	5/21/18 12:29	Dive06	-72.11078	41.24822667	-51.993	34.8	IMG_6920.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123011Z.JPG	5/21/18 12:30	Dive06	-72.11076667	41.24823167	-51.601	341.8	IMG_6922.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123024Z.JPG	5/21/18 12:30	Dive06	-72.11072833	41.24822667	-51.993	328.2	IMG_6925.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123033Z.JPG	5/21/18 12:30	Dive06	-72.11072333	41.248225	-51.366	348.1	IMG_6927.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123038Z.JPG	5/21/18 12:30	Dive06	-72.11072333	41.248225	-51.209	356.7	IMG_6928.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123045Z.JPG	5/21/18 12:30	Dive06	-72.11073667	41.24822833	-50.74	357.5	IMG_6930.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123051Z.JPG	5/21/18 12:30	Dive06	-72.11074167	41.24823	-50.113	345.4	IMG_6932.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123107Z.JPG	5/21/18 12:31	Dive06	-72.11075167	41.24823833	-49.721	23	IMG_6935.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123205Z.JPG	5/21/18 12:32	Dive06	-72.11076333	41.24825167	-49.956	9.1	IMG_6938.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123231Z.JPG	5/21/18 12:32	Dive06	-72.11076	41.24824333	-49.8	353.6	IMG_6941.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123318Z.JPG	5/21/18 12:33	Dive06	-72.11074	41.24824667	-49.643	350.9	IMG_6946.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123605Z.JPG	5/21/18 12:36	Dive06	-72.11076833	41.24824	-49.643	34.9	IMG_6948.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123613Z.JPG	5/21/18 12:36	Dive06	-72.11077333	41.24823833	-50.27	29.2	IMG_6949.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123621Z.JPG	5/21/18 12:36	Dive06	-72.11077333	41.24823333	-49.956	13.8	IMG_6950.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123733Z.JPG	5/21/18 12:37	Dive06	-72.11081167	41.24821167	-53.089	9.8	IMG_6955.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123823Z.JPG	5/21/18 12:38	Dive06	-72.11080333	41.24821333	-52.854	11.5	IMG_6956.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T123844Z.JPG	5/21/18 12:38	Dive06	-72.11080333	41.24821667	-52.776	11.2	IMG_6958.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T124218Z.JPG	5/21/18 12:42	Dive06	-72.110825	41.24824167	-52.698	13.5	IMG_6964.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T124738Z.JPG	5/21/18 12:47	Dive06	-72.11074167	41.24829333	-51.209	331.5	IMG_6978.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T124803Z.JPG	5/21/18 12:48	Dive06	-72.11076167	41.24831167	-51.758	353.7	IMG_6979.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T124810Z.JPG	5/21/18 12:48	Dive06	-72.11076333	41.24831333	-51.993	351.2	IMG_6980.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T124817Z.JPG	5/21/18 12:48	Dive06	-72.11076333	41.24830833	-51.758	349.9	IMG_6981.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T124825Z.JPG	5/21/18 12:48	Dive06	-72.110765	41.24830667	-51.914	359.3	IMG_6982.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T124842Z.JPG	5/21/18 12:48	Dive06	-72.11076333	41.24831667	-51.836	10.4	IMG_6985.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T124849Z.JPG	5/21/18 12:48	Dive06	-72.11076667	41.24832833	-51.993	20.2	IMG_6986.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T124900Z.JPG	5/21/18 12:49	Dive06	-72.11077667	41.24834	-52.228	21	IMG_6987.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T124914Z.JPG	5/21/18 12:49	Dive06	-72.11078167	41.24835	-52.149	23.3	IMG_6988.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125013Z.JPG	5/21/18 12:50	Dive06	-72.11075833	41.24837333	-52.463	25.6	IMG_6990.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125141Z.JPG	5/21/18 12:51	Dive06	-72.11074167	41.24839167	-51.758	20.4	IMG_6991.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125149Z.JPG	5/21/18 12:51	Dive06	-72.11073833	41.24838667	-51.914	9.6	IMG_6992.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125202Z.JPG	5/21/18 12:52	Dive06	-72.11073167	41.248385	-51.993	16.2	IMG_6993.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125207Z.JPG	5/21/18 12:52	Dive06	-72.11072833	41.24838833	-52.071	14	IMG_6994.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125222Z.JPG	5/21/18 12:52	Dive06	-72.11073	41.24839333	-52.306	21.2	IMG_6995.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125242Z.JPG	5/21/18 12:52	Dive06	-72.11072167	41.2484	-51.836	22.1	IMG_6996.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125250Z.JPG	5/21/18 12:52	Dive06	-72.11072	41.24840667	-51.758	24.5	IMG_6997.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125308Z.JPG	5/21/18 12:53	Dive06	-72.110715	41.24841167	-52.071	26.7	IMG_6998.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125313Z.JPG	5/21/18 12:53	Dive06	-72.11071333	41.248415	-51.993	34.9	IMG_6999.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125319Z.JPG	5/21/18 12:53	Dive06	-72.11071167	41.24841667	-52.149	33.4	IMG_7000.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125325Z.JPG	5/21/18 12:53	Dive06	-72.11071167	41.24842	-51.914	27.7	IMG_7001.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125345Z.JPG	5/21/18 12:53	Dive06	-72.11071	41.24842667	-51.836	29.6	IMG_7003.JPG	0	NA	NB42		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180521T125353Z.JPG	5/21/18 12:53	Dive06	-72.110705	41.24842667	-52.228	34.1	IMG_7004.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125412Z.JPG	5/21/18 12:54	Dive06	-72.110705	41.24842833	-52.149	31.2	IMG_7005.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125422Z.JPG	5/21/18 12:54	Dive06	-72.110705	41.24842833	-51.836	33.8	IMG_7006.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125431Z.JPG	5/21/18 12:54	Dive06	-72.11070333	41.24842833	-51.914	42.4	IMG_7007.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125436Z.JPG	5/21/18 12:54	Dive06	-72.1107	41.24843	-51.914	36.8	IMG_7008.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125443Z.JPG	5/21/18 12:54	Dive06	-72.11068833	41.24843833	-52.149	13.4	IMG_7009.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125449Z.JPG	5/21/18 12:54	Dive06	-72.110675	41.24844833	-52.071	17.4	IMG_7010.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125459Z.JPG	5/21/18 12:54	Dive06	-72.11065333	41.24846167	-52.071	21.6	IMG_7011.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125505Z.JPG	5/21/18 12:55	Dive06	-72.11065	41.248465	-51.993	16.6	IMG_7012.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125511Z.JPG	5/21/18 12:55	Dive06	-72.11064833	41.24846833	-51.914	17.8	IMG_7013.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125518Z.JPG	5/21/18 12:55	Dive06	-72.11064667	41.24847	-51.758	5.1	IMG_7014.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125536Z.JPG	5/21/18 12:55	Dive06	-72.11063833	41.24846833	-52.306	21.4	IMG_7018.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125546Z.JPG	5/21/18 12:55	Dive06	-72.11062667	41.24847333	-51.444	12.6	IMG_7020.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125552Z.JPG	5/21/18 12:55	Dive06	-72.11061833	41.24847833	-51.679	8.2	IMG_7021.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125558Z.JPG	5/21/18 12:55	Dive06	-72.11061	41.24848333	-51.444	357.9	IMG_7022.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125636Z.JPG	5/21/18 12:56	Dive06	-72.110595	41.24849833	-51.758	336.3	IMG_7024.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125649Z.JPG	5/21/18 12:56	Dive06	-72.11060167	41.2485	-51.288	339	IMG_7025.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125717Z.JPG	5/21/18 12:57	Dive06	-72.11058833	41.2485	-51.679	336.2	IMG_7026.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125741Z.JPG	5/21/18 12:57	Dive06	-72.11059333	41.2485	-51.758	340.4	IMG_7027.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T125947Z.JPG	5/21/18 12:59	Dive06	-72.11060833	41.24852833	-51.523	329.7	IMG_7029.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T130003Z.JPG	5/21/18 13:00	Dive06	-72.11062833	41.248535	-51.131	9.5	IMG_7030.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T130009Z.JPG	5/21/18 13:00	Dive06	-72.11062833	41.248535	-51.209	15.9	IMG_7031.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T130015Z.JPG	5/21/18 13:00	Dive06	-72.110645	41.248545	-50.975	26.2	IMG_7032.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T130021Z.JPG	5/21/18 13:00	Dive06	-72.11065333	41.248555	-51.209	27.7	IMG_7033.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T130228Z.JPG	5/21/18 13:02	Dive06	-72.11063833	41.24861833	-51.523	182.1	IMG_7034.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T130309Z.JPG	5/21/18 13:03	Dive06	-72.11064	41.24862	-51.288	178	IMG_7036.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T130338Z.JPG	5/21/18 13:03	Dive06	-72.11063333	41.24861333	-51.366	181	IMG_7037.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T130428Z.JPG	5/21/18 13:04	Dive06	-72.110635	41.24861667	-51.679	181.9	IMG_7039.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T130448Z.JPG	5/21/18 13:04	Dive06	-72.11063167	41.24861167	-51.366	182.6	IMG_7041.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T130519Z.JPG	5/21/18 13:05	Dive06	-72.11063333	41.248625	-51.366	177.7	IMG_7043.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T130738Z.JPG	5/21/18 13:07	Dive06	-72.11064333	41.24860167	-51.288	178.4	IMG_7045.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T130853Z.JPG	5/21/18 13:08	Dive06	-72.11054833	41.248595	-51.758	60.5	IMG_7052.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T131423Z.JPG	5/21/18 13:14	Dive06	-72.110515	41.24862667	-51.444	48.4	IMG_7063.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T131456Z.JPG	5/21/18 13:14	Dive06	-72.11049333	41.24862333	-51.523	19	IMG_7065.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T131707Z.JPG	5/21/18 13:17	Dive06	-72.11053167	41.24867333	-51.836	24.5	IMG_7078.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T131745Z.JPG	5/21/18 13:17	Dive06	-72.11054667	41.24867667	-51.836	22.6	IMG_7079.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T131948Z.JPG	5/21/18 13:19	Dive06	-72.110545	41.248675	-51.523	23.7	IMG_7084.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T132119Z.JPG	5/21/18 13:21	Dive06	-72.11053	41.2487	-51.444	351.6	IMG_7089.JPG	1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T132126Z.JPG	5/21/18 13:21	Dive06	-72.11053	41.24870333	-51.131	350.2	IMG_7090.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T132138Z.JPG	5/21/18 13:21	Dive06	-72.11052667	41.24870833	-51.288	342	IMG_7092.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T132149Z.JPG	5/21/18 13:21	Dive06	-72.11052	41.24871333	-51.209	341.5	IMG_7093.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T132223Z.JPG	5/21/18 13:22	Dive06	-72.11052833	41.24873167	-50.896	332.8	IMG_7094.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T132232Z.JPG	5/21/18 13:22	Dive06	-72.11053167	41.24873167	-50.896	333.3	IMG_7095.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T132239Z.JPG	5/21/18 13:22	Dive06	-72.11053167	41.24873333	-50.896	336	IMG_7096.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T132253Z.JPG	5/21/18 13:22	Dive06	-72.11053667	41.24874	-50.896	345.3	IMG_7097.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T132309Z.JPG	5/21/18 13:23	Dive06	-72.11055333	41.248745	-50.975	350.4	IMG_7098.JPG	0	NA	NB42		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180521T132334Z.JPG	5/21/18 13:23	Dive06	-72.11054	41.24874833	-50.896	319.4	IMG_7099.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T132351Z.JPG	5/21/18 13:23	Dive06	-72.11052833	41.248755	-50.896	313.5	IMG_7100.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T132401Z.JPG	5/21/18 13:24	Dive06	-72.11052833	41.248755	-50.896	314.5	IMG_7101.JPG	1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T132437Z.JPG	5/21/18 13:24	Dive06	-72.11053667	41.248755	-50.975	320.6	IMG_7103.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T132520Z.JPG	5/21/18 13:25	Dive06	-72.11054333	41.24875833	-50.818	322.2	IMG_7105.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T132742Z.JPG	5/21/18 13:27	Dive06	-72.11054333	41.24875667	-51.288	325	IMG_7106.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T132752Z.JPG	5/21/18 13:27	Dive06	-72.110545	41.24875667	-51.053	324.1	IMG_7107.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T132930Z.JPG	5/21/18 13:29	Dive06	-72.110565	41.248755	-50.818	323.6	IMG_7109.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T133306Z.JPG	5/21/18 13:33	Dive06	-72.11053	41.24881333	-50.583	19.9	IMG_7111.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T133334Z.JPG	5/21/18 13:33	Dive06	-72.11053333	41.24880167	-50.975	24.2	IMG_7112.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T133510Z.JPG	5/21/18 13:35	Dive06	-72.110515	41.24882	-50.583	20.4	IMG_7113.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T133538Z.JPG	5/21/18 13:35	Dive06	-72.11051833	41.248815	-50.896	21.1	IMG_7115.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T133601Z.JPG	5/21/18 13:36	Dive06	-72.11052333	41.24881333	-50.818	22.7	IMG_7117.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T133618Z.JPG	5/21/18 13:36	Dive06	-72.11052	41.24881333	-50.348	20	IMG_7118.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T133632Z.JPG	5/21/18 13:36	Dive06	-72.11052167	41.24882167	-51.053	23.3	IMG_7119.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T133721Z.JPG	5/21/18 13:37	Dive06	-72.11050333	41.24882	-50.896	20.4	IMG_7120.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T133727Z.JPG	5/21/18 13:37	Dive06	-72.11050333	41.24883	-50.661	6.6	IMG_7121.JPG	1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T133950Z.JPG	5/21/18 13:39	Dive06	-72.11051333	41.248885	-50.818	66.3	IMG_7125.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T134010Z.JPG	5/21/18 13:40	Dive06	-72.11050833	41.24888833	-50.583	66.9	IMG_7127.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T134132Z.JPG	5/21/18 13:41	Dive06	-72.11051667	41.24888833	-50.426	60.9	IMG_7131.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T134311Z.JPG	5/21/18 13:43	Dive06	-72.110505	41.24889167	-50.426	63.8	IMG_7133.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T134317Z.JPG	5/21/18 13:43	Dive06	-72.110495	41.24889333	-50.505	61.7	IMG_7134.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T134355Z.JPG	5/21/18 13:43	Dive06	-72.11046667	41.24889333	-50.661	52.7	IMG_7138.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T134427Z.JPG	5/21/18 13:44	Dive06	-72.11042	41.248915	-50.505	50.5	IMG_7142.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T134458Z.JPG	5/21/18 13:44	Dive06	-72.11041167	41.248925	-50.505	15.2	IMG_7144.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T134530Z.JPG	5/21/18 13:45	Dive06	-72.11039833	41.24892667	-50.505	17	IMG_7145.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T134913Z.JPG	5/21/18 13:49	Dive06	-72.11042167	41.24891833	-50.505	15	IMG_7149.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135032Z.JPG	5/21/18 13:50	Dive06	-72.11039833	41.24893167	-50.348	27.5	IMG_7152.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135041Z.JPG	5/21/18 13:50	Dive06	-72.11039833	41.24893167	-50.191	25.4	IMG_7153.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135049Z.JPG	5/21/18 13:50	Dive06	-72.11039833	41.248935	-50.348	26.3	IMG_7154.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135057Z.JPG	5/21/18 13:50	Dive06	-72.11039667	41.24893667	-50.348	30.6	IMG_7155.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135112Z.JPG	5/21/18 13:51	Dive06	-72.11039833	41.248945	-50.035	32.5	IMG_7157.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135124Z.JPG	5/21/18 13:51	Dive06	-72.11039833	41.248955	-50.113	26.4	IMG_7158.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135132Z.JPG	5/21/18 13:51	Dive06	-72.110395	41.24896167	-50.505	35.7	IMG_7159.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135139Z.JPG	5/21/18 13:51	Dive06	-72.11039167	41.24896333	-50.27	32.5	IMG_7160.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135151Z.JPG	5/21/18 13:51	Dive06	-72.11039	41.24897333	-49.956	25.8	IMG_7161.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135157Z.JPG	5/21/18 13:51	Dive06	-72.11038833	41.24897667	-50.113	17.4	IMG_7162.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135205Z.JPG	5/21/18 13:52	Dive06	-72.11038	41.24898167	-49.956	28.4	IMG_7163.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135211Z.JPG	5/21/18 13:52	Dive06	-72.11037667	41.248985	-50.27	28.9	IMG_7164.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135220Z.JPG	5/21/18 13:52	Dive06	-72.11037	41.24899333	-50.035	31.9	IMG_7165.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135228Z.JPG	5/21/18 13:52	Dive06	-72.11036333	41.24899667	-50.035	28.5	IMG_7166.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135236Z.JPG	5/21/18 13:52	Dive06	-72.11035667	41.249	-50.27	23.1	IMG_7167.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135321Z.JPG	5/21/18 13:53	Dive06	-72.110325	41.24902167	-50.113	5.2	IMG_7173.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135346Z.JPG	5/21/18 13:53	Dive06	-72.1103	41.24904167	-49.8	337.8	IMG_7176.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135440Z.JPG	5/21/18 13:54	Dive06	-72.110305	41.24906	-49.956	347.1	IMG_7184.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135445Z.JPG	5/21/18 13:54	Dive06	-72.11030667	41.24906	-49.721	349.9	IMG_7185.JPG	0	NA	NB42		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180521T135457Z.JPG	5/21/18 13:54	Dive06	-72.110315	41.24906333	-49.8	359.4	IMG_7186.JPG	1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135505Z.JPG	5/21/18 13:55	Dive06	-72.11031833	41.249065	-50.113	1.9	IMG_7187.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135516Z.JPG	5/21/18 13:55	Dive06	-72.11032167	41.24906833	-49.956	0.7	IMG_7188.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135533Z.JPG	5/21/18 13:55	Dive06	-72.110325	41.24907167	-50.035	8.8	IMG_7189.JPG	1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135538Z.JPG	5/21/18 13:55	Dive06	-72.11032667	41.249075	-50.035	3.2	IMG_7190.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135547Z.JPG	5/21/18 13:55	Dive06	-72.110325	41.24907833	-49.878	5.6	IMG_7191.JPG	1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135600Z.JPG	5/21/18 13:56	Dive06	-72.11032333	41.24908333	-49.878	17.3	IMG_7192.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T135620Z.JPG	5/21/18 13:56	Dive06	-72.11032167	41.24909	-49.878	16.6	IMG_7193.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140104Z.JPG	5/21/18 14:01	Dive06	-72.11033167	41.24910833	-49.095	34.2	IMG_7199.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140110Z.JPG	5/21/18 14:01	Dive06	-72.11032833	41.24910833	-49.252	33.5	IMG_7200.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140116Z.JPG	5/21/18 14:01	Dive06	-72.110325	41.24911	-49.017	32.5	IMG_7201.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140126Z.JPG	5/21/18 14:01	Dive06	-72.11032833	41.24911667	-48.703	35.5	IMG_7202.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140154Z.JPG	5/21/18 14:01	Dive06	-72.11034	41.249135	-48.547	55.4	IMG_7205.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140302Z.JPG	5/21/18 14:03	Dive06	-72.110285	41.24913667	-49.017	338.7	IMG_7211.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140312Z.JPG	5/21/18 14:03	Dive06	-72.11028667	41.24913333	-48.625	338.1	IMG_7212.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140344Z.JPG	5/21/18 14:03	Dive06	-72.11027667	41.249125	-48.938	322.1	IMG_7213.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140503Z.JPG	5/21/18 14:05	Dive06	-72.11027167	41.24912667	-48.782	320.1	IMG_7214.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140521Z.JPG	5/21/18 14:05	Dive06	-72.110275	41.24913333	-48.703	318.3	IMG_7215.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140534Z.JPG	5/21/18 14:05	Dive06	-72.11027667	41.249135	-48.703	321.9	IMG_7216.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140558Z.JPG	5/21/18 14:05	Dive06	-72.11027667	41.24913667	-48.86	321.2	IMG_7218.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140609Z.JPG	5/21/18 14:06	Dive06	-72.11027167	41.249135	-48.547	320.5	IMG_7219.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140925Z.JPG	5/21/18 14:09	Dive06	-72.11028667	41.24913833	-48.782	50.5	IMG_7229.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140939Z.JPG	5/21/18 14:09	Dive06	-72.110285	41.24914333	-48.625	49.2	IMG_7230.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T140958Z.JPG	5/21/18 14:09	Dive06	-72.11028833	41.24915667	-48.703	49.8	IMG_7232.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T141101Z.JPG	5/21/18 14:11	Dive06	-72.11028833	41.24914167	-48.625	49.1	IMG_7236.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T141141Z.JPG	5/21/18 14:11	Dive06	-72.11029333	41.24913667	-48.625	49.4	IMG_7237.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T141159Z.JPG	5/21/18 14:11	Dive06	-72.11028833	41.24913667	-48.703	51	IMG_7238.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T141208Z.JPG	5/21/18 14:12	Dive06	-72.11029333	41.24914	-48.86	50.7	IMG_7239.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T141216Z.JPG	5/21/18 14:12	Dive06	-72.11030167	41.24914	-48.782	49.9	IMG_7240.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T141637Z.JPG	5/21/18 14:16	Dive06	-72.11026833	41.24917667	-48.547	47.3	IMG_7241.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T141729Z.JPG	5/21/18 14:17	Dive06	-72.11027833	41.24917333	-48.547	46.8	IMG_7243.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T141736Z.JPG	5/21/18 14:17	Dive06	-72.11027833	41.24917667	-48.312	48.8	IMG_7244.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T142010Z.JPG	5/21/18 14:20	Dive06	-72.11019833	41.24922333	-47.685	272.1	IMG_7252.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T142020Z.JPG	5/21/18 14:20	Dive06	-72.11020167	41.24922667	-48.077	272	IMG_7253.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T142030Z.JPG	5/21/18 14:20	Dive06	-72.11020167	41.24922833	-48.077	271.6	IMG_7254.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T142046Z.JPG	5/21/18 14:20	Dive06	-72.11020333	41.24922167	-47.998	272.2	IMG_7256.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T142053Z.JPG	5/21/18 14:20	Dive06	-72.11020167	41.24922	-47.685	272	IMG_7257.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T142104Z.JPG	5/21/18 14:21	Dive06	-72.11020333	41.24921833	-48.155	272.4	IMG_7258.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T142114Z.JPG	5/21/18 14:21	Dive06	-72.110205	41.249215	-47.92	272	IMG_7259.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T142122Z.JPG	5/21/18 14:21	Dive06	-72.11020333	41.249215	-47.685	271.7	IMG_7260.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T142211Z.JPG	5/21/18 14:22	Dive06	-72.11020667	41.24921	-47.842	271.9	IMG_7265.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T142221Z.JPG	5/21/18 14:22	Dive06	-72.11021	41.24921333	-47.842	271.6	IMG_7266.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T142445Z.JPG	5/21/18 14:24	Dive06	-72.1102	41.249225	-48.077	271.8	IMG_7268.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T142457Z.JPG	5/21/18 14:24	Dive06	-72.11020333	41.24922	-47.92	272.5	IMG_7269.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T142524Z.JPG	5/21/18 14:25	Dive06	-72.11020833	41.24921333	-48.077	272.3	IMG_7271.JPG	0	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T142639Z.JPG	5/21/18 14:26	Dive06	-72.110205	41.24922167	-48.233	273	IMG_7273.JPG	-1	NA	NB42		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180521T142757Z.JPG	5/21/18 14:27	Dive06	-72.11020667	41.24921	-47.998	272.5	IMG_7274.JPG	-1	NA	NB42		
LISMaRC_Spring2018_ROV_PT_20180521T153057Z.JPG	5/21/18 15:30	Dive07	-72.04846833	41.239115	-64.915	31.2	IMG_7277.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153116Z.JPG	5/21/18 15:31	Dive07	-72.04847333	41.23911667	-65.15	29.2	IMG_7278.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153221Z.JPG	5/21/18 15:32	Dive07	-72.04846167	41.23912	-64.837	29.8	IMG_7281.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153233Z.JPG	5/21/18 15:32	Dive07	-72.04845333	41.23912	-64.602	31.5	IMG_7282.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153306Z.JPG	5/21/18 15:33	Dive07	-72.04844667	41.23912167	-64.524	31.9	IMG_7283.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153334Z.JPG	5/21/18 15:33	Dive07	-72.04845333	41.23912	-64.445	37.2	IMG_7284.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153342Z.JPG	5/21/18 15:33	Dive07	-72.04845167	41.23912167	-64.524	43.6	IMG_7285.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153358Z.JPG	5/21/18 15:33	Dive07	-72.04844833	41.23913167	-64.602	54.4	IMG_7287.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153405Z.JPG	5/21/18 15:34	Dive07	-72.04845	41.239135	-64.445	39.3	IMG_7288.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153410Z.JPG	5/21/18 15:34	Dive07	-72.04845333	41.239135	-63.897	23.1	IMG_7289.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153420Z.JPG	5/21/18 15:34	Dive07	-72.04843167	41.23914	-63.819	15.4	IMG_7290.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153429Z.JPG	5/21/18 15:34	Dive07	-72.04840667	41.23915167	-63.819	17.8	IMG_7291.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153435Z.JPG	5/21/18 15:34	Dive07	-72.04839667	41.23916	-63.897	35.1	IMG_7292.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153448Z.JPG	5/21/18 15:34	Dive07	-72.04839833	41.23917667	-63.976	41.3	IMG_7293.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153454Z.JPG	5/21/18 15:34	Dive07	-72.04840667	41.23918333	-63.976	36.4	IMG_7294.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153814Z.JPG	5/21/18 15:38	Dive07	-72.04832833	41.23922167	-63.114	98.7	IMG_7308.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153909Z.JPG	5/21/18 15:39	Dive07	-72.04833167	41.23922667	-62.957	30.8	IMG_7313.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153929Z.JPG	5/21/18 15:39	Dive07	-72.04831833	41.239225	-62.801	357.1	IMG_7315.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153938Z.JPG	5/21/18 15:39	Dive07	-72.04831833	41.239225	-62.722	359	IMG_7316.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153948Z.JPG	5/21/18 15:39	Dive07	-72.04832333	41.23922667	-62.722	5.2	IMG_7317.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153955Z.JPG	5/21/18 15:39	Dive07	-72.04832333	41.23922833	-62.957	4.8	IMG_7318.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154352Z.JPG	5/21/18 15:43	Dive07	-72.04839	41.23929	-62.566	71.5	IMG_7331.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154357Z.JPG	5/21/18 15:43	Dive07	-72.04839	41.239295	-62.879	65.1	IMG_7332.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154403Z.JPG	5/21/18 15:44	Dive07	-72.04839	41.239295	-62.566	54.3	IMG_7333.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154417Z.JPG	5/21/18 15:44	Dive07	-72.04838667	41.239295	-62.566	62.5	IMG_7334.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154423Z.JPG	5/21/18 15:44	Dive07	-72.048385	41.23929667	-62.644	66.9	IMG_7335.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154429Z.JPG	5/21/18 15:44	Dive07	-72.04838667	41.23929833	-62.174	61.9	IMG_7336.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154439Z.JPG	5/21/18 15:44	Dive07	-72.04838	41.23930333	-62.096	70.4	IMG_7337.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154448Z.JPG	5/21/18 15:44	Dive07	-72.04837333	41.23930333	-62.566	81.4	IMG_7338.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154455Z.JPG	5/21/18 15:44	Dive07	-72.048355	41.23931167	-62.096	84.4	IMG_7339.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154459Z.JPG	5/21/18 15:44	Dive07	-72.048345	41.23931167	-62.174	75.5	IMG_7340.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154502Z.JPG	5/21/18 15:45	Dive07	-72.04834167	41.23931333	-62.174	64	IMG_7341.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154511Z.JPG	5/21/18 15:45	Dive07	-72.04833833	41.23931833	-62.252	52.7	IMG_7342.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154516Z.JPG	5/21/18 15:45	Dive07	-72.04833333	41.23931833	-62.018	49.6	IMG_7343.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154529Z.JPG	5/21/18 15:45	Dive07	-72.04833333	41.23932333	-62.018	51.5	IMG_7344.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154627Z.JPG	5/21/18 15:46	Dive07	-72.04831833	41.23932833	-61.704	40.9	IMG_7346.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154636Z.JPG	5/21/18 15:46	Dive07	-72.04831333	41.239335	-61.939	38.1	IMG_7347.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154641Z.JPG	5/21/18 15:46	Dive07	-72.04830667	41.239335	-61.783	43.4	IMG_7348.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154647Z.JPG	5/21/18 15:46	Dive07	-72.0483	41.23933833	-61.704	34.2	IMG_7349.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154654Z.JPG	5/21/18 15:46	Dive07	-72.04829167	41.23934167	-61.704	29	IMG_7350.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154659Z.JPG	5/21/18 15:46	Dive07	-72.04828833	41.23934	-61.548	24.2	IMG_7351.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154718Z.JPG	5/21/18 15:47	Dive07	-72.048295	41.239355	-61.391	44.1	IMG_7353.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154723Z.JPG	5/21/18 15:47	Dive07	-72.04829667	41.23936167	-61.234	50.1	IMG_7354.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154729Z.JPG	5/21/18 15:47	Dive07	-72.04829833	41.23936833	-61.313	49	IMG_7355.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154735Z.JPG	5/21/18 15:47	Dive07	-72.04829667	41.23937667	-61.469	36	IMG_7356.JPG	-1	SB66	NA		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180521T154740Z.JPG	5/21/18 15:47	Dive07	-72.04828833	41.23938	-61.078	44.3	IMG_7357.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154800Z.JPG	5/21/18 15:48	Dive07	-72.04827	41.239385	-61.234	34.9	IMG_7358.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154808Z.JPG	5/21/18 15:48	Dive07	-72.04826667	41.23937833	-61.234	35.5	IMG_7359.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154836Z.JPG	5/21/18 15:48	Dive07	-72.04831	41.23936333	-61.078	39	IMG_7361.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154852Z.JPG	5/21/18 15:48	Dive07	-72.048355	41.23935667	-61.391	34.4	IMG_7362.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154913Z.JPG	5/21/18 15:49	Dive07	-72.048375	41.23935167	-61.156	34.6	IMG_7363.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154924Z.JPG	5/21/18 15:49	Dive07	-72.048375	41.23934833	-61.234	35.4	IMG_7364.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154934Z.JPG	5/21/18 15:49	Dive07	-72.04837	41.23935	-61.313	34.7	IMG_7365.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154945Z.JPG	5/21/18 15:49	Dive07	-72.04836333	41.23935667	-61.313	35.3	IMG_7366.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155149Z.JPG	5/21/18 15:51	Dive07	-72.04838	41.23934667	-60.921	53.3	IMG_7367.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155201Z.JPG	5/21/18 15:52	Dive07	-72.04836167	41.23936	-60.529	66.2	IMG_7368.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155207Z.JPG	5/21/18 15:52	Dive07	-72.04836167	41.23936167	-60.451	65.6	IMG_7369.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155216Z.JPG	5/21/18 15:52	Dive07	-72.04834833	41.23936667	-60.216	79.7	IMG_7370.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155221Z.JPG	5/21/18 15:52	Dive07	-72.04834833	41.23936833	-60.295	77.6	IMG_7371.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155225Z.JPG	5/21/18 15:52	Dive07	-72.048335	41.23937333	-59.981	68.4	IMG_7372.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155229Z.JPG	5/21/18 15:52	Dive07	-72.04831833	41.239375	-59.981	58.5	IMG_7373.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155232Z.JPG	5/21/18 15:52	Dive07	-72.04830833	41.23937833	-59.668	58.7	IMG_7374.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155238Z.JPG	5/21/18 15:52	Dive07	-72.04829333	41.23938	-60.06	59.6	IMG_7375.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155248Z.JPG	5/21/18 15:52	Dive07	-72.04827167	41.23939	-59.825	62.2	IMG_7376.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155255Z.JPG	5/21/18 15:52	Dive07	-72.04826667	41.239395	-59.981	52.5	IMG_7377.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155303Z.JPG	5/21/18 15:53	Dive07	-72.04826167	41.23939667	-59.276	29.3	IMG_7378.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155306Z.JPG	5/21/18 15:53	Dive07	-72.04825833	41.2394	-59.59	36.7	IMG_7379.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155311Z.JPG	5/21/18 15:53	Dive07	-72.048265	41.23939833	-59.355	35	IMG_7380.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155316Z.JPG	5/21/18 15:53	Dive07	-72.04826	41.23940167	-59.746	43.4	IMG_7381.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155321Z.JPG	5/21/18 15:53	Dive07	-72.04825833	41.239405	-59.746	37.5	IMG_7382.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155328Z.JPG	5/21/18 15:53	Dive07	-72.04824833	41.23941167	-59.276	37.7	IMG_7383.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155337Z.JPG	5/21/18 15:53	Dive07	-72.04824333	41.23941167	-59.276	47.3	IMG_7384.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155342Z.JPG	5/21/18 15:53	Dive07	-72.048245	41.23941667	-59.198	46.4	IMG_7385.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155347Z.JPG	5/21/18 15:53	Dive07	-72.04824833	41.23941833	-58.885	44.1	IMG_7386.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155352Z.JPG	5/21/18 15:53	Dive07	-72.048245	41.23942	-58.65	33	IMG_7387.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155357Z.JPG	5/21/18 15:53	Dive07	-72.04824333	41.23942167	-58.728	27.8	IMG_7388.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155401Z.JPG	5/21/18 15:54	Dive07	-72.04823833	41.23942167	-58.885	18.9	IMG_7389.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155406Z.JPG	5/21/18 15:54	Dive07	-72.04823833	41.23942167	-58.885	14.8	IMG_7390.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155415Z.JPG	5/21/18 15:54	Dive07	-72.04823667	41.239425	-58.493	35.6	IMG_7391.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155420Z.JPG	5/21/18 15:54	Dive07	-72.04824167	41.23942833	-58.493	31.5	IMG_7392.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155425Z.JPG	5/21/18 15:54	Dive07	-72.04823667	41.23943333	-58.258	33.6	IMG_7393.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155430Z.JPG	5/21/18 15:54	Dive07	-72.04823833	41.23943833	-57.945	41.7	IMG_7394.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155435Z.JPG	5/21/18 15:54	Dive07	-72.04823833	41.23944333	-58.493	48.9	IMG_7395.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155440Z.JPG	5/21/18 15:54	Dive07	-72.04824	41.23945167	-58.102	36.9	IMG_7396.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155443Z.JPG	5/21/18 15:54	Dive07	-72.04823667	41.23945	-57.867	32.8	IMG_7397.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155447Z.JPG	5/21/18 15:54	Dive07	-72.04824333	41.23945167	-58.023	28.7	IMG_7398.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155450Z.JPG	5/21/18 15:54	Dive07	-72.048245	41.23945167	-58.102	26.2	IMG_7399.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155454Z.JPG	5/21/18 15:54	Dive07	-72.04824833	41.23945333	-57.71	39.8	IMG_7400.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155458Z.JPG	5/21/18 15:54	Dive07	-72.048255	41.23945167	-57.632	48.8	IMG_7401.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155506Z.JPG	5/21/18 15:55	Dive07	-72.04826167	41.23945333	-57.397	50.7	IMG_7402.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155514Z.JPG	5/21/18 15:55	Dive07	-72.04826667	41.23945833	-57.397	44.2	IMG_7403.JPG	0	SB66	NA		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180521T155523Z.JPG	5/21/18 15:55	Dive07	-72.048265	41.239465	-57.083	8.4	IMG_7404.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155536Z.JPG	5/21/18 15:55	Dive07	-72.04826833	41.23947333	-56.77	37	IMG_7406.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155541Z.JPG	5/21/18 15:55	Dive07	-72.04827167	41.23947833	-56.535	38.7	IMG_7407.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155546Z.JPG	5/21/18 15:55	Dive07	-72.04827333	41.23948167	-56.535	40.1	IMG_7408.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155555Z.JPG	5/21/18 15:55	Dive07	-72.04827833	41.23948333	-56.535	34.8	IMG_7409.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155600Z.JPG	5/21/18 15:56	Dive07	-72.04827667	41.239485	-56.457	42.7	IMG_7410.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155604Z.JPG	5/21/18 15:56	Dive07	-72.04827	41.23948833	-56.692	43.7	IMG_7411.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155623Z.JPG	5/21/18 15:56	Dive07	-72.04825167	41.23950167	-56.379	34.7	IMG_7412.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155631Z.JPG	5/21/18 15:56	Dive07	-72.04825333	41.23949667	-55.674	22.2	IMG_7413.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155642Z.JPG	5/21/18 15:56	Dive07	-72.04826333	41.23948667	-56.222	16.7	IMG_7414.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155647Z.JPG	5/21/18 15:56	Dive07	-72.04826333	41.239485	-56.222	28.1	IMG_7415.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155700Z.JPG	5/21/18 15:57	Dive07	-72.04826667	41.23949167	-56.065	34.7	IMG_7416.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155707Z.JPG	5/21/18 15:57	Dive07	-72.04826667	41.239495	-55.752	56.4	IMG_7417.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155710Z.JPG	5/21/18 15:57	Dive07	-72.048255	41.23950667	-55.909	71.8	IMG_7418.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155754Z.JPG	5/21/18 15:57	Dive07	-72.04825167	41.23950833	-56.692	42.8	IMG_7419.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155852Z.JPG	5/21/18 15:58	Dive07	-72.04825167	41.23951333	-56.379	58.6	IMG_7420.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155856Z.JPG	5/21/18 15:58	Dive07	-72.04825333	41.23951667	-56.144	54.2	IMG_7421.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155900Z.JPG	5/21/18 15:59	Dive07	-72.048255	41.23951833	-55.909	53.2	IMG_7422.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155905Z.JPG	5/21/18 15:59	Dive07	-72.04825667	41.23952	-56.065	63	IMG_7423.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155911Z.JPG	5/21/18 15:59	Dive07	-72.04825667	41.23952833	-55.987	49	IMG_7424.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155919Z.JPG	5/21/18 15:59	Dive07	-72.048265	41.23952	-55.36	24.3	IMG_7425.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155925Z.JPG	5/21/18 15:59	Dive07	-72.04826167	41.23952167	-55.517	37.9	IMG_7426.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155934Z.JPG	5/21/18 15:59	Dive07	-72.04827333	41.23951667	-55.204	42.8	IMG_7427.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155939Z.JPG	5/21/18 15:59	Dive07	-72.04827333	41.23951833	-54.969	45.3	IMG_7428.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155951Z.JPG	5/21/18 15:59	Dive07	-72.04829	41.23951667	-55.36	78.9	IMG_7430.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160003Z.JPG	5/21/18 16:00	Dive07	-72.04832333	41.2395	-54.969	71.7	IMG_7432.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160010Z.JPG	5/21/18 16:00	Dive07	-72.04833167	41.239495	-55.047	69.4	IMG_7433.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160019Z.JPG	5/21/18 16:00	Dive07	-72.048325	41.23950167	-54.969	68.8	IMG_7434.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160027Z.JPG	5/21/18 16:00	Dive07	-72.048325	41.23950167	-54.734	55.5	IMG_7435.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160033Z.JPG	5/21/18 16:00	Dive07	-72.048265	41.23954	-54.89	68.6	IMG_7436.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160038Z.JPG	5/21/18 16:00	Dive07	-72.04825833	41.239545	-54.812	63.3	IMG_7437.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160043Z.JPG	5/21/18 16:00	Dive07	-72.04826833	41.23954	-54.812	52	IMG_7438.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160050Z.JPG	5/21/18 16:00	Dive07	-72.0483	41.23952333	-53.637	56.5	IMG_7439.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160053Z.JPG	5/21/18 16:00	Dive07	-72.04830833	41.23951667	-53.794	54.9	IMG_7440.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160110Z.JPG	5/21/18 16:01	Dive07	-72.04825333	41.23955167	-54.107	60	IMG_7441.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160113Z.JPG	5/21/18 16:01	Dive07	-72.04824667	41.23955667	-53.402	53	IMG_7442.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160118Z.JPG	5/21/18 16:01	Dive07	-72.04823167	41.23956833	-53.246	66.5	IMG_7443.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160125Z.JPG	5/21/18 16:01	Dive07	-72.048215	41.23957667	-53.559	59.2	IMG_7444.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160131Z.JPG	5/21/18 16:01	Dive07	-72.048205	41.23958167	-53.324	62.4	IMG_7445.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160136Z.JPG	5/21/18 16:01	Dive07	-72.04818667	41.23959	-53.167	59.7	IMG_7446.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160141Z.JPG	5/21/18 16:01	Dive07	-72.04817333	41.23959333	-53.246	43.3	IMG_7447.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160146Z.JPG	5/21/18 16:01	Dive07	-72.048165	41.23959833	-52.698	60.7	IMG_7448.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160151Z.JPG	5/21/18 16:01	Dive07	-72.04816167	41.23960167	-52.384	57	IMG_7449.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160205Z.JPG	5/21/18 16:02	Dive07	-72.04814667	41.23961	-52.149	51.1	IMG_7451.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160210Z.JPG	5/21/18 16:02	Dive07	-72.04814167	41.23961667	-51.601	59.9	IMG_7452.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160215Z.JPG	5/21/18 16:02	Dive07	-72.04814	41.23961833	-51.444	57.1	IMG_7453.JPG	-1	SB66	NA		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180521T160230Z.JPG	5/21/18 16:02	Dive07	-72.04814	41.239625	-51.914	40.7	IMG_7454.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160234Z.JPG	5/21/18 16:02	Dive07	-72.04814	41.23962333	-51.679	51.6	IMG_7455.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160239Z.JPG	5/21/18 16:02	Dive07	-72.04813833	41.23962333	-51.209	59.8	IMG_7456.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160242Z.JPG	5/21/18 16:02	Dive07	-72.04813833	41.23962333	-51.444	41.6	IMG_7457.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160247Z.JPG	5/21/18 16:02	Dive07	-72.048135	41.23962333	-51.053	61.5	IMG_7458.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160252Z.JPG	5/21/18 16:02	Dive07	-72.04813667	41.23962667	-50.818	56.5	IMG_7459.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160302Z.JPG	5/21/18 16:03	Dive07	-72.04812667	41.23963667	-50.74	37.1	IMG_7460.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160312Z.JPG	5/21/18 16:03	Dive07	-72.04812333	41.23965	-50.74	51.5	IMG_7461.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160317Z.JPG	5/21/18 16:03	Dive07	-72.04812333	41.239655	-50.426	49.4	IMG_7462.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160321Z.JPG	5/21/18 16:03	Dive07	-72.048125	41.23965667	-50.661	38.9	IMG_7463.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160325Z.JPG	5/21/18 16:03	Dive07	-72.04813	41.23966	-50.583	51.8	IMG_7464.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160331Z.JPG	5/21/18 16:03	Dive07	-72.04814167	41.23966	-50.426	63.2	IMG_7465.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160337Z.JPG	5/21/18 16:03	Dive07	-72.04815333	41.23965667	-50.583	59.6	IMG_7466.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160343Z.JPG	5/21/18 16:03	Dive07	-72.04816333	41.239655	-50.348	42.1	IMG_7467.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160403Z.JPG	5/21/18 16:04	Dive07	-72.04817333	41.23965	-50.27	54.9	IMG_7469.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160410Z.JPG	5/21/18 16:04	Dive07	-72.04818167	41.239655	-50.035	57.6	IMG_7470.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160419Z.JPG	5/21/18 16:04	Dive07	-72.04818	41.23967	-49.643	61.8	IMG_7471.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160433Z.JPG	5/21/18 16:04	Dive07	-72.04817833	41.23968167	-49.565	35.2	IMG_7472.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160441Z.JPG	5/21/18 16:04	Dive07	-72.04818667	41.23967667	-49.095	54.5	IMG_7473.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160447Z.JPG	5/21/18 16:04	Dive07	-72.04818667	41.23967833	-49.252	64.7	IMG_7474.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160455Z.JPG	5/21/18 16:04	Dive07	-72.048195	41.23967333	-49.173	46.2	IMG_7475.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160509Z.JPG	5/21/18 16:05	Dive07	-72.04819667	41.23967833	-48.938	51.8	IMG_7476.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160521Z.JPG	5/21/18 16:05	Dive07	-72.04819667	41.23968	-48.625	62.2	IMG_7477.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160529Z.JPG	5/21/18 16:05	Dive07	-72.04819667	41.23968	-48.547	40.9	IMG_7478.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160537Z.JPG	5/21/18 16:05	Dive07	-72.0482	41.23968167	-49.173	60.6	IMG_7479.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160542Z.JPG	5/21/18 16:05	Dive07	-72.04819833	41.23968333	-48.86	56.1	IMG_7480.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160549Z.JPG	5/21/18 16:05	Dive07	-72.04820167	41.23968333	-48.547	63.8	IMG_7481.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160554Z.JPG	5/21/18 16:05	Dive07	-72.04820167	41.239685	-48.312	56.3	IMG_7482.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160603Z.JPG	5/21/18 16:06	Dive07	-72.04819833	41.23969	-47.998	65.7	IMG_7483.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160615Z.JPG	5/21/18 16:06	Dive07	-72.04817833	41.23970167	-48.077	60.1	IMG_7484.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160627Z.JPG	5/21/18 16:06	Dive07	-72.04816667	41.23971	-47.92	65.5	IMG_7485.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160642Z.JPG	5/21/18 16:06	Dive07	-72.04814667	41.23972167	-47.059	61.3	IMG_7486.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160649Z.JPG	5/21/18 16:06	Dive07	-72.04813667	41.23972667	-47.137	61.7	IMG_7487.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160700Z.JPG	5/21/18 16:07	Dive07	-72.048115	41.23973667	-47.294	54.6	IMG_7488.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160718Z.JPG	5/21/18 16:07	Dive07	-72.04809667	41.23974667	-46.824	58.8	IMG_7489.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160726Z.JPG	5/21/18 16:07	Dive07	-72.04809667	41.23974833	-46.824	68	IMG_7490.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160730Z.JPG	5/21/18 16:07	Dive07	-72.048095	41.23975	-46.51	58.5	IMG_7491.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160738Z.JPG	5/21/18 16:07	Dive07	-72.04809167	41.23975667	-46.275	53.5	IMG_7492.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160746Z.JPG	5/21/18 16:07	Dive07	-72.04809333	41.23976167	-46.589	52	IMG_7493.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160753Z.JPG	5/21/18 16:07	Dive07	-72.04809333	41.239765	-45.962	49.5	IMG_7494.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160801Z.JPG	5/21/18 16:08	Dive07	-72.048095	41.23976833	-46.197	61.1	IMG_7495.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160820Z.JPG	5/21/18 16:08	Dive07	-72.04809	41.23976667	-46.432	66.9	IMG_7496.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160829Z.JPG	5/21/18 16:08	Dive07	-72.04809833	41.23976	-46.745	55.2	IMG_7497.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160844Z.JPG	5/21/18 16:08	Dive07	-72.04813	41.23974167	-46.589	72.9	IMG_7499.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160850Z.JPG	5/21/18 16:08	Dive07	-72.04813333	41.23974167	-46.824	72.1	IMG_7500.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160900Z.JPG	5/21/18 16:09	Dive07	-72.04814	41.23974333	-46.432	80.3	IMG_7501.JPG	0	SB66	NA		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180521T160905Z.JPG	5/21/18 16:09	Dive07	-72.04813833	41.23974667	-46.902	64.7	IMG_7502.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160932Z.JPG	5/21/18 16:09	Dive07	-72.04813167	41.239755	-46.98	67.4	IMG_7503.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160942Z.JPG	5/21/18 16:09	Dive07	-72.04813333	41.239755	-47.059	68.1	IMG_7504.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161012Z.JPG	5/21/18 16:10	Dive07	-72.04813833	41.23974	-47.607	61.5	IMG_7505.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161024Z.JPG	5/21/18 16:10	Dive07	-72.04814167	41.23973667	-47.842	63.4	IMG_7506.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161106Z.JPG	5/21/18 16:11	Dive07	-72.04814667	41.23973833	-47.763	79.6	IMG_7508.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161120Z.JPG	5/21/18 16:11	Dive07	-72.04815167	41.23974833	-48.233	113.5	IMG_7509.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161127Z.JPG	5/21/18 16:11	Dive07	-72.04816167	41.23974333	-48.86	77.7	IMG_7510.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161134Z.JPG	5/21/18 16:11	Dive07	-72.048185	41.23972167	-48.547	76.5	IMG_7511.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161140Z.JPG	5/21/18 16:11	Dive07	-72.04821	41.239695	-48.938	71.3	IMG_7512.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161145Z.JPG	5/21/18 16:11	Dive07	-72.04822333	41.23968333	-49.173	69.9	IMG_7513.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161151Z.JPG	5/21/18 16:11	Dive07	-72.04823167	41.23967667	-49.017	78.9	IMG_7514.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161156Z.JPG	5/21/18 16:11	Dive07	-72.04823167	41.23967667	-49.408	91.8	IMG_7515.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161201Z.JPG	5/21/18 16:12	Dive07	-72.048215	41.23969167	-49.017	74	IMG_7516.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161208Z.JPG	5/21/18 16:12	Dive07	-72.04821	41.2397	-49.408	76	IMG_7517.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161219Z.JPG	5/21/18 16:12	Dive07	-72.04820333	41.23969667	-48.468	60.8	IMG_7519.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161226Z.JPG	5/21/18 16:12	Dive07	-72.04820333	41.23969667	-48.155	70.3	IMG_7520.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161240Z.JPG	5/21/18 16:12	Dive07	-72.04819167	41.23970667	-48.468	81.4	IMG_7521.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161259Z.JPG	5/21/18 16:12	Dive07	-72.04818333	41.23970833	-48.233	78.6	IMG_7522.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161310Z.JPG	5/21/18 16:13	Dive07	-72.04818833	41.23970333	-48.233	75.8	IMG_7523.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161318Z.JPG	5/21/18 16:13	Dive07	-72.04817833	41.23971167	-48.155	77.9	IMG_7524.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161327Z.JPG	5/21/18 16:13	Dive07	-72.04817	41.239725	-48.155	86.9	IMG_7525.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161333Z.JPG	5/21/18 16:13	Dive07	-72.04817333	41.23972667	-48.547	68.7	IMG_7526.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161339Z.JPG	5/21/18 16:13	Dive07	-72.048185	41.23972333	-49.017	89.6	IMG_7527.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161344Z.JPG	5/21/18 16:13	Dive07	-72.048215	41.23970333	-49.721	62.3	IMG_7528.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161353Z.JPG	5/21/18 16:13	Dive07	-72.04823167	41.2397	-49.956	79.6	IMG_7529.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161408Z.JPG	5/21/18 16:14	Dive07	-72.04826167	41.23968333	-50.505	73.5	IMG_7530.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161414Z.JPG	5/21/18 16:14	Dive07	-72.04826167	41.23968333	-50.426	68.4	IMG_7531.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161426Z.JPG	5/21/18 16:14	Dive07	-72.04826167	41.23968333	-50.583	86.7	IMG_7532.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161438Z.JPG	5/21/18 16:14	Dive07	-72.04826167	41.23968333	-50.661	78.9	IMG_7533.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161446Z.JPG	5/21/18 16:14	Dive07	-72.04826167	41.23968333	-50.505	71.6	IMG_7534.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161456Z.JPG	5/21/18 16:14	Dive07	-72.04826167	41.23968333	-49.956	93.7	IMG_7535.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161508Z.JPG	5/21/18 16:15	Dive07	-72.04827667	41.239695	-50.348	79.9	IMG_7536.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161535Z.JPG	5/21/18 16:15	Dive07	-72.04835667	41.23969167	-51.053	52.6	IMG_7537.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161540Z.JPG	5/21/18 16:15	Dive07	-72.04837167	41.23969333	-50.27	43.6	IMG_7538.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161543Z.JPG	5/21/18 16:15	Dive07	-72.04837667	41.23969333	-50.27	44.3	IMG_7539.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161546Z.JPG	5/21/18 16:15	Dive07	-72.048385	41.23969333	-50.896	59.9	IMG_7540.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161551Z.JPG	5/21/18 16:15	Dive07	-72.04839167	41.23969667	-50.505	63.6	IMG_7541.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161554Z.JPG	5/21/18 16:15	Dive07	-72.048395	41.2397	-50.818	65.9	IMG_7542.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161557Z.JPG	5/21/18 16:15	Dive07	-72.04839833	41.23970333	-50.74	70.8	IMG_7543.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161600Z.JPG	5/21/18 16:16	Dive07	-72.0484	41.23970667	-51.053	82.6	IMG_7544.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161603Z.JPG	5/21/18 16:16	Dive07	-72.04840167	41.23970833	-50.975	75.3	IMG_7545.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161606Z.JPG	5/21/18 16:16	Dive07	-72.04840167	41.23971	-50.975	74.2	IMG_7546.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161613Z.JPG	5/21/18 16:16	Dive07	-72.0484	41.23971333	-50.896	73.2	IMG_7548.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161617Z.JPG	5/21/18 16:16	Dive07	-72.04839667	41.23971167	-50.896	73.5	IMG_7549.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161629Z.JPG	5/21/18 16:16	Dive07	-72.04840333	41.23971	-50.896	95	IMG_7550.JPG	-1	SB66	NA		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180521T161638Z.JPG	5/21/18 16:16	Dive07	-72.04841	41.23971	-50.975	111.1	IMG_7551.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161708Z.JPG	5/21/18 16:17	Dive07	-72.04855	41.23964667	-52.933	106.9	IMG_7552.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153022Z.JPG	5/21/18 15:30	Dive07	-72.048465	41.23911667	-64.602	28.6	IMG_7276.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153132Z.JPG	5/21/18 15:31	Dive07	-72.04845833	41.23912167	-64.915	31.6	IMG_7279.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153151Z.JPG	5/21/18 15:31	Dive07	-72.048465	41.23912	-64.915	31.9	IMG_7280.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153505Z.JPG	5/21/18 15:35	Dive07	-72.04840667	41.23918833	-63.662	56	IMG_7295.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153609Z.JPG	5/21/18 15:36	Dive07	-72.04836	41.239215	-63.506	69.5	IMG_7303.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154000Z.JPG	5/21/18 15:40	Dive07	-72.04832667	41.23923333	-62.801	14.7	IMG_7319.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154345Z.JPG	5/21/18 15:43	Dive07	-72.04839	41.23928167	-63.114	70.7	IMG_7330.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154545Z.JPG	5/21/18 15:45	Dive07	-72.04833333	41.23932833	-62.018	67.3	IMG_7345.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154712Z.JPG	5/21/18 15:47	Dive07	-72.04829	41.23934833	-61.469	39.1	IMG_7352.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154816Z.JPG	5/21/18 15:48	Dive07	-72.04827167	41.23937167	-61.078	38.6	IMG_7360.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155529Z.JPG	5/21/18 15:55	Dive07	-72.04826667	41.23946833	-57.083	27.9	IMG_7405.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160157Z.JPG	5/21/18 16:01	Dive07	-72.04815	41.239605	-52.541	58.9	IMG_7450.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160352Z.JPG	5/21/18 16:03	Dive07	-72.04817	41.23965	-50.74	41.9	IMG_7468.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T160836Z.JPG	5/21/18 16:08	Dive07	-72.048115	41.23975	-46.98	54.8	IMG_7498.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161059Z.JPG	5/21/18 16:10	Dive07	-72.04814333	41.23974333	-47.528	71.3	IMG_7507.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161213Z.JPG	5/21/18 16:12	Dive07	-72.04820833	41.239695	-48.782	78.8	IMG_7518.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T161609Z.JPG	5/21/18 16:16	Dive07	-72.0484	41.23971167	-50.975	75	IMG_7547.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T152942Z.JPG	5/21/18 15:29	Dive07	-72.04846	41.23911667	-64.68	37.3	IMG_7275.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153350Z.JPG	5/21/18 15:33	Dive07	-72.04844667	41.23912667	-64.445	46.3	IMG_7286.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153511Z.JPG	5/21/18 15:35	Dive07	-72.04841	41.23919	-63.897	67.4	IMG_7296.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153516Z.JPG	5/21/18 15:35	Dive07	-72.04839833	41.239195	-63.662	84.2	IMG_7297.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153522Z.JPG	5/21/18 15:35	Dive07	-72.048395	41.23920333	-63.662	70.9	IMG_7298.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153527Z.JPG	5/21/18 15:35	Dive07	-72.04838833	41.23920333	-63.662	60.2	IMG_7299.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153536Z.JPG	5/21/18 15:35	Dive07	-72.04836833	41.239205	-63.349	52.1	IMG_7300.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153543Z.JPG	5/21/18 15:35	Dive07	-72.048365	41.239205	-63.271	59.9	IMG_7301.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153551Z.JPG	5/21/18 15:35	Dive07	-72.048365	41.23920833	-63.427	61.7	IMG_7302.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153727Z.JPG	5/21/18 15:37	Dive07	-72.04834333	41.23922167	-63.192	70.4	IMG_7304.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153747Z.JPG	5/21/18 15:37	Dive07	-72.04835	41.23921833	-63.506	66.3	IMG_7305.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153753Z.JPG	5/21/18 15:37	Dive07	-72.04834833	41.23921667	-63.114	67.5	IMG_7306.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153801Z.JPG	5/21/18 15:38	Dive07	-72.04834167	41.239215	-63.897	70.4	IMG_7307.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153822Z.JPG	5/21/18 15:38	Dive07	-72.04832333	41.23922833	-63.192	113.4	IMG_7309.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153845Z.JPG	5/21/18 15:38	Dive07	-72.048335	41.23923333	-63.114	138.6	IMG_7310.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153857Z.JPG	5/21/18 15:38	Dive07	-72.04833333	41.23923167	-63.192	83.7	IMG_7311.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153902Z.JPG	5/21/18 15:39	Dive07	-72.04833333	41.23923167	-62.566	53.5	IMG_7312.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T153924Z.JPG	5/21/18 15:39	Dive07	-72.04832333	41.239225	-63.036	354.7	IMG_7314.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154040Z.JPG	5/21/18 15:40	Dive07	-72.04836	41.239265	-63.349	34.4	IMG_7320.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154049Z.JPG	5/21/18 15:40	Dive07	-72.04836333	41.23927167	-63.114	37.8	IMG_7321.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154110Z.JPG	5/21/18 15:41	Dive07	-72.048375	41.239275	-63.192	37.5	IMG_7322.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154125Z.JPG	5/21/18 15:41	Dive07	-72.04838333	41.239275	-63.114	33.4	IMG_7323.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154248Z.JPG	5/21/18 15:42	Dive07	-72.048385	41.239265	-63.192	32.8	IMG_7324.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154301Z.JPG	5/21/18 15:43	Dive07	-72.04838	41.239265	-63.349	33.7	IMG_7325.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154316Z.JPG	5/21/18 15:43	Dive07	-72.048395	41.23926667	-62.722	35.5	IMG_7326.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154323Z.JPG	5/21/18 15:43	Dive07	-72.04839833	41.23926667	-62.957	49.4	IMG_7327.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T154329Z.JPG	5/21/18 15:43	Dive07	-72.04839	41.23926667	-62.957	46.9	IMG_7328.JPG	-1	SB66	NA		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180521T154339Z.JPG	5/21/18 15:43	Dive07	-72.048385	41.239275	-62.801	65	IMG_7329.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155943Z.JPG	5/21/18 15:59	Dive07	-72.048275	41.23952167	-55.047	48.5	IMG_7429.JPG	-1	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T155956Z.JPG	5/21/18 15:59	Dive07	-72.04830167	41.23951167	-55.204	53.5	IMG_7431.JPG	0	SB66	NA		
LISMaRC_Spring2018_ROV_PT_20180521T223355Z.JPG	5/21/18 22:33	Dive08	-72.06662667	41.19833667	-98.123	285	IMG_7553.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180521T223535Z.JPG	5/21/18 22:35	Dive08	-72.06665833	41.19833833	-98.044	287.7	IMG_7554.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180521T223555Z.JPG	5/21/18 22:35	Dive08	-72.06666167	41.19834	-97.888	287	IMG_7555.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180521T224207Z.JPG	5/21/18 22:42	Dive08	-72.06664833	41.19832167	-97.888	302.8	IMG_7556.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180521T224217Z.JPG	5/21/18 22:42	Dive08	-72.06665	41.19832333	-98.123	301.7	IMG_7557.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180521T224318Z.JPG	5/21/18 22:43	Dive08	-72.066635	41.198325	-97.731	302.3	IMG_7558.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180521T224531Z.JPG	5/21/18 22:45	Dive08	-72.066745	41.198335	-97.653	307.1	IMG_7559.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T120632Z.JPG	5/22/18 12:06	Dive09	-72.34627667	41.22774333	-43.143	66.3	IMG_7560.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T121039Z.JPG	5/22/18 12:10	Dive09	-72.34629833	41.22779	-43.221	46.4	IMG_7561.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T121112Z.JPG	5/22/18 12:11	Dive09	-72.34622333	41.22782333	-42.986	254.6	IMG_7562.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T121131Z.JPG	5/22/18 12:11	Dive09	-72.34622	41.227825	-42.986	253.8	IMG_7563.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T121336Z.JPG	5/22/18 12:13	Dive09	-72.34624333	41.22782	-42.829	250.1	IMG_7564.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T121411Z.JPG	5/22/18 12:14	Dive09	-72.34622167	41.22782167	-42.986	251.9	IMG_7565.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T121422Z.JPG	5/22/18 12:14	Dive09	-72.34621667	41.22782167	-42.829	250.8	IMG_7566.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T122659Z.JPG	5/22/18 12:26	Dive09	-72.34647167	41.22778167	-44.396	263.1	IMG_7567.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T122957Z.JPG	5/22/18 12:29	Dive09	-72.34647333	41.227785	-43.691	263.6	IMG_7569.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T123205Z.JPG	5/22/18 12:32	Dive09	-72.34648333	41.22779333	-43.769	256.3	IMG_7570.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T123222Z.JPG	5/22/18 12:32	Dive09	-72.34648167	41.227795	-43.926	256.9	IMG_7571.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T123308Z.JPG	5/22/18 12:33	Dive09	-72.34648667	41.227785	-43.456	256.9	IMG_7572.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T123344Z.JPG	5/22/18 12:33	Dive09	-72.34648833	41.22778333	-43.769	257.3	IMG_7573.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T123401Z.JPG	5/22/18 12:34	Dive09	-72.34648833	41.22778333	-43.534	256.1	IMG_7574.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T123522Z.JPG	5/22/18 12:35	Dive09	-72.34647167	41.22778833	-43.926	259.8	IMG_7575.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T123537Z.JPG	5/22/18 12:35	Dive09	-72.34647167	41.22778667	-44.396	258.3	IMG_7576.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T124804Z.JPG	5/22/18 12:48	Dive09	-72.34657833	41.227785	-43.299	253	IMG_7578.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T124817Z.JPG	5/22/18 12:48	Dive09	-72.34658333	41.22778833	-43.456	249.1	IMG_7579.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T125008Z.JPG	5/22/18 12:50	Dive09	-72.34657333	41.22776167	-43.534	235.8	IMG_7580.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T125032Z.JPG	5/22/18 12:50	Dive09	-72.34658167	41.22775333	-43.299	246.2	IMG_7581.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T125051Z.JPG	5/22/18 12:50	Dive09	-72.34657667	41.22773167	-43.534	240.1	IMG_7582.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T125112Z.JPG	5/22/18 12:51	Dive09	-72.34660167	41.227725	-43.534	239.9	IMG_7583.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T125130Z.JPG	5/22/18 12:51	Dive09	-72.34661167	41.22770833	-43.613	238.1	IMG_7584.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T125155Z.JPG	5/22/18 12:51	Dive09	-72.346605	41.22767833	-43.534	242.5	IMG_7585.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T125638Z.JPG	5/22/18 12:56	Dive09	-72.34672167	41.22764833	-43.848	252.3	IMG_7587.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T125954Z.JPG	5/22/18 12:59	Dive09	-72.34690333	41.22758833	-43.613	251.1	IMG_7588.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T130020Z.JPG	5/22/18 13:00	Dive09	-72.34691833	41.22758833	-43.613	257.6	IMG_7589.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T130030Z.JPG	5/22/18 13:00	Dive09	-72.34691833	41.22758833	-43.691	257.9	IMG_7590.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T130039Z.JPG	5/22/18 13:00	Dive09	-72.346915	41.22758667	-43.848	258.4	IMG_7591.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T130113Z.JPG	5/22/18 13:01	Dive09	-72.34690833	41.22758833	-43.926	263.8	IMG_7592.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T130434Z.JPG	5/22/18 13:04	Dive09	-72.34687667	41.22756833	-43.926	264.7	IMG_7594.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T130449Z.JPG	5/22/18 13:04	Dive09	-72.346875	41.22757667	-44.396	265.4	IMG_7595.JPG	1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T130457Z.JPG	5/22/18 13:04	Dive09	-72.34687	41.227575	-44.004	262.6	IMG_7596.JPG	1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T130508Z.JPG	5/22/18 13:05	Dive09	-72.34687	41.22757	-43.848	262.2	IMG_7597.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T130618Z.JPG	5/22/18 13:06	Dive09	-72.34688667	41.227565	-43.848	261.3	IMG_7598.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T131210Z.JPG	5/22/18 13:12	Dive09	-72.34690667	41.22758833	-43.848	287.9	IMG_7599.JPG	0	SB39	NA		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180522T131259Z.JPG	5/22/18 13:12	Dive09	-72.34692	41.22759833	-43.769	277.4	IMG_7601.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T131310Z.JPG	5/22/18 13:13	Dive09	-72.346925	41.2276	-44.082	275.3	IMG_7602.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T131350Z.JPG	5/22/18 13:13	Dive09	-72.34694333	41.22760333	-43.613	271.1	IMG_7603.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T132624Z.JPG	5/22/18 13:26	Dive09	-72.34719667	41.22761833	-44.317	274.8	IMG_7604.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T132755Z.JPG	5/22/18 13:27	Dive09	-72.34719667	41.22763	-44.317	259	IMG_7605.JPG	1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T132810Z.JPG	5/22/18 13:28	Dive09	-72.34719	41.22762667	-44.552	263.5	IMG_7606.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T132910Z.JPG	5/22/18 13:29	Dive09	-72.34720833	41.22760833	-44.474	267.6	IMG_7607.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T133035Z.JPG	5/22/18 13:30	Dive09	-72.347245	41.22760833	-44.709	244.5	IMG_7608.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T133045Z.JPG	5/22/18 13:30	Dive09	-72.34725167	41.22761167	-44.552	241.9	IMG_7609.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T133055Z.JPG	5/22/18 13:30	Dive09	-72.34726167	41.227615	-44.474	242.6	IMG_7610.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T133213Z.JPG	5/22/18 13:32	Dive09	-72.34727	41.22761167	-44.552	239.5	IMG_7611.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T133238Z.JPG	5/22/18 13:32	Dive09	-72.347295	41.22761833	-44.552	240.1	IMG_7612.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T133445Z.JPG	5/22/18 13:34	Dive09	-72.347245	41.227605	-44.474	240	IMG_7613.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134025Z.JPG	5/22/18 13:40	Dive09	-72.34718667	41.22756167	-44.474	286	IMG_7614.JPG	1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134031Z.JPG	5/22/18 13:40	Dive09	-72.34718667	41.22756167	-44.474	285.8	IMG_7615.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134044Z.JPG	5/22/18 13:40	Dive09	-72.347195	41.22756167	-44.474	291	IMG_7616.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134051Z.JPG	5/22/18 13:40	Dive09	-72.34720167	41.22756167	-44.552	291.7	IMG_7617.JPG	1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134100Z.JPG	5/22/18 13:41	Dive09	-72.34721	41.22756333	-44.239	300.9	IMG_7618.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134105Z.JPG	5/22/18 13:41	Dive09	-72.34721333	41.22756333	-44.396	297.3	IMG_7619.JPG	1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134111Z.JPG	5/22/18 13:41	Dive09	-72.347215	41.22756333	-44.474	296.4	IMG_7620.JPG	1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134114Z.JPG	5/22/18 13:41	Dive09	-72.34721167	41.22756167	-44.396	297.6	IMG_7621.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134137Z.JPG	5/22/18 13:41	Dive09	-72.34720833	41.22756167	-44.552	297.4	IMG_7622.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134151Z.JPG	5/22/18 13:41	Dive09	-72.34720833	41.22756333	-44.317	296.8	IMG_7623.JPG	1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134233Z.JPG	5/22/18 13:42	Dive09	-72.34721333	41.22753833	-44.317	310.3	IMG_7624.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134336Z.JPG	5/22/18 13:43	Dive09	-72.347225	41.227545	-44.552	288.6	IMG_7625.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134403Z.JPG	5/22/18 13:44	Dive09	-72.34722833	41.22753667	-44.239	285.3	IMG_7626.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134412Z.JPG	5/22/18 13:44	Dive09	-72.34723167	41.227535	-44.474	286.2	IMG_7627.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134422Z.JPG	5/22/18 13:44	Dive09	-72.347235	41.22753333	-44.396	285.9	IMG_7628.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134450Z.JPG	5/22/18 13:44	Dive09	-72.34724333	41.22754167	-44.239	298.4	IMG_7629.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134501Z.JPG	5/22/18 13:45	Dive09	-72.347245	41.227545	-44.709	304.1	IMG_7630.JPG	1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134511Z.JPG	5/22/18 13:45	Dive09	-72.34725333	41.22754667	-44.474	300.1	IMG_7631.JPG	1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134536Z.JPG	5/22/18 13:45	Dive09	-72.34724167	41.22754333	-44.161	300.8	IMG_7632.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134549Z.JPG	5/22/18 13:45	Dive09	-72.34724667	41.22754167	-44.396	300.8	IMG_7633.JPG	1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134610Z.JPG	5/22/18 13:46	Dive09	-72.34725667	41.22754	-44.161	301.2	IMG_7634.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134620Z.JPG	5/22/18 13:46	Dive09	-72.347255	41.22754167	-44.082	303.6	IMG_7635.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134648Z.JPG	5/22/18 13:46	Dive09	-72.34725333	41.22754667	-44.317	307.5	IMG_7636.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134701Z.JPG	5/22/18 13:47	Dive09	-72.34724667	41.22754667	-44.082	307.5	IMG_7637.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134712Z.JPG	5/22/18 13:47	Dive09	-72.34724667	41.227545	-44.239	307.4	IMG_7638.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134722Z.JPG	5/22/18 13:47	Dive09	-72.34724833	41.22754667	-44.317	306.8	IMG_7639.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134730Z.JPG	5/22/18 13:47	Dive09	-72.34724667	41.22754667	-44.787	307	IMG_7640.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134738Z.JPG	5/22/18 13:47	Dive09	-72.34724667	41.22754833	-44.317	307.2	IMG_7641.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134915Z.JPG	5/22/18 13:49	Dive09	-72.34724667	41.22754333	-44.082	306.3	IMG_7642.JPG	1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134933Z.JPG	5/22/18 13:49	Dive09	-72.34725167	41.227545	-44.317	307.4	IMG_7643.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T134956Z.JPG	5/22/18 13:49	Dive09	-72.347255	41.227545	-44.396	308.6	IMG_7644.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T135003Z.JPG	5/22/18 13:50	Dive09	-72.34726	41.227545	-44.317	309.1	IMG_7645.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T135050Z.JPG	5/22/18 13:50	Dive09	-72.347255	41.22754833	-44.552	251.7	IMG_7646.JPG	0	SB39	NA		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180522T135102Z.JPG	5/22/18 13:51	Dive09	-72.34726	41.22755833	-44.317	233	IMG_7647.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T135219Z.JPG	5/22/18 13:52	Dive09	-72.3473	41.22756333	-44.474	234	IMG_7648.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T135235Z.JPG	5/22/18 13:52	Dive09	-72.3473	41.22756333	-44.317	234.8	IMG_7649.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T135247Z.JPG	5/22/18 13:52	Dive09	-72.3473	41.22756167	-44.396	234.4	IMG_7650.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T135310Z.JPG	5/22/18 13:53	Dive09	-72.3473	41.22756167	-44.317	235.4	IMG_7652.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T135320Z.JPG	5/22/18 13:53	Dive09	-72.34729833	41.22756333	-44.239	234.9	IMG_7653.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T135334Z.JPG	5/22/18 13:53	Dive09	-72.34730167	41.22755833	-44.082	233.7	IMG_7654.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T135404Z.JPG	5/22/18 13:54	Dive09	-72.347295	41.22755333	-44.474	233.5	IMG_7655.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T135414Z.JPG	5/22/18 13:54	Dive09	-72.34729667	41.22755667	-44.317	233.4	IMG_7656.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T135421Z.JPG	5/22/18 13:54	Dive09	-72.34729333	41.22755833	-44.161	233.1	IMG_7657.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T135704Z.JPG	5/22/18 13:57	Dive09	-72.34733333	41.22754	-44.161	225.4	IMG_7658.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T135715Z.JPG	5/22/18 13:57	Dive09	-72.34732667	41.22753667	-44.239	225.7	IMG_7659.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T135733Z.JPG	5/22/18 13:57	Dive09	-72.34731833	41.227535	-44.004	223.8	IMG_7660.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T135746Z.JPG	5/22/18 13:57	Dive09	-72.34731	41.22753833	-44.239	224.3	IMG_7661.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T135846Z.JPG	5/22/18 13:58	Dive09	-72.34729667	41.227535	-44.161	239.7	IMG_7662.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T135857Z.JPG	5/22/18 13:58	Dive09	-72.347295	41.22753	-44.239	239.2	IMG_7663.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T135908Z.JPG	5/22/18 13:59	Dive09	-72.3473	41.22753	-44.004	238.9	IMG_7664.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T135925Z.JPG	5/22/18 13:59	Dive09	-72.347305	41.22753167	-44.004	240.2	IMG_7665.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T135956Z.JPG	5/22/18 13:59	Dive09	-72.34731167	41.227535	-44.161	243	IMG_7667.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T140010Z.JPG	5/22/18 14:00	Dive09	-72.34731667	41.227535	-44.082	243.5	IMG_7668.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T140026Z.JPG	5/22/18 14:00	Dive09	-72.34731833	41.227535	-44.004	243.6	IMG_7669.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T140208Z.JPG	5/22/18 14:02	Dive09	-72.34732167	41.22753333	-44.082	233.6	IMG_7670.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T140318Z.JPG	5/22/18 14:03	Dive09	-72.34731833	41.227535	-43.926	233.3	IMG_7671.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T144231Z.JPG	5/22/18 14:42	Dive09	-72.347725	41.22755	1.891	274.9	IMG_7674.JPG	-1323	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T122939Z.JPG	5/22/18 12:29	Dive09	-72.34647667	41.22777167	-43.848	264.7	IMG_7568.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T124358Z.JPG	5/22/18 12:43	Dive09	-72.346475	41.22777667	-44.082	256.1	IMG_7577.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T125202Z.JPG	5/22/18 12:52	Dive09	-72.34660833	41.22767667	-43.613	244.3	IMG_7586.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T130420Z.JPG	5/22/18 13:04	Dive09	-72.34687833	41.22756667	-44.004	264.2	IMG_7593.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T131225Z.JPG	5/22/18 13:12	Dive09	-72.34690833	41.22758833	-43.926	285.9	IMG_7600.JPG	-1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T135258Z.JPG	5/22/18 13:52	Dive09	-72.3473	41.22756167	-44.317	235.9	IMG_7651.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T135945Z.JPG	5/22/18 13:59	Dive09	-72.34730667	41.22753333	-44.239	241.2	IMG_7666.JPG	1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T140733Z.JPG	5/22/18 14:07	Dive09	-72.34731667	41.227535	-44.474	233.7	IMG_7672.JPG	1	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T141114Z.JPG	5/22/18 14:11	Dive09	-72.347295	41.22753167	-44.082	232.9	IMG_7673.JPG	0	SB39	NA		
LISMaRC_Spring2018_ROV_PT_20180522T151851Z.JPG	5/22/18 15:18	Dive10	-72.36220667	41.221535	-43.691	43.7	IMG_7675.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T151907Z.JPG	5/22/18 15:19	Dive10	-72.36219333	41.22153333	-44.004	257.6	IMG_7676.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T151945Z.JPG	5/22/18 15:19	Dive10	-72.36217167	41.22153833	-43.534	257.3	IMG_7677.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T152038Z.JPG	5/22/18 15:20	Dive10	-72.36216667	41.22151	-43.534	257.5	IMG_7678.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T152048Z.JPG	5/22/18 15:20	Dive10	-72.362165	41.221505	-43.456	256.8	IMG_7679.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T152107Z.JPG	5/22/18 15:21	Dive10	-72.36216	41.22149667	-43.769	258.2	IMG_7680.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T152118Z.JPG	5/22/18 15:21	Dive10	-72.36216	41.22149167	-43.143	258.1	IMG_7681.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T152126Z.JPG	5/22/18 15:21	Dive10	-72.36215833	41.22149167	-43.769	258.2	IMG_7682.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T152206Z.JPG	5/22/18 15:22	Dive10	-72.36218167	41.22149333	-43.613	254.7	IMG_7683.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T152239Z.JPG	5/22/18 15:22	Dive10	-72.36218167	41.22150167	-43.613	254.4	IMG_7685.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T152252Z.JPG	5/22/18 15:22	Dive10	-72.36218833	41.2215	-43.769	254.7	IMG_7686.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T152307Z.JPG	5/22/18 15:23	Dive10	-72.36218833	41.22150333	-43.691	255.7	IMG_7687.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T152327Z.JPG	5/22/18 15:23	Dive10	-72.36218	41.22150167	-43.378	256.8	IMG_7688.JPG	-1	NA	NB20		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180522T152336Z.JPG	5/22/18 15:23	Dive10	-72.36218333	41.22150167	-43.456	257	IMG_7689.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T152353Z.JPG	5/22/18 15:23	Dive10	-72.36218667	41.22150167	-43.378	257.1	IMG_7690.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T152402Z.JPG	5/22/18 15:24	Dive10	-72.362185	41.2215	-43.691	257.1	IMG_7691.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T152410Z.JPG	5/22/18 15:24	Dive10	-72.362185	41.2215	-43.691	257.7	IMG_7692.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T152452Z.JPG	5/22/18 15:24	Dive10	-72.36218833	41.22149833	-43.613	253.2	IMG_7693.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T152512Z.JPG	5/22/18 15:25	Dive10	-72.362205	41.22147667	-43.691	261.2	IMG_7694.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T152557Z.JPG	5/22/18 15:25	Dive10	-72.36221833	41.22144833	-43.926	260.9	IMG_7696.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T152619Z.JPG	5/22/18 15:26	Dive10	-72.36221833	41.22144167	-43.848	260.6	IMG_7697.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T152631Z.JPG	5/22/18 15:26	Dive10	-72.36221333	41.22143833	-43.769	261.3	IMG_7698.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T152704Z.JPG	5/22/18 15:27	Dive10	-72.36220167	41.22143	-43.769	262	IMG_7699.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T152731Z.JPG	5/22/18 15:27	Dive10	-72.362205	41.22142333	-43.848	261.6	IMG_7700.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T153034Z.JPG	5/22/18 15:30	Dive10	-72.36216167	41.22137	-43.848	294	IMG_7701.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T153105Z.JPG	5/22/18 15:31	Dive10	-72.36216167	41.22137	-43.691	293.6	IMG_7702.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T153134Z.JPG	5/22/18 15:31	Dive10	-72.36216167	41.22137	-43.769	294.2	IMG_7703.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T153208Z.JPG	5/22/18 15:32	Dive10	-72.36216167	41.22137	-43.769	294.4	IMG_7704.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T153229Z.JPG	5/22/18 15:32	Dive10	-72.36216167	41.22137	-44.004	295.6	IMG_7705.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T153309Z.JPG	5/22/18 15:33	Dive10	-72.36216167	41.22137	-43.769	294.4	IMG_7707.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T153319Z.JPG	5/22/18 15:33	Dive10	-72.36216167	41.22137	-43.691	294.4	IMG_7708.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T153332Z.JPG	5/22/18 15:33	Dive10	-72.36216167	41.22137	-43.769	294.6	IMG_7709.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T153355Z.JPG	5/22/18 15:33	Dive10	-72.36216167	41.22137	-43.534	293.3	IMG_7710.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T153425Z.JPG	5/22/18 15:34	Dive10	-72.36216167	41.22137	-43.534	294.7	IMG_7711.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T153437Z.JPG	5/22/18 15:34	Dive10	-72.36216167	41.22137	-43.613	294.1	IMG_7712.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T153452Z.JPG	5/22/18 15:34	Dive10	-72.36216167	41.22137	-43.613	294.5	IMG_7713.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T153504Z.JPG	5/22/18 15:35	Dive10	-72.36216167	41.22137	-43.613	293.6	IMG_7714.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T153630Z.JPG	5/22/18 15:36	Dive10	-72.36216167	41.22137	-43.613	294.5	IMG_7715.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T153847Z.JPG	5/22/18 15:38	Dive10	-72.36216833	41.22149	-43.926	293.7	IMG_7716.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T153914Z.JPG	5/22/18 15:39	Dive10	-72.362175	41.221485	-43.691	292.9	IMG_7717.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T153927Z.JPG	5/22/18 15:39	Dive10	-72.362175	41.22148667	-43.926	293.5	IMG_7718.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T154046Z.JPG	5/22/18 15:40	Dive10	-72.362175	41.22148833	-43.769	294	IMG_7719.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T154117Z.JPG	5/22/18 15:41	Dive10	-72.36218	41.22148667	-43.848	275.7	IMG_7720.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T154151Z.JPG	5/22/18 15:41	Dive10	-72.3622	41.22148833	-44.004	262	IMG_7721.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T154159Z.JPG	5/22/18 15:41	Dive10	-72.36221833	41.22147667	-43.299	260.4	IMG_7722.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T154206Z.JPG	5/22/18 15:42	Dive10	-72.36221167	41.22147833	-43.691	259.1	IMG_7723.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T154216Z.JPG	5/22/18 15:42	Dive10	-72.36222167	41.22147	-43.848	260.1	IMG_7724.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T154306Z.JPG	5/22/18 15:43	Dive10	-72.36226167	41.22147833	-44.004	265	IMG_7725.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T154315Z.JPG	5/22/18 15:43	Dive10	-72.36227333	41.22147667	-43.691	265.6	IMG_7726.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T154321Z.JPG	5/22/18 15:43	Dive10	-72.36227333	41.22147667	-44.082	265.6	IMG_7727.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T154332Z.JPG	5/22/18 15:43	Dive10	-72.36228667	41.22147667	-44.004	268.1	IMG_7728.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T154421Z.JPG	5/22/18 15:44	Dive10	-72.36230167	41.22147	-43.769	269.3	IMG_7730.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T154441Z.JPG	5/22/18 15:44	Dive10	-72.36226333	41.22143	-43.769	269	IMG_7731.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T154452Z.JPG	5/22/18 15:44	Dive10	-72.36225	41.22141833	-43.691	269	IMG_7732.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T154502Z.JPG	5/22/18 15:45	Dive10	-72.36223667	41.221405	-43.691	268.9	IMG_7733.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T154512Z.JPG	5/22/18 15:45	Dive10	-72.36225667	41.22142833	-43.769	268.9	IMG_7734.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T154715Z.JPG	5/22/18 15:47	Dive10	-72.362325	41.22150167	-43.926	270	IMG_7735.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T154724Z.JPG	5/22/18 15:47	Dive10	-72.362325	41.22150167	-43.926	269.9	IMG_7736.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T154738Z.JPG	5/22/18 15:47	Dive10	-72.362325	41.22150167	-43.691	269.6	IMG_7737.JPG	0	NA	NB20		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180522T154749Z.JPG	5/22/18 15:47	Dive10	-72.36227833	41.22145	-43.613	269.1	IMG_7738.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T154812Z.JPG	5/22/18 15:48	Dive10	-72.36227	41.22143833	-43.691	268.9	IMG_7740.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T154843Z.JPG	5/22/18 15:48	Dive10	-72.36227	41.22143833	-43.926	269.7	IMG_7741.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T154851Z.JPG	5/22/18 15:48	Dive10	-72.36227	41.22143833	-43.926	269.8	IMG_7742.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T154903Z.JPG	5/22/18 15:49	Dive10	-72.36227	41.22143833	-43.691	269.7	IMG_7743.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T154933Z.JPG	5/22/18 15:49	Dive10	-72.36227	41.22143833	-43.221	268.9	IMG_7744.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155011Z.JPG	5/22/18 15:50	Dive10	-72.36227	41.22143833	-43.848	269.7	IMG_7745.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155057Z.JPG	5/22/18 15:50	Dive10	-72.36227	41.22143833	-43.456	274.9	IMG_7746.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155105Z.JPG	5/22/18 15:51	Dive10	-72.36227	41.22143833	-43.769	272.9	IMG_7747.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155123Z.JPG	5/22/18 15:51	Dive10	-72.36223333	41.22139667	-43.378	273.5	IMG_7748.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155129Z.JPG	5/22/18 15:51	Dive10	-72.36224	41.22140167	-43.769	272.4	IMG_7749.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155155Z.JPG	5/22/18 15:51	Dive10	-72.36225167	41.22140167	-43.613	276.5	IMG_7750.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155213Z.JPG	5/22/18 15:52	Dive10	-72.362255	41.22140667	-43.456	276.2	IMG_7752.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155237Z.JPG	5/22/18 15:52	Dive10	-72.36225167	41.22140667	-43.613	275.2	IMG_7753.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155300Z.JPG	5/22/18 15:53	Dive10	-72.36223	41.22139167	-43.848	275.1	IMG_7754.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155322Z.JPG	5/22/18 15:53	Dive10	-72.36224667	41.22141333	-44.004	275.3	IMG_7755.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155350Z.JPG	5/22/18 15:53	Dive10	-72.36225167	41.22141333	-43.691	276.2	IMG_7756.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155407Z.JPG	5/22/18 15:54	Dive10	-72.36225833	41.22142333	-43.613	276.8	IMG_7757.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155425Z.JPG	5/22/18 15:54	Dive10	-72.36226333	41.22142333	-43.534	277.2	IMG_7758.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155507Z.JPG	5/22/18 15:55	Dive10	-72.36227333	41.221425	-43.378	276.6	IMG_7759.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155520Z.JPG	5/22/18 15:55	Dive10	-72.36227167	41.221445	-43.691	277.5	IMG_7760.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155608Z.JPG	5/22/18 15:56	Dive10	-72.362285	41.22143667	-43.613	295.8	IMG_7761.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155627Z.JPG	5/22/18 15:56	Dive10	-72.36227667	41.22143333	-43.613	287.8	IMG_7763.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155643Z.JPG	5/22/18 15:56	Dive10	-72.36228833	41.22143	-43.613	272.8	IMG_7764.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155655Z.JPG	5/22/18 15:56	Dive10	-72.36228833	41.22143	-43.926	273	IMG_7765.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155703Z.JPG	5/22/18 15:57	Dive10	-72.36229167	41.22143	-44.082	280	IMG_7766.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155710Z.JPG	5/22/18 15:57	Dive10	-72.36228833	41.221425	-43.691	289.8	IMG_7767.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155715Z.JPG	5/22/18 15:57	Dive10	-72.36228833	41.221425	-43.613	290.6	IMG_7768.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155726Z.JPG	5/22/18 15:57	Dive10	-72.36230333	41.22143833	-43.534	294.8	IMG_7769.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155731Z.JPG	5/22/18 15:57	Dive10	-72.36231	41.22143667	-43.299	291.4	IMG_7770.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155739Z.JPG	5/22/18 15:57	Dive10	-72.36231333	41.22143667	-43.456	293.6	IMG_7771.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155750Z.JPG	5/22/18 15:57	Dive10	-72.36233	41.22143833	-43.534	284.4	IMG_7772.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155756Z.JPG	5/22/18 15:57	Dive10	-72.36233833	41.221435	-43.691	287.5	IMG_7773.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155806Z.JPG	5/22/18 15:58	Dive10	-72.36234667	41.22143	-43.534	293.2	IMG_7774.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155813Z.JPG	5/22/18 15:58	Dive10	-72.36234333	41.22142333	-43.613	303.5	IMG_7775.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155819Z.JPG	5/22/18 15:58	Dive10	-72.36234333	41.22142333	-43.613	300.4	IMG_7776.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155824Z.JPG	5/22/18 15:58	Dive10	-72.362345	41.22142	-43.769	294.3	IMG_7777.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155831Z.JPG	5/22/18 15:58	Dive10	-72.36234667	41.22141833	-43.456	286.1	IMG_7778.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155839Z.JPG	5/22/18 15:58	Dive10	-72.36235667	41.22141833	-43.613	279.6	IMG_7779.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155850Z.JPG	5/22/18 15:58	Dive10	-72.36237167	41.22143	-43.848	286.7	IMG_7780.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155859Z.JPG	5/22/18 15:58	Dive10	-72.36237	41.221435	-43.378	289.5	IMG_7781.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155904Z.JPG	5/22/18 15:59	Dive10	-72.36235833	41.22143833	-43.378	297.7	IMG_7782.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155913Z.JPG	5/22/18 15:59	Dive10	-72.36237	41.22143	-43.456	306.6	IMG_7783.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155918Z.JPG	5/22/18 15:59	Dive10	-72.36236667	41.22142667	-43.691	306.8	IMG_7784.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155946Z.JPG	5/22/18 15:59	Dive10	-72.36237833	41.22142333	-43.534	338.4	IMG_7785.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T160001Z.JPG	5/22/18 16:00	Dive10	-72.36238	41.22142	-43.378	339.5	IMG_7786.JPG	-1	NA	NB20		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180522T160023Z.JPG	5/22/18 16:00	Dive10	-72.36240333	41.22143667	-43.299	350.6	IMG_7787.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T160045Z.JPG	5/22/18 16:00	Dive10	-72.36241167	41.22143667	-43.378	349.2	IMG_7788.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T160053Z.JPG	5/22/18 16:00	Dive10	-72.36241	41.22143833	-43.456	350.3	IMG_7789.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T160103Z.JPG	5/22/18 16:01	Dive10	-72.3624	41.221435	-43.456	351.2	IMG_7790.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T160110Z.JPG	5/22/18 16:01	Dive10	-72.36239833	41.22143	-43.456	349.4	IMG_7791.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T160128Z.JPG	5/22/18 16:01	Dive10	-72.36240667	41.22143	-43.143	350.8	IMG_7792.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T160137Z.JPG	5/22/18 16:01	Dive10	-72.36240833	41.22143	-43.378	350.2	IMG_7793.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T160150Z.JPG	5/22/18 16:01	Dive10	-72.362405	41.22143833	-43.456	349.9	IMG_7794.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T160158Z.JPG	5/22/18 16:01	Dive10	-72.36239667	41.22143833	-43.456	349.3	IMG_7795.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T160329Z.JPG	5/22/18 16:03	Dive10	-72.362405	41.22142667	-43.534	351.1	IMG_7796.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T160338Z.JPG	5/22/18 16:03	Dive10	-72.362405	41.22142667	-43.221	350.1	IMG_7797.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T160535Z.JPG	5/22/18 16:05	Dive10	-72.36239667	41.22143833	-43.378	350.5	IMG_7799.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T160635Z.JPG	5/22/18 16:06	Dive10	-72.36239667	41.22142833	-43.143	343.2	IMG_7800.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T160641Z.JPG	5/22/18 16:06	Dive10	-72.36239667	41.22142833	-43.299	350.1	IMG_7801.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T160646Z.JPG	5/22/18 16:06	Dive10	-72.36241167	41.22144	-43.064	355.8	IMG_7802.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T160753Z.JPG	5/22/18 16:07	Dive10	-72.36243167	41.22146167	-43.378	6.8	IMG_7803.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T160922Z.JPG	5/22/18 16:09	Dive10	-72.36243	41.221455	-43.221	7.8	IMG_7804.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T161016Z.JPG	5/22/18 16:10	Dive10	-72.36243	41.22145167	-43.221	8.1	IMG_7806.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T161025Z.JPG	5/22/18 16:10	Dive10	-72.36243167	41.22145833	-43.456	8.2	IMG_7807.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T161203Z.JPG	5/22/18 16:12	Dive10	-72.36243333	41.22146167	-43.534	272.5	IMG_7808.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T161218Z.JPG	5/22/18 16:12	Dive10	-72.36243167	41.22147333	-42.908	157.8	IMG_7809.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T161223Z.JPG	5/22/18 16:12	Dive10	-72.36244	41.22147333	-42.986	142.5	IMG_7810.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T161231Z.JPG	5/22/18 16:12	Dive10	-72.36244333	41.22146833	-43.299	181.7	IMG_7811.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T161236Z.JPG	5/22/18 16:12	Dive10	-72.36244167	41.22145833	-43.221	183.1	IMG_7812.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T161247Z.JPG	5/22/18 16:12	Dive10	-72.36243167	41.22142833	-43.299	179.2	IMG_7813.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T161358Z.JPG	5/22/18 16:13	Dive10	-72.36237667	41.22134333	-43.456	166	IMG_7814.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T161416Z.JPG	5/22/18 16:14	Dive10	-72.362375	41.22134	-43.299	165	IMG_7815.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T161435Z.JPG	5/22/18 16:14	Dive10	-72.36239167	41.22134	-43.534	165.5	IMG_7816.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T161517Z.JPG	5/22/18 16:15	Dive10	-72.36239667	41.22133833	-43.691	164.7	IMG_7818.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T161524Z.JPG	5/22/18 16:15	Dive10	-72.36240667	41.22133667	-43.456	165.7	IMG_7819.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T161530Z.JPG	5/22/18 16:15	Dive10	-72.36240833	41.22133667	-43.848	164.9	IMG_7820.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T161601Z.JPG	5/22/18 16:16	Dive10	-72.36238667	41.22134	-43.534	166.3	IMG_7821.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T161613Z.JPG	5/22/18 16:16	Dive10	-72.36239	41.22134167	-43.143	165.2	IMG_7822.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T161623Z.JPG	5/22/18 16:16	Dive10	-72.36239167	41.22134167	-43.534	166.3	IMG_7823.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T161639Z.JPG	5/22/18 16:16	Dive10	-72.362385	41.22133667	-43.613	166	IMG_7824.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T161755Z.JPG	5/22/18 16:17	Dive10	-72.36238333	41.22133333	-43.613	165	IMG_7825.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T161810Z.JPG	5/22/18 16:18	Dive10	-72.36236	41.221335	-43.534	167.1	IMG_7826.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T162029Z.JPG	5/22/18 16:20	Dive10	-72.36242333	41.22131833	-43.456	146.9	IMG_7827.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T162051Z.JPG	5/22/18 16:20	Dive10	-72.36242833	41.22128333	-43.534	106.7	IMG_7828.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T162110Z.JPG	5/22/18 16:21	Dive10	-72.36242	41.22126333	-44.082	102.3	IMG_7829.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T162145Z.JPG	5/22/18 16:21	Dive10	-72.36242	41.221265	-43.221	103.7	IMG_7830.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T162330Z.JPG	5/22/18 16:23	Dive10	-72.36241667	41.22126667	-43.613	100.7	IMG_7832.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T162351Z.JPG	5/22/18 16:23	Dive10	-72.36241667	41.221265	-44.004	101.3	IMG_7833.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T162401Z.JPG	5/22/18 16:24	Dive10	-72.362415	41.22126167	-43.613	101.5	IMG_7834.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T162421Z.JPG	5/22/18 16:24	Dive10	-72.36241667	41.22125833	-43.769	100.9	IMG_7835.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T162504Z.JPG	5/22/18 16:25	Dive10	-72.36241833	41.22127	-43.848	100.2	IMG_7836.JPG	0	NA	NB20		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180522T162640Z.JPG	5/22/18 16:26	Dive10	-72.36242167	41.22126167	-43.613	77.3	IMG_7837.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T162653Z.JPG	5/22/18 16:26	Dive10	-72.36241	41.22126167	-43.613	71.1	IMG_7838.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T162704Z.JPG	5/22/18 16:27	Dive10	-72.36239167	41.22126333	-43.769	82.3	IMG_7839.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T162711Z.JPG	5/22/18 16:27	Dive10	-72.36238333	41.22126167	-43.534	80.4	IMG_7840.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T162730Z.JPG	5/22/18 16:27	Dive10	-72.36234667	41.22126333	-43.848	77	IMG_7841.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T162736Z.JPG	5/22/18 16:27	Dive10	-72.362335	41.221265	-43.691	80.4	IMG_7842.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T162808Z.JPG	5/22/18 16:28	Dive10	-72.36230667	41.22126167	-43.769	86.8	IMG_7843.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T162819Z.JPG	5/22/18 16:28	Dive10	-72.36230167	41.22126167	-43.769	89.7	IMG_7844.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T162939Z.JPG	5/22/18 16:29	Dive10	-72.36224167	41.22124833	-44.082	64.4	IMG_7845.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T163126Z.JPG	5/22/18 16:31	Dive10	-72.36223667	41.221245	-44.317	63.5	IMG_7846.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T163505Z.JPG	5/22/18 16:35	Dive10	-72.36221167	41.22126833	-44.004	53.4	IMG_7847.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T164042Z.JPG	5/22/18 16:40	Dive10	-72.36210333	41.2213	-44.082	82.2	IMG_7848.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T164524Z.JPG	5/22/18 16:45	Dive10	-72.36208167	41.221285	-44.004	71.9	IMG_7849.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T164601Z.JPG	5/22/18 16:46	Dive10	-72.362075	41.22129167	-43.848	72.6	IMG_7850.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T164641Z.JPG	5/22/18 16:46	Dive10	-72.36206667	41.22129333	-44.317	74.1	IMG_7851.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T164656Z.JPG	5/22/18 16:46	Dive10	-72.36206833	41.22128833	-44.161	73.5	IMG_7852.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T164742Z.JPG	5/22/18 16:47	Dive10	-72.36206667	41.22129167	-44.082	74.4	IMG_7853.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T165106Z.JPG	5/22/18 16:51	Dive10	-72.36206167	41.22128667	-44.317	73.4	IMG_7855.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T165218Z.JPG	5/22/18 16:52	Dive10	-72.362055	41.22129	-43.534	67.1	IMG_7856.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T165839Z.JPG	5/22/18 16:58	Dive10	-72.36184333	41.221275	-43.848	82.4	IMG_7857.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T165857Z.JPG	5/22/18 16:58	Dive10	-72.36183667	41.22125167	-43.769	82.7	IMG_7858.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T170620Z.JPG	5/22/18 17:06	Dive10	-72.36174667	41.22123333	-43.143	107.5	IMG_7859.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T170639Z.JPG	5/22/18 17:06	Dive10	-72.36175333	41.22122667	-43.221	102	IMG_7860.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T170652Z.JPG	5/22/18 17:06	Dive10	-72.36175	41.22122667	-43.064	106.9	IMG_7861.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T170706Z.JPG	5/22/18 17:07	Dive10	-72.36174167	41.22122833	-43.691	107.2	IMG_7862.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T170732Z.JPG	5/22/18 17:07	Dive10	-72.36175167	41.22122	-43.299	101.2	IMG_7863.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T170754Z.JPG	5/22/18 17:07	Dive10	-72.36174833	41.22122667	-43.143	100	IMG_7864.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T170849Z.JPG	5/22/18 17:08	Dive10	-72.36174667	41.221225	-43.299	103.9	IMG_7866.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T170900Z.JPG	5/22/18 17:09	Dive10	-72.36174833	41.221225	-43.456	113	IMG_7867.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T170945Z.JPG	5/22/18 17:09	Dive10	-72.36175	41.22122667	-42.986	112	IMG_7868.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T171050Z.JPG	5/22/18 17:10	Dive10	-72.36173667	41.221235	-44.004	112.9	IMG_7869.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T171058Z.JPG	5/22/18 17:10	Dive10	-72.36173667	41.221235	-43.613	118.6	IMG_7870.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T171143Z.JPG	5/22/18 17:11	Dive10	-72.36173	41.22123833	-43.926	124.1	IMG_7871.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T171212Z.JPG	5/22/18 17:12	Dive10	-72.36174167	41.22123167	-44.004	124	IMG_7872.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T171847Z.JPG	5/22/18 17:18	Dive10	-72.36173833	41.22123167	-44.082	104.1	IMG_7873.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T171924Z.JPG	5/22/18 17:19	Dive10	-72.36174333	41.221235	-43.926	104.3	IMG_7874.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T171947Z.JPG	5/22/18 17:19	Dive10	-72.36173667	41.22122333	-44.004	104.5	IMG_7875.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T172002Z.JPG	5/22/18 17:20	Dive10	-72.36173667	41.221225	-44.161	103.9	IMG_7876.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T172034Z.JPG	5/22/18 17:20	Dive10	-72.361745	41.22122667	-44.161	104.2	IMG_7878.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T172058Z.JPG	5/22/18 17:20	Dive10	-72.36174	41.22122667	-44.004	102.4	IMG_7879.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T172111Z.JPG	5/22/18 17:21	Dive10	-72.36174333	41.22122833	-44.317	103.1	IMG_7880.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T172238Z.JPG	5/22/18 17:22	Dive10	-72.36175667	41.22121167	-44.004	72.9	IMG_7881.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T172326Z.JPG	5/22/18 17:23	Dive10	-72.36174167	41.22121667	-43.456	56.8	IMG_7882.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T172339Z.JPG	5/22/18 17:23	Dive10	-72.36174	41.221215	-43.691	69.8	IMG_7883.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T172451Z.JPG	5/22/18 17:24	Dive10	-72.36175167	41.221215	-43.613	79.2	IMG_7884.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T172504Z.JPG	5/22/18 17:25	Dive10	-72.36175667	41.221215	-43.456	72.3	IMG_7885.JPG	0	NA	NB20		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180522T172553Z.JPG	5/22/18 17:25	Dive10	-72.36174333	41.221215	-43.848	78	IMG_7887.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T172604Z.JPG	5/22/18 17:26	Dive10	-72.36174167	41.22121833	-43.926	74.4	IMG_7888.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T172613Z.JPG	5/22/18 17:26	Dive10	-72.361745	41.22121833	-43.456	75.5	IMG_7889.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T172632Z.JPG	5/22/18 17:26	Dive10	-72.36175833	41.22121833	-43.769	78.7	IMG_7890.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T172647Z.JPG	5/22/18 17:26	Dive10	-72.36176	41.22121833	-43.613	78.6	IMG_7891.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T172747Z.JPG	5/22/18 17:27	Dive10	-72.36175	41.221215	-43.613	79.3	IMG_7892.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T172841Z.JPG	5/22/18 17:28	Dive10	-72.36174167	41.221205	-44.239	58.5	IMG_7893.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T172912Z.JPG	5/22/18 17:29	Dive10	-72.36173833	41.22120167	-44.004	52	IMG_7894.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T172936Z.JPG	5/22/18 17:29	Dive10	-72.36173333	41.22120667	-44.082	51.4	IMG_7895.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T173103Z.JPG	5/22/18 17:31	Dive10	-72.36174	41.221205	-44.239	73.6	IMG_7896.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T173122Z.JPG	5/22/18 17:31	Dive10	-72.36174167	41.221205	-44.161	73.9	IMG_7897.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T173440Z.JPG	5/22/18 17:34	Dive10	-72.36171833	41.22120167	-43.221	64.6	IMG_7898.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T173449Z.JPG	5/22/18 17:34	Dive10	-72.36172167	41.2212	-43.299	61	IMG_7899.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T173510Z.JPG	5/22/18 17:35	Dive10	-72.36172833	41.22120667	-43.299	75.5	IMG_7900.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T173525Z.JPG	5/22/18 17:35	Dive10	-72.36173833	41.22121	-43.221	79	IMG_7901.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T173603Z.JPG	5/22/18 17:36	Dive10	-72.361755	41.221215	-43.456	93.8	IMG_7902.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T152216Z.JPG	5/22/18 15:22	Dive10	-72.36218167	41.221495	-43.691	255.1	IMG_7684.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T152547Z.JPG	5/22/18 15:25	Dive10	-72.36222	41.22144833	-43.691	261.7	IMG_7695.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T153244Z.JPG	5/22/18 15:32	Dive10	-72.36216167	41.22137	-44.004	295.2	IMG_7706.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T154412Z.JPG	5/22/18 15:44	Dive10	-72.36229833	41.22147	-44.004	269.3	IMG_7729.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T154802Z.JPG	5/22/18 15:48	Dive10	-72.36227	41.22143833	-43.691	269.1	IMG_7739.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155204Z.JPG	5/22/18 15:52	Dive10	-72.36225167	41.22140333	-43.613	276.7	IMG_7751.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T155621Z.JPG	5/22/18 15:56	Dive10	-72.362275	41.22143333	-43.926	297.1	IMG_7762.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T160448Z.JPG	5/22/18 16:04	Dive10	-72.3624	41.22142833	-43.534	351.3	IMG_7798.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T160942Z.JPG	5/22/18 16:09	Dive10	-72.36243333	41.22145167	-43.064	6.1	IMG_7805.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T161449Z.JPG	5/22/18 16:14	Dive10	-72.36239667	41.22134	-43.848	165.6	IMG_7817.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T162159Z.JPG	5/22/18 16:21	Dive10	-72.36241833	41.22126333	-43.534	104.1	IMG_7831.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T165046Z.JPG	5/22/18 16:50	Dive10	-72.36206333	41.221295	-44.239	72.9	IMG_7854.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T170825Z.JPG	5/22/18 17:08	Dive10	-72.36174333	41.22122167	-43.456	101.3	IMG_7865.JPG	-1	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T172016Z.JPG	5/22/18 17:20	Dive10	-72.36174167	41.22122833	-44.161	104	IMG_7877.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T172526Z.JPG	5/22/18 17:25	Dive10	-72.36174167	41.22122167	-44.082	70.7	IMG_7886.JPG	0	NA	NB20		
LISMaRC_Spring2018_ROV_PT_20180522T225804Z.JPG	5/22/18 22:58	Dive11	-72.39023	41.193075	-48.155	354.4	IMG_8021.JPG	-1	SB37	NA	3	0
LISMaRC_Spring2018_ROV_PT_20180522T231115Z.JPG	5/22/18 23:11	Dive11	-72.39019833	41.19314	-47.215	0	IMG_8030.JPG	-1	SB37	NA	4	2
LISMaRC_Spring2018_ROV_PT_20180522T231214Z.JPG	5/22/18 23:12	Dive11	-72.39019167	41.19314	-46.667	344.8	IMG_8033.JPG	-1	SB37	NA	4	2
LISMaRC_Spring2018_ROV_PT_20180522T231218Z.JPG	5/22/18 23:12	Dive11	-72.390185	41.19314333	-46.589	345.4	IMG_8034.JPG	-1	SB37	NA	4	2
LISMaRC_Spring2018_ROV_PT_20180522T231734Z.JPG	5/22/18 23:17	Dive11	-72.39018333	41.19315	-47.215	341.2	IMG_8049.JPG	0	SB37	NA	3	0
LISMaRC_Spring2018_ROV_PT_20180522T232012Z.JPG	5/22/18 23:20	Dive11	-72.39021167	41.19316333	-46.667	343	IMG_8056.JPG	0	SB37	NA	5	0
LISMaRC_Spring2018_ROV_PT_20180522T232515Z.JPG	5/22/18 23:25	Dive11	-72.39017833	41.19324833	-44.161	351.1	IMG_8066.JPG	-1	SB37	NA	5	0
LISMaRC_Spring2018_ROV_PT_20180522T232523Z.JPG	5/22/18 23:25	Dive11	-72.39017833	41.19324833	-43.926	351	IMG_8067.JPG	-1	SB37	NA	4	0
LISMaRC_Spring2018_ROV_PT_20180522T232918Z.JPG	5/22/18 23:29	Dive11	-72.390185	41.193245	-44.239	35	IMG_8073.JPG	0	SB37	NA	5	2
LISMaRC_Spring2018_ROV_PT_20180522T233036Z.JPG	5/22/18 23:30	Dive11	-72.39011333	41.193255	-44.396	58	IMG_8074.JPG	0	SB37	NA	5	2
LISMaRC_Spring2018_ROV_PT_20180522T233049Z.JPG	5/22/18 23:30	Dive11	-72.39011	41.19325833	-43.926	66.1	IMG_8075.JPG	-1	SB37	NA	4	2
LISMaRC_Spring2018_ROV_PT_20180522T233519Z.JPG	5/22/18 23:35	Dive11	-72.38991833	41.19327167	-43.691	63.2	IMG_8079.JPG	-1	SB37	NA	4	2
LISMaRC_Spring2018_ROV_PT_20180522T233622Z.JPG	5/22/18 23:36	Dive11	-72.38978667	41.19332	-43.378	61.3	IMG_8080.JPG	0	SB37	NA	4	2
LISMaRC_Spring2018_ROV_PT_20180522T225610Z.JPG	5/22/18 22:56	Dive11	-72.39021667	41.19304	-48.782	42.3	IMG_8019.JPG	-1	SB37	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180522T230247Z.JPG	5/22/18 23:02	Dive11	-72.39023667	41.19308	-47.528	13.6	IMG_8022.JPG	0	SB37	NA	2	2

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180522T230258Z.JPG	5/22/18 23:02	Dive11	-72.39023167	41.19308833	-47.607	13.4	IMG_8023.JPG	-1	SB37	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180522T230344Z.JPG	5/22/18 23:03	Dive11	-72.39021833	41.19311667	-47.372	13.2	IMG_8024.JPG	0	SB37	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180522T231051Z.JPG	5/22/18 23:10	Dive11	-72.390205	41.19313	-47.137	0	IMG_8028.JPG	-1	SB37	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180522T231230Z.JPG	5/22/18 23:12	Dive11	-72.39018	41.19315167	-47.059	342.2	IMG_8035.JPG	0	SB37	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180522T231545Z.JPG	5/22/18 23:15	Dive11	-72.39018667	41.19314667	-46.824	341.9	IMG_8043.JPG	-1	SB37	NA	2	0
LISMaRC_Spring2018_ROV_PT_20180522T231944Z.JPG	5/22/18 23:19	Dive11	-72.39020833	41.193155	-46.902	343	IMG_8054.JPG	0	SB37	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180522T232000Z.JPG	5/22/18 23:20	Dive11	-72.39021333	41.19315833	-46.824	341.7	IMG_8055.JPG	0	SB37	NA	2	1
LISMaRC_Spring2018_ROV_PT_20180522T232505Z.JPG	5/22/18 23:25	Dive11	-72.39018	41.19324667	-44.004	351	IMG_8065.JPG	-1	SB37	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180522T232557Z.JPG	5/22/18 23:25	Dive11	-72.39017833	41.19324667	-43.848	350.4	IMG_8070.JPG	-1	SB37	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180522T232745Z.JPG	5/22/18 23:27	Dive11	-72.39017833	41.19325167	-44.161	350.4	IMG_8071.JPG	-1	SB37	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180522T232909Z.JPG	5/22/18 23:29	Dive11	-72.39018667	41.19324833	-43.691	357.8	IMG_8072.JPG	-1	SB37	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180522T233129Z.JPG	5/22/18 23:31	Dive11	-72.39008833	41.19325833	-44.552	41.5	IMG_8077.JPG	-1	SB37	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180522T225555Z.JPG	5/22/18 22:55	Dive11	-72.39022833	41.19304667	-48.547	43.1	IMG_8018.JPG	0	SB37	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180522T225729Z.JPG	5/22/18 22:57	Dive11	-72.39022333	41.19307	-48.233	354.4	IMG_8020.JPG	0	SB37	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180522T230639Z.JPG	5/22/18 23:06	Dive11	-72.39022667	41.19311667	-47.294	37.5	IMG_8025.JPG	-1	SB37	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180522T230657Z.JPG	5/22/18 23:06	Dive11	-72.39022833	41.19311167	-47.137	36.4	IMG_8026.JPG	0	SB37	NA	3	0
LISMaRC_Spring2018_ROV_PT_20180522T230718Z.JPG	5/22/18 23:07	Dive11	-72.39022333	41.19312	-47.059	37.4	IMG_8027.JPG	0	SB37	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180522T231106Z.JPG	5/22/18 23:11	Dive11	-72.39020167	41.193135	-47.137	359.5	IMG_8029.JPG	0	SB37	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180522T231123Z.JPG	5/22/18 23:11	Dive11	-72.39019833	41.19314833	-47.372	0.6	IMG_8031.JPG	-1	SB37	NA	4	0
LISMaRC_Spring2018_ROV_PT_20180522T231208Z.JPG	5/22/18 23:12	Dive11	-72.39020333	41.19313667	-46.354	356.1	IMG_8032.JPG	0	SB37	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180522T231239Z.JPG	5/22/18 23:12	Dive11	-72.390185	41.19315833	-46.902	342.7	IMG_8036.JPG	-1	SB37	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180522T231250Z.JPG	5/22/18 23:12	Dive11	-72.39018667	41.19315667	-46.902	342.1	IMG_8037.JPG	0	SB37	NA	3	0
LISMaRC_Spring2018_ROV_PT_20180522T231258Z.JPG	5/22/18 23:12	Dive11	-72.39018833	41.193155	-47.372	342	IMG_8038.JPG	0	SB37	NA	3	0
LISMaRC_Spring2018_ROV_PT_20180522T231334Z.JPG	5/22/18 23:13	Dive11	-72.39018333	41.19315167	-47.059	341.9	IMG_8039.JPG	0	SB37	NA	3	0
LISMaRC_Spring2018_ROV_PT_20180522T231356Z.JPG	5/22/18 23:13	Dive11	-72.39018167	41.19315	-47.059	341.8	IMG_8040.JPG	0	SB37	NA	3	0
LISMaRC_Spring2018_ROV_PT_20180522T231440Z.JPG	5/22/18 23:14	Dive11	-72.39018667	41.19314333	-47.059	341.1	IMG_8041.JPG	0	SB37	NA	3	0
LISMaRC_Spring2018_ROV_PT_20180522T231454Z.JPG	5/22/18 23:14	Dive11	-72.390185	41.19314167	-46.98	342.7	IMG_8042.JPG	0	SB37	NA	3	0
LISMaRC_Spring2018_ROV_PT_20180522T231554Z.JPG	5/22/18 23:15	Dive11	-72.39018667	41.19315	-46.51	341.9	IMG_8044.JPG	0	SB37	NA	3	0
LISMaRC_Spring2018_ROV_PT_20180522T231615Z.JPG	5/22/18 23:16	Dive11	-72.39019	41.19315	-47.137	341.7	IMG_8045.JPG	-1	SB37	NA	3	0
LISMaRC_Spring2018_ROV_PT_20180522T231631Z.JPG	5/22/18 23:16	Dive11	-72.39019	41.19314833	-46.824	341	IMG_8046.JPG	-1	SB37	NA	3	0
LISMaRC_Spring2018_ROV_PT_20180522T231656Z.JPG	5/22/18 23:16	Dive11	-72.39018667	41.19315	-47.528	340.7	IMG_8047.JPG	0	SB37	NA	3	0
LISMaRC_Spring2018_ROV_PT_20180522T231703Z.JPG	5/22/18 23:17	Dive11	-72.39018667	41.19314833	-47.215	341.7	IMG_8048.JPG	-1	SB37	NA	3	0
LISMaRC_Spring2018_ROV_PT_20180522T231852Z.JPG	5/22/18 23:18	Dive11	-72.39018667	41.19314833	-46.824	340.9	IMG_8050.JPG	0	SB37	NA	3	0
LISMaRC_Spring2018_ROV_PT_20180522T231905Z.JPG	5/22/18 23:19	Dive11	-72.39018333	41.19314667	-46.824	344.7	IMG_8051.JPG	-1	SB37	NA	3	0
LISMaRC_Spring2018_ROV_PT_20180522T231911Z.JPG	5/22/18 23:19	Dive11	-72.39018167	41.193145	-46.667	343.6	IMG_8052.JPG	-1	SB37	NA	3	0
LISMaRC_Spring2018_ROV_PT_20180522T231925Z.JPG	5/22/18 23:19	Dive11	-72.39019	41.19314833	-46.902	342.4	IMG_8053.JPG	-1	SB37	NA	3	0
LISMaRC_Spring2018_ROV_PT_20180522T232116Z.JPG	5/22/18 23:21	Dive11	-72.39019667	41.19318833	-46.824	342.9	IMG_8057.JPG	0	SB37	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180522T232229Z.JPG	5/22/18 23:22	Dive11	-72.39017833	41.19317833	-46.197	315.8	IMG_8058.JPG	-1	SB37	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180522T232235Z.JPG	5/22/18 23:22	Dive11	-72.39016667	41.19318	-45.962	320.5	IMG_8059.JPG	-1	SB37	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180522T232243Z.JPG	5/22/18 23:22	Dive11	-72.39016833	41.19318333	-46.119	334.5	IMG_8060.JPG	-1	SB37	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180522T232248Z.JPG	5/22/18 23:22	Dive11	-72.39017333	41.19318833	-45.805	337.8	IMG_8061.JPG	0	SB37	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180522T232302Z.JPG	5/22/18 23:23	Dive11	-72.39018333	41.19319	-45.414	349	IMG_8062.JPG	0	SB37	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180522T232309Z.JPG	5/22/18 23:23	Dive11	-72.39018833	41.193195	-45.492	353.6	IMG_8063.JPG	-1	SB37	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180522T232333Z.JPG	5/22/18 23:23	Dive11	-72.39017833	41.19320667	-44.866	341.3	IMG_8064.JPG	-1	SB37	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180522T232531Z.JPG	5/22/18 23:25	Dive11	-72.39018	41.19324833	-43.691	350.7	IMG_8068.JPG	-1	SB37	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180522T232543Z.JPG	5/22/18 23:25	Dive11	-72.39018	41.19324333	-44.004	350.7	IMG_8069.JPG	-1	SB37	NA	3	2

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180522T233116Z.JPG	5/22/18 23:31	Dive11	-72.39008833	41.193265	-44.317	44.6	IMG_8076.JPG	0	SB37	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180522T233146Z.JPG	5/22/18 23:31	Dive11	-72.39009333	41.19324333	-44.631	30.6	IMG_8078.JPG	0	SB37	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180522T234341Z.JPG	5/22/18 23:43	Dive11	-72.38933167	41.19341833	-34.136	336.9	IMG_8081.JPG	-1	SB37	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180522T234629Z.JPG	5/22/18 23:46	Dive11	-72.38927167	41.193465	-32.883	35.2	IMG_8082.JPG	-1	SB37	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180522T212028Z.JPG	5/22/18 21:20	Dive11	-72.39107833	41.19274	-44.552	136.4	IMG_7903.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T212049Z.JPG	5/22/18 21:20	Dive11	-72.39107333	41.19273333	-44.552	143.2	IMG_7904.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T212113Z.JPG	5/22/18 21:21	Dive11	-72.391075	41.19272333	-44.787	102.5	IMG_7905.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T212121Z.JPG	5/22/18 21:21	Dive11	-72.39107167	41.19272	-44.787	95.8	IMG_7906.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T212136Z.JPG	5/22/18 21:21	Dive11	-72.39107333	41.19272	-44.631	96.8	IMG_7907.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T212146Z.JPG	5/22/18 21:21	Dive11	-72.39107167	41.19271833	-44.552	97.6	IMG_7908.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T212202Z.JPG	5/22/18 21:22	Dive11	-72.39106833	41.19271833	-44.396	98.6	IMG_7909.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T212216Z.JPG	5/22/18 21:22	Dive11	-72.39107333	41.192715	-44.552	100.5	IMG_7910.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T212231Z.JPG	5/22/18 21:22	Dive11	-72.39107333	41.19271833	-44.474	100.1	IMG_7911.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T212241Z.JPG	5/22/18 21:22	Dive11	-72.39107333	41.19271667	-44.474	99.9	IMG_7912.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T212256Z.JPG	5/22/18 21:22	Dive11	-72.39107667	41.19271667	-44.474	100.3	IMG_7913.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T212308Z.JPG	5/22/18 21:23	Dive11	-72.39107667	41.192715	-44.474	100.6	IMG_7914.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T212507Z.JPG	5/22/18 21:25	Dive11	-72.39106333	41.19272167	-44.396	105.6	IMG_7915.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T212607Z.JPG	5/22/18 21:26	Dive11	-72.39106167	41.19271833	-44.161	125.1	IMG_7916.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T212620Z.JPG	5/22/18 21:26	Dive11	-72.39105833	41.192715	-44.161	113.6	IMG_7917.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T212647Z.JPG	5/22/18 21:26	Dive11	-72.39103167	41.19271	-43.769	343.1	IMG_7918.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T212828Z.JPG	5/22/18 21:28	Dive11	-72.39103167	41.19272167	-44.239	35.2	IMG_7919.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T212908Z.JPG	5/22/18 21:29	Dive11	-72.39100667	41.19274333	-44.709	36.9	IMG_7920.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T212929Z.JPG	5/22/18 21:29	Dive11	-72.39100333	41.19274333	-44.552	44.3	IMG_7921.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T212947Z.JPG	5/22/18 21:29	Dive11	-72.39099833	41.19275167	-44.396	45.3	IMG_7922.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T213010Z.JPG	5/22/18 21:30	Dive11	-72.39097667	41.19276833	-45.336	42.7	IMG_7923.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T213042Z.JPG	5/22/18 21:30	Dive11	-72.390975	41.19278	-44.866	41.9	IMG_7924.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T213209Z.JPG	5/22/18 21:32	Dive11	-72.39098	41.19277667	-44.709	36.4	IMG_7925.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T213223Z.JPG	5/22/18 21:32	Dive11	-72.390965	41.192775	-44.709	31.6	IMG_7926.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T213229Z.JPG	5/22/18 21:32	Dive11	-72.39096167	41.19277833	-44.787	30.3	IMG_7927.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T213242Z.JPG	5/22/18 21:32	Dive11	-72.39096	41.19278833	-44.944	40.4	IMG_7928.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T213252Z.JPG	5/22/18 21:32	Dive11	-72.39096	41.19279333	-44.631	39.8	IMG_7929.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T213302Z.JPG	5/22/18 21:33	Dive11	-72.39095667	41.19279833	-44.944	37.4	IMG_7930.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T213316Z.JPG	5/22/18 21:33	Dive11	-72.39095167	41.19280667	-44.631	37.3	IMG_7931.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T213334Z.JPG	5/22/18 21:33	Dive11	-72.39094833	41.19281333	-45.101	46.4	IMG_7932.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T213354Z.JPG	5/22/18 21:33	Dive11	-72.39094667	41.19281333	-45.179	50.2	IMG_7933.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T213410Z.JPG	5/22/18 21:34	Dive11	-72.39094333	41.19280833	-45.336	50.5	IMG_7934.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T213431Z.JPG	5/22/18 21:34	Dive11	-72.39094667	41.19280667	-45.022	57.3	IMG_7935.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T213500Z.JPG	5/22/18 21:35	Dive11	-72.39095333	41.19280667	-45.179	74.6	IMG_7936.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T213523Z.JPG	5/22/18 21:35	Dive11	-72.390955	41.19280833	-45.179	75.4	IMG_7937.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T213528Z.JPG	5/22/18 21:35	Dive11	-72.39095667	41.19280667	-45.336	75.3	IMG_7938.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T213652Z.JPG	5/22/18 21:36	Dive11	-72.39093833	41.192825	-45.022	52.6	IMG_7939.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T213704Z.JPG	5/22/18 21:37	Dive11	-72.39093333	41.19282333	-45.022	52	IMG_7940.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T213732Z.JPG	5/22/18 21:37	Dive11	-72.39093	41.19282333	-44.944	60.9	IMG_7941.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T213802Z.JPG	5/22/18 21:38	Dive11	-72.39091833	41.192835	-44.631	70.6	IMG_7942.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T213817Z.JPG	5/22/18 21:38	Dive11	-72.39091667	41.19283333	-45.336	70.6	IMG_7943.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T213834Z.JPG	5/22/18 21:38	Dive11	-72.39091667	41.192835	-45.101	70.4	IMG_7944.JPG	-1	NA	NA		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180522T213856Z.JPG	5/22/18 21:38	Dive11	-72.39092333	41.19283833	-45.022	70	IMG_7945.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T213909Z.JPG	5/22/18 21:39	Dive11	-72.39092167	41.19283833	-44.944	70	IMG_7946.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T213924Z.JPG	5/22/18 21:39	Dive11	-72.39092167	41.19284	-44.944	70.2	IMG_7947.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T213934Z.JPG	5/22/18 21:39	Dive11	-72.390925	41.19284	-45.257	69.8	IMG_7948.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T213942Z.JPG	5/22/18 21:39	Dive11	-72.390925	41.19284167	-45.022	70.1	IMG_7949.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T214004Z.JPG	5/22/18 21:40	Dive11	-72.39091667	41.19284167	-45.101	69.4	IMG_7950.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T214024Z.JPG	5/22/18 21:40	Dive11	-72.39091833	41.19283667	-44.866	69.2	IMG_7951.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T214035Z.JPG	5/22/18 21:40	Dive11	-72.39091833	41.19283667	-44.944	69.2	IMG_7952.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T214414Z.JPG	5/22/18 21:44	Dive11	-72.39089667	41.19284667	-44.866	70.1	IMG_7953.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T214422Z.JPG	5/22/18 21:44	Dive11	-72.39089833	41.19284833	-45.179	70.5	IMG_7954.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T214525Z.JPG	5/22/18 21:45	Dive11	-72.3909	41.192845	-45.179	30.9	IMG_7955.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T214533Z.JPG	5/22/18 21:45	Dive11	-72.3909	41.19284667	-45.022	29.8	IMG_7956.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T214541Z.JPG	5/22/18 21:45	Dive11	-72.39090167	41.19284333	-45.101	30.7	IMG_7957.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T214607Z.JPG	5/22/18 21:46	Dive11	-72.3909	41.19284	-45.101	30.6	IMG_7958.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T214623Z.JPG	5/22/18 21:46	Dive11	-72.39089	41.19284333	-45.414	31.8	IMG_7959.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T214634Z.JPG	5/22/18 21:46	Dive11	-72.39089333	41.19284333	-45.414	31	IMG_7960.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T214646Z.JPG	5/22/18 21:46	Dive11	-72.39089167	41.19284333	-45.179	31.6	IMG_7961.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T214735Z.JPG	5/22/18 21:47	Dive11	-72.39088667	41.19284	-45.414	30.4	IMG_7962.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T215109Z.JPG	5/22/18 21:51	Dive11	-72.39087833	41.19283667	-45.257	34.2	IMG_7963.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T215157Z.JPG	5/22/18 21:51	Dive11	-72.39088	41.19283833	-45.179	33.3	IMG_7964.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T215206Z.JPG	5/22/18 21:52	Dive11	-72.39088	41.19283667	-45.414	33.2	IMG_7965.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T215214Z.JPG	5/22/18 21:52	Dive11	-72.39088167	41.19283667	-45.414	33.8	IMG_7966.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T215640Z.JPG	5/22/18 21:56	Dive11	-72.39087167	41.192865	-45.571	35.9	IMG_7967.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T215652Z.JPG	5/22/18 21:56	Dive11	-72.39087333	41.19286167	-44.944	36	IMG_7968.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T215658Z.JPG	5/22/18 21:56	Dive11	-72.390875	41.19286167	-45.257	36.6	IMG_7969.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T215709Z.JPG	5/22/18 21:57	Dive11	-72.39088167	41.19286167	-45.492	36.2	IMG_7970.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T215729Z.JPG	5/22/18 21:57	Dive11	-72.39087833	41.19286833	-45.727	36.1	IMG_7971.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T215739Z.JPG	5/22/18 21:57	Dive11	-72.39088167	41.192865	-45.336	36.6	IMG_7972.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T215807Z.JPG	5/22/18 21:58	Dive11	-72.39088	41.192865	-45.492	36.5	IMG_7973.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T215822Z.JPG	5/22/18 21:58	Dive11	-72.39087667	41.19286667	-45.571	37	IMG_7974.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T215832Z.JPG	5/22/18 21:58	Dive11	-72.39087333	41.19286833	-45.571	37.6	IMG_7975.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T220011Z.JPG	5/22/18 22:00	Dive11	-72.390865	41.19286333	-45.414	36.4	IMG_7976.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T220019Z.JPG	5/22/18 22:00	Dive11	-72.390865	41.19286667	-45.336	36.1	IMG_7977.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T220252Z.JPG	5/22/18 22:02	Dive11	-72.39088	41.19287	-45.414	20.6	IMG_7978.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T220304Z.JPG	5/22/18 22:03	Dive11	-72.39087833	41.19286833	-45.649	20	IMG_7979.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T220535Z.JPG	5/22/18 22:05	Dive11	-72.39086667	41.192875	-45.179	20.3	IMG_7980.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T220559Z.JPG	5/22/18 22:05	Dive11	-72.39086833	41.192865	-45.414	20.5	IMG_7981.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T220614Z.JPG	5/22/18 22:06	Dive11	-72.39086333	41.19286667	-45.805	20.9	IMG_7982.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T220630Z.JPG	5/22/18 22:06	Dive11	-72.39086333	41.19286833	-45.414	22	IMG_7983.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T220811Z.JPG	5/22/18 22:08	Dive11	-72.390865	41.19288	-45.571	55.6	IMG_7984.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T220816Z.JPG	5/22/18 22:08	Dive11	-72.39086333	41.192885	-45.727	49.1	IMG_7985.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T220827Z.JPG	5/22/18 22:08	Dive11	-72.39085667	41.19289667	-45.727	44.4	IMG_7986.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T220918Z.JPG	5/22/18 22:09	Dive11	-72.39085833	41.19290333	-45.727	45.6	IMG_7987.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T220926Z.JPG	5/22/18 22:09	Dive11	-72.39086167	41.19290167	-45.805	44.5	IMG_7988.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T220936Z.JPG	5/22/18 22:09	Dive11	-72.39086167	41.19290167	-45.805	44.9	IMG_7989.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T221042Z.JPG	5/22/18 22:10	Dive11	-72.39086167	41.19289667	-45.805	49.4	IMG_7990.JPG	-1	NA	NA		

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180522T221058Z.JPG	5/22/18 22:10	Dive11	-72.39086167	41.19289333	-45.649	49.4	IMG_7991.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T221112Z.JPG	5/22/18 22:11	Dive11	-72.39086	41.192895	-45.414	50.2	IMG_7992.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T221239Z.JPG	5/22/18 22:12	Dive11	-72.39084167	41.19290167	-45.805	41.2	IMG_7993.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T221254Z.JPG	5/22/18 22:12	Dive11	-72.39084333	41.19290167	-45.649	42	IMG_7994.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T221546Z.JPG	5/22/18 22:15	Dive11	-72.390845	41.19290833	-45.727	42.3	IMG_7995.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T221555Z.JPG	5/22/18 22:15	Dive11	-72.39084333	41.19290667	-45.805	42.3	IMG_7996.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T221630Z.JPG	5/22/18 22:16	Dive11	-72.39084167	41.19290333	-45.492	41.9	IMG_7997.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T221700Z.JPG	5/22/18 22:17	Dive11	-72.390845	41.19290333	-45.884	42	IMG_7998.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T221916Z.JPG	5/22/18 22:19	Dive11	-72.39086	41.19291667	-45.727	64.8	IMG_7999.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T221950Z.JPG	5/22/18 22:19	Dive11	-72.39085667	41.19292	-45.649	65	IMG_8000.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T222025Z.JPG	5/22/18 22:20	Dive11	-72.39085333	41.19292667	-45.962	64.6	IMG_8001.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T222343Z.JPG	5/22/18 22:23	Dive11	-72.390825	41.19292	-45.962	55.7	IMG_8002.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T222520Z.JPG	5/22/18 22:25	Dive11	-72.39075833	41.19292333	-46.275	66.1	IMG_8003.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T222540Z.JPG	5/22/18 22:25	Dive11	-72.39075333	41.192925	-46.119	65	IMG_8004.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T222919Z.JPG	5/22/18 22:29	Dive11	-72.39065333	41.192925	-46.745	65.1	IMG_8005.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T223226Z.JPG	5/22/18 22:32	Dive11	-72.390605	41.19293667	-46.51	86.6	IMG_8006.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T223539Z.JPG	5/22/18 22:35	Dive11	-72.39056	41.19292167	-47.059	38.3	IMG_8007.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T223548Z.JPG	5/22/18 22:35	Dive11	-72.39056	41.19292167	-46.902	38.3	IMG_8008.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T223603Z.JPG	5/22/18 22:36	Dive11	-72.390555	41.19292167	-47.215	40.6	IMG_8009.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T223622Z.JPG	5/22/18 22:36	Dive11	-72.390555	41.19292167	-46.902	40.7	IMG_8010.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T224239Z.JPG	5/22/18 22:42	Dive11	-72.39042333	41.19296333	-47.607	89.1	IMG_8011.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T224252Z.JPG	5/22/18 22:42	Dive11	-72.39044667	41.19295667	-47.607	88.5	IMG_8012.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T224309Z.JPG	5/22/18 22:43	Dive11	-72.39044667	41.19295333	-47.685	78.6	IMG_8013.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T224444Z.JPG	5/22/18 22:44	Dive11	-72.39046	41.19297333	-47.763	77.6	IMG_8014.JPG	-1	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T224515Z.JPG	5/22/18 22:45	Dive11	-72.39046167	41.19296333	-47.45	77.9	IMG_8015.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T225036Z.JPG	5/22/18 22:50	Dive11	-72.39036667	41.19297	-47.685	44.1	IMG_8016.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180522T225051Z.JPG	5/22/18 22:50	Dive11	-72.39037167	41.19297333	-48.233	43.3	IMG_8017.JPG	0	NA	NA		
LISMaRC_Spring2018_ROV_PT_20180523T095007Z.JPG	5/23/18 09:50	Dive12	-72.38886	41.19431	1.734	112.3	IMG_8083.JPG	1388	SB37	NA	5	0
LISMaRC_Spring2018_ROV_PT_20180523T102027Z.JPG	5/23/18 10:20	Dive12	-72.26409667	41.24505167	-32.883	88	IMG_8084.JPG	0	SB45	NA	5	0
LISMaRC_Spring2018_ROV_PT_20180523T103911Z.JPG	5/23/18 10:39	Dive12	-72.26333667	41.24510833	-35.702	117.2	IMG_8101.JPG	0	SB45	NA	4	0
LISMaRC_Spring2018_ROV_PT_20180523T103943Z.JPG	5/23/18 10:39	Dive12	-72.263335	41.24511	-35.702	124.2	IMG_8104.JPG	0	SB45	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180523T104043Z.JPG	5/23/18 10:40	Dive12	-72.26323	41.24504333	-33.823	134.3	IMG_8106.JPG	0	SB45	NA	4	3
LISMaRC_Spring2018_ROV_PT_20180523T104111Z.JPG	5/23/18 10:41	Dive12	-72.263225	41.24505	-32.883	167.2	IMG_8108.JPG	0	SB45	NA	4	2
LISMaRC_Spring2018_ROV_PT_20180523T104238Z.JPG	5/23/18 10:42	Dive12	-72.26323833	41.24504667	-29.593	102.9	IMG_8117.JPG	-1	SB45	NA	4	2
LISMaRC_Spring2018_ROV_PT_20180523T104251Z.JPG	5/23/18 10:42	Dive12	-72.26325	41.24503667	-29.593	109.7	IMG_8119.JPG	0	SB45	NA	3	1
LISMaRC_Spring2018_ROV_PT_20180523T104424Z.JPG	5/23/18 10:44	Dive12	-72.26327667	41.24501333	-29.75	96.1	IMG_8126.JPG	-1	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T111656Z.JPG	5/23/18 11:16	Dive12	-72.26310667	41.245035	-28.262	315.7	IMG_8176.JPG	-1	SB45	NA	4	2
LISMaRC_Spring2018_ROV_PT_20180523T113002Z.JPG	5/23/18 11:30	Dive12	-72.26310333	41.24499167	-33.353	328.2	IMG_8209.JPG	-1	SB45	NA	4	2
LISMaRC_Spring2018_ROV_PT_20180523T113126Z.JPG	5/23/18 11:31	Dive12	-72.26318	41.24501	-32.021	70.8	IMG_8218.JPG	-1	SB45	NA	4	2
LISMaRC_Spring2018_ROV_PT_20180523T113139Z.JPG	5/23/18 11:31	Dive12	-72.26319333	41.24501	-31.551	58.1	IMG_8220.JPG	0	SB45	NA	4	2
LISMaRC_Spring2018_ROV_PT_20180523T113341Z.JPG	5/23/18 11:33	Dive12	-72.26323833	41.24504833	-31.786	80.2	IMG_8237.JPG	0	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T113353Z.JPG	5/23/18 11:33	Dive12	-72.26324	41.24504833	-32.726	53.9	IMG_8238.JPG	0	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T113417Z.JPG	5/23/18 11:34	Dive12	-72.26323333	41.24503833	-34.293	49.1	IMG_8239.JPG	0	SB45	NA	4	2
LISMaRC_Spring2018_ROV_PT_20180523T113426Z.JPG	5/23/18 11:34	Dive12	-72.26322333	41.24502667	-34.214	48.9	IMG_8240.JPG	-1	SB45	NA	4	2
LISMaRC_Spring2018_ROV_PT_20180523T113440Z.JPG	5/23/18 11:34	Dive12	-72.26321	41.24502333	-33.901	70.1	IMG_8241.JPG	-1	SB45	NA	4	2
LISMaRC_Spring2018_ROV_PT_20180523T113458Z.JPG	5/23/18 11:34	Dive12	-72.26321	41.24502667	-33.744	74.6	IMG_8242.JPG	-1	SB45	NA	4	2

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180523T113630Z.JPG	5/23/18 11:36	Dive12	-72.26311333	41.24501	-32.726	275.8	IMG_8243.JPG	-1	SB45	NA	5	2
LISMaRC_Spring2018_ROV_PT_20180523T113648Z.JPG	5/23/18 11:36	Dive12	-72.26314667	41.245015	-31.003	163.7	IMG_8244.JPG	-1	SB45	NA	5	2
LISMaRC_Spring2018_ROV_PT_20180523T114125Z.JPG	5/23/18 11:41	Dive12	-72.26293333	41.244855	-32.1	175.1	IMG_8253.JPG	0	SB45	NA	4	2
LISMaRC_Spring2018_ROV_PT_20180523T120240Z.JPG	5/23/18 12:02	Dive12	-72.26290167	41.24476	-29.515	272.3	IMG_8281.JPG	-1	SB45	NA	3	0
LISMaRC_Spring2018_ROV_PT_20180523T120258Z.JPG	5/23/18 12:02	Dive12	-72.26289667	41.24476333	-29.593	272.1	IMG_8282.JPG	-1	SB45	NA	1	0
LISMaRC_Spring2018_ROV_PT_20180523T120339Z.JPG	5/23/18 12:03	Dive12	-72.26288833	41.244765	-29.75	271.6	IMG_8285.JPG	0	SB45	NA	2	0
LISMaRC_Spring2018_ROV_PT_20180523T120517Z.JPG	5/23/18 12:05	Dive12	-72.26289	41.24475833	-29.358	273.7	IMG_8291.JPG	0	SB45	NA	4	4
LISMaRC_Spring2018_ROV_PT_20180523T120851Z.JPG	5/23/18 12:08	Dive12	-72.2629	41.244775	-29.124	271.6	IMG_8301.JPG	0	SB45	NA	4	0
LISMaRC_Spring2018_ROV_PT_20180523T121347Z.JPG	5/23/18 12:13	Dive12	-72.26291333	41.24477333	-29.358	272	IMG_8308.JPG	0	SB45	NA	2	0
LISMaRC_Spring2018_ROV_PT_20180523T121408Z.JPG	5/23/18 12:14	Dive12	-72.26291333	41.24477333	-29.124	271.9	IMG_8309.JPG	-1	SB45	NA	2	0
LISMaRC_Spring2018_ROV_PT_20180523T121429Z.JPG	5/23/18 12:14	Dive12	-72.262915	41.244775	-29.358	270.9	IMG_8310.JPG	0	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T122125Z.JPG	5/23/18 12:21	Dive12	-72.26297	41.24474167	-29.124	272.8	IMG_8315.JPG	0	SB45	NA	3	0
LISMaRC_Spring2018_ROV_PT_20180523T122155Z.JPG	5/23/18 12:21	Dive12	-72.26295	41.24474333	-29.124	272.1	IMG_8316.JPG	0	SB45	NA	3	0
LISMaRC_Spring2018_ROV_PT_20180523T102222Z.JPG	5/23/18 10:22	Dive12	-72.263835	41.245125	-33.274	87.2	IMG_8086.JPG	-1	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T103027Z.JPG	5/23/18 10:30	Dive12	-72.26352667	41.245105	-34.371	82.6	IMG_8094.JPG	0	SB45	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180523T103808Z.JPG	5/23/18 10:38	Dive12	-72.26334333	41.245105	-36.016	120	IMG_8098.JPG	-1	SB45	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180523T103903Z.JPG	5/23/18 10:39	Dive12	-72.26333833	41.24510667	-35.781	116.6	IMG_8100.JPG	0	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T104007Z.JPG	5/23/18 10:40	Dive12	-72.263285	41.24507667	-34.684	151.5	IMG_8105.JPG	0	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T104129Z.JPG	5/23/18 10:41	Dive12	-72.263215	41.24505167	-32.1	143.1	IMG_8110.JPG	0	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T104152Z.JPG	5/23/18 10:41	Dive12	-72.26321	41.245035	-31.238	117.3	IMG_8113.JPG	-1	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T104232Z.JPG	5/23/18 10:42	Dive12	-72.263235	41.24505	-29.985	111.4	IMG_8116.JPG	-1	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T104313Z.JPG	5/23/18 10:43	Dive12	-72.26324667	41.24503833	-29.515	135.4	IMG_8120.JPG	0	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T104323Z.JPG	5/23/18 10:43	Dive12	-72.26325167	41.24504333	-30.063	135.2	IMG_8121.JPG	0	SB45	NA	2	1
LISMaRC_Spring2018_ROV_PT_20180523T104328Z.JPG	5/23/18 10:43	Dive12	-72.26325667	41.245045	-29.985	135.4	IMG_8122.JPG	-1	SB45	NA	2	3
LISMaRC_Spring2018_ROV_PT_20180523T104335Z.JPG	5/23/18 10:43	Dive12	-72.26326167	41.24504167	-30.063	123.5	IMG_8123.JPG	0	SB45	NA	2	3
LISMaRC_Spring2018_ROV_PT_20180523T104437Z.JPG	5/23/18 10:44	Dive12	-72.26326833	41.24501	-29.437	95.1	IMG_8127.JPG	0	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T104534Z.JPG	5/23/18 10:45	Dive12	-72.26325	41.24500667	-28.654	100.3	IMG_8132.JPG	-1	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T104555Z.JPG	5/23/18 10:45	Dive12	-72.26323333	41.24501667	-28.497	133.2	IMG_8133.JPG	0	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T104731Z.JPG	5/23/18 10:47	Dive12	-72.26316	41.245	-28.184	337	IMG_8137.JPG	0	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T104801Z.JPG	5/23/18 10:48	Dive12	-72.26318833	41.24502833	-28.105	1.3	IMG_8138.JPG	0	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T104816Z.JPG	5/23/18 10:48	Dive12	-72.26318833	41.24504	-28.419	2.1	IMG_8139.JPG	-1	SB45	NA	1	0
LISMaRC_Spring2018_ROV_PT_20180523T104830Z.JPG	5/23/18 10:48	Dive12	-72.263185	41.245035	-28.105	2.5	IMG_8140.JPG	-1	SB45	NA	2	0
LISMaRC_Spring2018_ROV_PT_20180523T105612Z.JPG	5/23/18 10:56	Dive12	-72.26308333	41.24507833	-32.491	265.5	IMG_8143.JPG	-1	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T105718Z.JPG	5/23/18 10:57	Dive12	-72.263115	41.245065	-33.509	232.9	IMG_8144.JPG	-1	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T105727Z.JPG	5/23/18 10:57	Dive12	-72.26311	41.24506833	-33.823	232.2	IMG_8145.JPG	0	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T105735Z.JPG	5/23/18 10:57	Dive12	-72.26311	41.24507167	-33.901	232.5	IMG_8146.JPG	0	SB45	NA	1	1
LISMaRC_Spring2018_ROV_PT_20180523T105806Z.JPG	5/23/18 10:58	Dive12	-72.26310667	41.24507667	-33.823	233.7	IMG_8148.JPG	-1	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T110242Z.JPG	5/23/18 11:02	Dive12	-72.26309333	41.245075	-33.823	233.2	IMG_8150.JPG	-1	SB45	NA	2	3
LISMaRC_Spring2018_ROV_PT_20180523T110254Z.JPG	5/23/18 11:02	Dive12	-72.26309833	41.24507667	-33.901	231.8	IMG_8151.JPG	-1	SB45	NA	2	3
LISMaRC_Spring2018_ROV_PT_20180523T110713Z.JPG	5/23/18 11:07	Dive12	-72.263105	41.24507833	-33.744	232	IMG_8152.JPG	0	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T110750Z.JPG	5/23/18 11:07	Dive12	-72.26310667	41.24508167	-33.431	232.4	IMG_8153.JPG	-1	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T110758Z.JPG	5/23/18 11:07	Dive12	-72.26310833	41.24508	-33.744	231.9	IMG_8154.JPG	-1	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T110837Z.JPG	5/23/18 11:08	Dive12	-72.26311167	41.24507667	-33.666	232.2	IMG_8155.JPG	0	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T110905Z.JPG	5/23/18 11:09	Dive12	-72.26311167	41.24507667	-33.666	232.5	IMG_8156.JPG	0	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T111408Z.JPG	5/23/18 11:14	Dive12	-72.26310333	41.24507167	-32.491	270.9	IMG_8159.JPG	-1	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T111421Z.JPG	5/23/18 11:14	Dive12	-72.26310167	41.245055	-31.786	286	IMG_8160.JPG	0	SB45	NA	2	2

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180523T111440Z.JPG	5/23/18 11:14	Dive12	-72.26310833	41.24505	-30.612	287.2	IMG_8161.JPG	-1	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T111448Z.JPG	5/23/18 11:14	Dive12	-72.26310833	41.24505	-30.612	298.4	IMG_8162.JPG	-1	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T111457Z.JPG	5/23/18 11:14	Dive12	-72.26311167	41.245045	-30.533	299.1	IMG_8163.JPG	0	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T111506Z.JPG	5/23/18 11:15	Dive12	-72.26311167	41.24504667	-30.377	274.2	IMG_8164.JPG	-1	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T111518Z.JPG	5/23/18 11:15	Dive12	-72.26310333	41.24505	-30.063	284.4	IMG_8165.JPG	-1	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T111543Z.JPG	5/23/18 11:15	Dive12	-72.26309667	41.24504167	-29.828	286.8	IMG_8167.JPG	0	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T111555Z.JPG	5/23/18 11:15	Dive12	-72.26309833	41.24503833	-29.515	284.5	IMG_8168.JPG	0	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T111604Z.JPG	5/23/18 11:16	Dive12	-72.26309833	41.24503667	-29.437	286.1	IMG_8169.JPG	-1	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T111614Z.JPG	5/23/18 11:16	Dive12	-72.263095	41.24503833	-28.967	304.6	IMG_8170.JPG	-1	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T111620Z.JPG	5/23/18 11:16	Dive12	-72.26309333	41.24503667	-28.889	305.5	IMG_8171.JPG	-1	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T111625Z.JPG	5/23/18 11:16	Dive12	-72.26309667	41.24503667	-29.358	300.4	IMG_8172.JPG	0	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T111630Z.JPG	5/23/18 11:16	Dive12	-72.2631	41.245035	-28.654	299.2	IMG_8173.JPG	-1	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T111639Z.JPG	5/23/18 11:16	Dive12	-72.263105	41.24503167	-28.732	300	IMG_8174.JPG	0	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T111648Z.JPG	5/23/18 11:16	Dive12	-72.263105	41.245035	-28.419	309.9	IMG_8175.JPG	-1	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T111719Z.JPG	5/23/18 11:17	Dive12	-72.263125	41.24502667	-28.497	343.7	IMG_8178.JPG	0	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T111740Z.JPG	5/23/18 11:17	Dive12	-72.26312167	41.24502667	-29.202	318.3	IMG_8180.JPG	-1	SB45	NA	1	0
LISMaRC_Spring2018_ROV_PT_20180523T111758Z.JPG	5/23/18 11:17	Dive12	-72.26311	41.245025	-29.828	304.4	IMG_8181.JPG	-1	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T111804Z.JPG	5/23/18 11:18	Dive12	-72.263105	41.245025	-29.828	289.2	IMG_8182.JPG	-1	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T111811Z.JPG	5/23/18 11:18	Dive12	-72.2631	41.24503167	-30.298	261	IMG_8183.JPG	0	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T111820Z.JPG	5/23/18 11:18	Dive12	-72.2631	41.245045	-30.847	246.8	IMG_8184.JPG	-1	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T111826Z.JPG	5/23/18 11:18	Dive12	-72.2631	41.24505667	-30.847	246.7	IMG_8185.JPG	-1	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T111831Z.JPG	5/23/18 11:18	Dive12	-72.2631	41.24506333	-31.473	248.9	IMG_8186.JPG	0	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T112117Z.JPG	5/23/18 11:21	Dive12	-72.26307833	41.24504833	-32.726	269.4	IMG_8192.JPG	0	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T112141Z.JPG	5/23/18 11:21	Dive12	-72.263095	41.24506333	-32.335	256.6	IMG_8193.JPG	0	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T112153Z.JPG	5/23/18 11:21	Dive12	-72.263095	41.24505833	-32.256	257.9	IMG_8194.JPG	0	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T112207Z.JPG	5/23/18 11:22	Dive12	-72.26309667	41.245055	-32.413	257.1	IMG_8195.JPG	0	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T112348Z.JPG	5/23/18 11:23	Dive12	-72.26309667	41.24505167	-32.1	256.5	IMG_8196.JPG	-1	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T112418Z.JPG	5/23/18 11:24	Dive12	-72.2631	41.24505667	-31.865	256.1	IMG_8197.JPG	-1	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T112434Z.JPG	5/23/18 11:24	Dive12	-72.26310167	41.24506667	-32.021	255.7	IMG_8198.JPG	-1	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T112720Z.JPG	5/23/18 11:27	Dive12	-72.26308	41.24505833	-33.196	262.8	IMG_8203.JPG	-1	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T112727Z.JPG	5/23/18 11:27	Dive12	-72.26308	41.24505667	-33.353	265.6	IMG_8204.JPG	0	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T112735Z.JPG	5/23/18 11:27	Dive12	-72.26307167	41.24504833	-33.353	268.8	IMG_8205.JPG	0	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T112747Z.JPG	5/23/18 11:27	Dive12	-72.26307833	41.24504	-33.196	286.2	IMG_8206.JPG	0	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T112900Z.JPG	5/23/18 11:29	Dive12	-72.26307333	41.24502833	-33.431	285.5	IMG_8207.JPG	-1	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T112953Z.JPG	5/23/18 11:29	Dive12	-72.26310167	41.244985	-33.274	349.8	IMG_8208.JPG	0	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T113102Z.JPG	5/23/18 11:31	Dive12	-72.263135	41.244995	-32.648	35.8	IMG_8215.JPG	-1	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T113110Z.JPG	5/23/18 11:31	Dive12	-72.26315167	41.24499833	-32.1	39	IMG_8216.JPG	-1	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T113119Z.JPG	5/23/18 11:31	Dive12	-72.26317333	41.24500667	-31.943	65.8	IMG_8217.JPG	0	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T113133Z.JPG	5/23/18 11:31	Dive12	-72.26318833	41.24501	-31.708	47.1	IMG_8219.JPG	0	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T113147Z.JPG	5/23/18 11:31	Dive12	-72.26319667	41.245015	-31.551	65.6	IMG_8221.JPG	0	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T113206Z.JPG	5/23/18 11:32	Dive12	-72.26320667	41.24502167	-31.786	45.6	IMG_8223.JPG	-1	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T113213Z.JPG	5/23/18 11:32	Dive12	-72.263205	41.24502167	-31.473	66.5	IMG_8224.JPG	0	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T113219Z.JPG	5/23/18 11:32	Dive12	-72.26321	41.24502667	-31.708	75.6	IMG_8225.JPG	0	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T113225Z.JPG	5/23/18 11:32	Dive12	-72.26321	41.24502333	-31.473	36.6	IMG_8226.JPG	0	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T113230Z.JPG	5/23/18 11:32	Dive12	-72.26321	41.24502167	-31.865	31.5	IMG_8227.JPG	-1	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T113236Z.JPG	5/23/18 11:32	Dive12	-72.26321	41.24501667	-31.551	34.7	IMG_8228.JPG	-1	SB45	NA	1	2

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180523T113242Z.JPG	5/23/18 11:32	Dive12	-72.26320833	41.24501167	-31.395	43.5	IMG_8229.JPG	-1	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T113249Z.JPG	5/23/18 11:32	Dive12	-72.26321167	41.245015	-31.551	50.1	IMG_8230.JPG	0	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T113300Z.JPG	5/23/18 11:33	Dive12	-72.26321833	41.24502667	-31.316	51.5	IMG_8232.JPG	-1	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T113306Z.JPG	5/23/18 11:33	Dive12	-72.26321833	41.24503	-31.395	40.2	IMG_8233.JPG	-1	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T113318Z.JPG	5/23/18 11:33	Dive12	-72.26322333	41.24503333	-30.925	50.6	IMG_8235.JPG	-1	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T113335Z.JPG	5/23/18 11:33	Dive12	-72.263235	41.24504667	-31.943	84.8	IMG_8236.JPG	0	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T113841Z.JPG	5/23/18 11:38	Dive12	-72.26296667	41.244895	-32.648	151.7	IMG_8246.JPG	0	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T113955Z.JPG	5/23/18 11:39	Dive12	-72.262915	41.24485	-32.491	166.3	IMG_8248.JPG	0	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T114007Z.JPG	5/23/18 11:40	Dive12	-72.26290667	41.24484667	-32.335	170.8	IMG_8249.JPG	0	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T114024Z.JPG	5/23/18 11:40	Dive12	-72.26291667	41.24484667	-32.648	166.9	IMG_8250.JPG	-1	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T114105Z.JPG	5/23/18 11:41	Dive12	-72.26292333	41.24485167	-32.335	157.6	IMG_8252.JPG	0	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T114410Z.JPG	5/23/18 11:44	Dive12	-72.26285167	41.24475167	-30.142	196.5	IMG_8261.JPG	-1	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T114420Z.JPG	5/23/18 11:44	Dive12	-72.26284667	41.24475667	-30.22	197.6	IMG_8262.JPG	-1	SB45	NA	2	0
LISMaRC_Spring2018_ROV_PT_20180523T114529Z.JPG	5/23/18 11:45	Dive12	-72.26284333	41.244765	-30.22	199.9	IMG_8265.JPG	0	SB45	NA	1	0
LISMaRC_Spring2018_ROV_PT_20180523T114911Z.JPG	5/23/18 11:49	Dive12	-72.262885	41.24477833	-29.593	263.1	IMG_8268.JPG	0	SB45	NA	1	3
LISMaRC_Spring2018_ROV_PT_20180523T115002Z.JPG	5/23/18 11:50	Dive12	-72.262895	41.24477833	-29.828	262.8	IMG_8269.JPG	-1	SB45	NA	1	1
LISMaRC_Spring2018_ROV_PT_20180523T115010Z.JPG	5/23/18 11:50	Dive12	-72.262895	41.24477667	-29.828	262.8	IMG_8270.JPG	-1	SB45	NA	1	0
LISMaRC_Spring2018_ROV_PT_20180523T115015Z.JPG	5/23/18 11:50	Dive12	-72.262895	41.24477667	-29.515	262.7	IMG_8271.JPG	0	SB45	NA	1	0
LISMaRC_Spring2018_ROV_PT_20180523T115026Z.JPG	5/23/18 11:50	Dive12	-72.26289333	41.24477333	-29.985	262.5	IMG_8272.JPG	-1	SB45	NA	1	0
LISMaRC_Spring2018_ROV_PT_20180523T115440Z.JPG	5/23/18 11:54	Dive12	-72.26292167	41.24478167	-29.515	272.2	IMG_8273.JPG	-1	SB45	NA	1	0
LISMaRC_Spring2018_ROV_PT_20180523T115513Z.JPG	5/23/18 11:55	Dive12	-72.26289833	41.24477667	-29.672	271.8	IMG_8276.JPG	0	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T115544Z.JPG	5/23/18 11:55	Dive12	-72.262895	41.244775	-29.202	272.5	IMG_8278.JPG	-1	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T115928Z.JPG	5/23/18 11:59	Dive12	-72.26288167	41.244745	-29.437	273.1	IMG_8280.JPG	-1	SB45	NA	1	0
LISMaRC_Spring2018_ROV_PT_20180523T120310Z.JPG	5/23/18 12:03	Dive12	-72.26289667	41.244765	-29.437	272.3	IMG_8283.JPG	-1	SB45	NA	1	0
LISMaRC_Spring2018_ROV_PT_20180523T120327Z.JPG	5/23/18 12:03	Dive12	-72.262885	41.24476667	-29.593	272	IMG_8284.JPG	0	SB45	NA	1	0
LISMaRC_Spring2018_ROV_PT_20180523T120717Z.JPG	5/23/18 12:07	Dive12	-72.26290333	41.24476	-29.358	271.3	IMG_8296.JPG	0	SB45	NA	2	3
LISMaRC_Spring2018_ROV_PT_20180523T120729Z.JPG	5/23/18 12:07	Dive12	-72.262905	41.24476	-29.202	271.6	IMG_8297.JPG	0	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T120757Z.JPG	5/23/18 12:07	Dive12	-72.26290833	41.24476667	-29.124	271.4	IMG_8298.JPG	0	SB45	NA	2	4
LISMaRC_Spring2018_ROV_PT_20180523T120805Z.JPG	5/23/18 12:08	Dive12	-72.26290833	41.24476833	-29.593	271.1	IMG_8299.JPG	0	SB45	NA	1	0
LISMaRC_Spring2018_ROV_PT_20180523T120832Z.JPG	5/23/18 12:08	Dive12	-72.26290667	41.24477333	-28.967	271.2	IMG_8300.JPG	-1	SB45	NA	1	1
LISMaRC_Spring2018_ROV_PT_20180523T120859Z.JPG	5/23/18 12:08	Dive12	-72.26289833	41.24477167	-29.358	271.4	IMG_8302.JPG	0	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T120913Z.JPG	5/23/18 12:09	Dive12	-72.2629	41.24476833	-29.202	271.3	IMG_8303.JPG	0	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T121220Z.JPG	5/23/18 12:12	Dive12	-72.26291333	41.244775	-29.437	271.2	IMG_8304.JPG	-1	SB45	NA	2	1
LISMaRC_Spring2018_ROV_PT_20180523T121229Z.JPG	5/23/18 12:12	Dive12	-72.26291	41.244775	-29.358	271.4	IMG_8305.JPG	0	SB45	NA	1	0
LISMaRC_Spring2018_ROV_PT_20180523T121313Z.JPG	5/23/18 12:13	Dive12	-72.26291167	41.24477833	-29.124	273	IMG_8306.JPG	0	SB45	NA	2	0
LISMaRC_Spring2018_ROV_PT_20180523T121450Z.JPG	5/23/18 12:14	Dive12	-72.262915	41.244775	-29.202	272	IMG_8311.JPG	-1	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T122436Z.JPG	5/23/18 12:24	Dive12	-72.26291833	41.24474333	-29.358	270.9	IMG_8319.JPG	-1	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T122444Z.JPG	5/23/18 12:24	Dive12	-72.262915	41.24474333	-29.202	271.4	IMG_8320.JPG	-1	SB45	NA	1	0
LISMaRC_Spring2018_ROV_PT_20180523T122615Z.JPG	5/23/18 12:26	Dive12	-72.26294	41.24475167	-28.967	271.1	IMG_8321.JPG	0	SB45	NA	1	0
LISMaRC_Spring2018_ROV_PT_20180523T122652Z.JPG	5/23/18 12:26	Dive12	-72.26293	41.244755	-28.967	271.4	IMG_8322.JPG	-1	SB45	NA	1	0
LISMaRC_Spring2018_ROV_PT_20180523T102203Z.JPG	5/23/18 10:22	Dive12	-72.263835	41.245125	-33.039	87.2	IMG_8085.JPG	0	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T102423Z.JPG	5/23/18 10:24	Dive12	-72.263835	41.24512833	-32.961	87.9	IMG_8087.JPG	0	SB45	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180523T102614Z.JPG	5/23/18 10:26	Dive12	-72.26371	41.24512667	-33.196	88.6	IMG_8088.JPG	-1	SB45	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180523T102620Z.JPG	5/23/18 10:26	Dive12	-72.26370833	41.24512667	-32.961	90.2	IMG_8089.JPG	-1	SB45	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180523T102653Z.JPG	5/23/18 10:26	Dive12	-72.26368167	41.245125	-33.431	97.8	IMG_8090.JPG	0	SB45	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180523T102717Z.JPG	5/23/18 10:27	Dive12	-72.26367	41.24512667	-33.196	97	IMG_8091.JPG	0	SB45	NA	3	4

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180523T102816Z.JPG	5/23/18 10:28	Dive12	-72.263635	41.24511667	-33.588	95.4	IMG_8092.JPG	-1	SB45	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180523T102839Z.JPG	5/23/18 10:28	Dive12	-72.26359667	41.24512167	-33.666	89.3	IMG_8093.JPG	0	SB45	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180523T103112Z.JPG	5/23/18 10:31	Dive12	-72.2635	41.24511667	-33.979	62.9	IMG_8095.JPG	-1	SB45	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180523T103538Z.JPG	5/23/18 10:35	Dive12	-72.26344667	41.24511833	-34.684	102.4	IMG_8096.JPG	-1	SB45	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180523T103634Z.JPG	5/23/18 10:36	Dive12	-72.26340833	41.24511333	-35.232	117	IMG_8097.JPG	-1	SB45	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180523T103848Z.JPG	5/23/18 10:38	Dive12	-72.26333333	41.2451	-35.624	116.3	IMG_8099.JPG	-1	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T103928Z.JPG	5/23/18 10:39	Dive12	-72.263335	41.24510833	-35.781	116.3	IMG_8102.JPG	-1	SB45	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180523T103936Z.JPG	5/23/18 10:39	Dive12	-72.26333667	41.24511	-35.546	116.4	IMG_8103.JPG	-1	SB45	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180523T104100Z.JPG	5/23/18 10:41	Dive12	-72.26322667	41.24504667	-33.823	157.3	IMG_8107.JPG	-1	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T104120Z.JPG	5/23/18 10:41	Dive12	-72.26321667	41.24505333	-32.648	155.3	IMG_8109.JPG	-1	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T104136Z.JPG	5/23/18 10:41	Dive12	-72.26321167	41.24504833	-31.708	142.8	IMG_8111.JPG	-1	SB45	NA	3	3
LISMaRC_Spring2018_ROV_PT_20180523T104145Z.JPG	5/23/18 10:41	Dive12	-72.26321	41.24504167	-31.395	127.5	IMG_8112.JPG	0	SB45	NA	3	3
LISMaRC_Spring2018_ROV_PT_20180523T104213Z.JPG	5/23/18 10:42	Dive12	-72.26323667	41.24504667	-30.612	131.8	IMG_8114.JPG	0	SB45	NA	3	3
LISMaRC_Spring2018_ROV_PT_20180523T104225Z.JPG	5/23/18 10:42	Dive12	-72.26323833	41.24505333	-30.22	121.3	IMG_8115.JPG	0	SB45	NA	3	3
LISMaRC_Spring2018_ROV_PT_20180523T104245Z.JPG	5/23/18 10:42	Dive12	-72.26324667	41.24504333	-29.437	95.6	IMG_8118.JPG	0	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T104342Z.JPG	5/23/18 10:43	Dive12	-72.26326667	41.24504	-29.828	110.2	IMG_8124.JPG	-1	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T104416Z.JPG	5/23/18 10:44	Dive12	-72.26328167	41.24501833	-29.907	91.3	IMG_8125.JPG	-1	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T104449Z.JPG	5/23/18 10:44	Dive12	-72.26326167	41.24500833	-29.672	96.2	IMG_8128.JPG	0	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T104458Z.JPG	5/23/18 10:44	Dive12	-72.26325333	41.24500833	-29.28	90.1	IMG_8129.JPG	-1	SB45	NA	3	3
LISMaRC_Spring2018_ROV_PT_20180523T104512Z.JPG	5/23/18 10:45	Dive12	-72.263255	41.24500833	-29.672	96.3	IMG_8130.JPG	-1	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T104522Z.JPG	5/23/18 10:45	Dive12	-72.26325833	41.245005	-29.202	92.5	IMG_8131.JPG	-1	SB45	NA	3	3
LISMaRC_Spring2018_ROV_PT_20180523T104603Z.JPG	5/23/18 10:46	Dive12	-72.26322833	41.24501667	-28.654	136.4	IMG_8134.JPG	0	SB45	NA	3	1
LISMaRC_Spring2018_ROV_PT_20180523T104610Z.JPG	5/23/18 10:46	Dive12	-72.26322667	41.24501333	-29.202	144	IMG_8135.JPG	-1	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T104714Z.JPG	5/23/18 10:47	Dive12	-72.263165	41.24501167	-28.732	314.3	IMG_8136.JPG	-1	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T104855Z.JPG	5/23/18 10:48	Dive12	-72.26318333	41.24503	-27.949	1.4	IMG_8141.JPG	0	SB45	NA	3	0
LISMaRC_Spring2018_ROV_PT_20180523T105325Z.JPG	5/23/18 10:53	Dive12	-72.26315	41.24503667	-28.419	2.2	IMG_8142.JPG	0	SB45	NA	3	0
LISMaRC_Spring2018_ROV_PT_20180523T105757Z.JPG	5/23/18 10:57	Dive12	-72.26310667	41.24507833	-33.979	233.1	IMG_8147.JPG	0	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T110230Z.JPG	5/23/18 11:02	Dive12	-72.26309333	41.245075	-33.823	232.1	IMG_8149.JPG	-1	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T111120Z.JPG	5/23/18 11:11	Dive12	-72.263105	41.24507833	-33.509	232.3	IMG_8157.JPG	-1	SB45	NA	1	2
LISMaRC_Spring2018_ROV_PT_20180523T111318Z.JPG	5/23/18 11:13	Dive12	-72.263115	41.24508	-33.901	232.2	IMG_8158.JPG	-1	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T111529Z.JPG	5/23/18 11:15	Dive12	-72.2631	41.24504333	-29.593	296.8	IMG_8166.JPG	0	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T111711Z.JPG	5/23/18 11:17	Dive12	-72.26312	41.24503167	-28.732	344.9	IMG_8177.JPG	0	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T111734Z.JPG	5/23/18 11:17	Dive12	-72.26312333	41.24502333	-29.28	323.6	IMG_8179.JPG	-1	SB45	NA	2	1
LISMaRC_Spring2018_ROV_PT_20180523T111840Z.JPG	5/23/18 11:18	Dive12	-72.263105	41.24506667	-31.943	257.3	IMG_8187.JPG	-1	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T111846Z.JPG	5/23/18 11:18	Dive12	-72.26310167	41.24506167	-32.1	266.2	IMG_8188.JPG	-1	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T111852Z.JPG	5/23/18 11:18	Dive12	-72.26310167	41.24505667	-32.178	270.2	IMG_8189.JPG	-1	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T111902Z.JPG	5/23/18 11:19	Dive12	-72.26309667	41.24504667	-32.648	283.1	IMG_8190.JPG	-1	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T111935Z.JPG	5/23/18 11:19	Dive12	-72.26310167	41.24503333	-32.491	302.3	IMG_8191.JPG	0	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T112443Z.JPG	5/23/18 11:24	Dive12	-72.26310333	41.245065	-32.021	255.6	IMG_8199.JPG	0	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T112632Z.JPG	5/23/18 11:26	Dive12	-72.26309	41.24505667	-33.118	244.6	IMG_8200.JPG	-1	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T112641Z.JPG	5/23/18 11:26	Dive12	-72.26309	41.245055	-33.431	259.9	IMG_8201.JPG	0	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T112655Z.JPG	5/23/18 11:26	Dive12	-72.26308833	41.245055	-33.509	261.8	IMG_8202.JPG	0	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T113022Z.JPG	5/23/18 11:30	Dive12	-72.263085	41.245	-32.648	307.6	IMG_8210.JPG	-1	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T113031Z.JPG	5/23/18 11:30	Dive12	-72.26308833	41.24499833	-32.726	319.9	IMG_8211.JPG	0	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T113037Z.JPG	5/23/18 11:30	Dive12	-72.263095	41.24499167	-32.335	340.3	IMG_8212.JPG	0	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T113044Z.JPG	5/23/18 11:30	Dive12	-72.2631	41.24499	-32.256	355.9	IMG_8213.JPG	-1	SB45	NA	3	2

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180523T113053Z.JPG	5/23/18 11:30	Dive12	-72.26311833	41.24498833	-31.943	10.9	IMG_8214.JPG	0	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T113156Z.JPG	5/23/18 11:31	Dive12	-72.263205	41.24502167	-32.178	62	IMG_8222.JPG	-1	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T113254Z.JPG	5/23/18 11:32	Dive12	-72.263215	41.24502167	-31.395	58.3	IMG_8231.JPG	-1	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T113312Z.JPG	5/23/18 11:33	Dive12	-72.26322167	41.24503167	-31.316	40.9	IMG_8234.JPG	-1	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T113817Z.JPG	5/23/18 11:38	Dive12	-72.26298833	41.24491667	-32.726	157.6	IMG_8245.JPG	0	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T113949Z.JPG	5/23/18 11:39	Dive12	-72.26292167	41.24485333	-33.196	168.4	IMG_8247.JPG	0	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T114057Z.JPG	5/23/18 11:40	Dive12	-72.26291833	41.24485	-32.413	157.9	IMG_8251.JPG	0	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T114137Z.JPG	5/23/18 11:41	Dive12	-72.262915	41.24484833	-31.003	222.2	IMG_8254.JPG	0	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T114146Z.JPG	5/23/18 11:41	Dive12	-72.26290167	41.24483833	-31.16	231.1	IMG_8255.JPG	-1	SB45	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180523T114153Z.JPG	5/23/18 11:41	Dive12	-72.26289333	41.24482667	-30.768	248.5	IMG_8256.JPG	0	SB45	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180523T114200Z.JPG	5/23/18 11:42	Dive12	-72.26289167	41.24481667	-30.533	242.6	IMG_8257.JPG	-1	SB45	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180523T114253Z.JPG	5/23/18 11:42	Dive12	-72.262875	41.24478833	-30.925	153.8	IMG_8258.JPG	0	SB45	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180523T114302Z.JPG	5/23/18 11:43	Dive12	-72.26288167	41.24478167	-30.533	155.3	IMG_8259.JPG	-1	SB45	NA	2	4
LISMaRC_Spring2018_ROV_PT_20180523T114316Z.JPG	5/23/18 11:43	Dive12	-72.26287833	41.24477667	-29.907	168.5	IMG_8260.JPG	-1	SB45	NA	2	4
LISMaRC_Spring2018_ROV_PT_20180523T114453Z.JPG	5/23/18 11:44	Dive12	-72.26284167	41.24476	-30.063	211.2	IMG_8263.JPG	0	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T114518Z.JPG	5/23/18 11:45	Dive12	-72.26284333	41.24476	-30.063	200.1	IMG_8264.JPG	-1	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T114822Z.JPG	5/23/18 11:48	Dive12	-72.26285667	41.24477	-30.063	259.5	IMG_8266.JPG	-1	SB45	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180523T114902Z.JPG	5/23/18 11:49	Dive12	-72.26288167	41.24477667	-29.907	263.4	IMG_8267.JPG	-1	SB45	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180523T115451Z.JPG	5/23/18 11:54	Dive12	-72.26290833	41.24478333	-29.437	272.4	IMG_8274.JPG	0	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T115503Z.JPG	5/23/18 11:55	Dive12	-72.26289667	41.24477667	-29.358	271.7	IMG_8275.JPG	0	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T115533Z.JPG	5/23/18 11:55	Dive12	-72.26290167	41.24477833	-29.358	272.1	IMG_8277.JPG	0	SB45	NA	2	2
LISMaRC_Spring2018_ROV_PT_20180523T115553Z.JPG	5/23/18 11:55	Dive12	-72.26289333	41.244765	-29.515	272.3	IMG_8279.JPG	0	SB45	NA	1	0
LISMaRC_Spring2018_ROV_PT_20180523T120435Z.JPG	5/23/18 12:04	Dive12	-72.26289167	41.24476	-29.593	272.2	IMG_8286.JPG	0	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T120445Z.JPG	5/23/18 12:04	Dive12	-72.262895	41.24475667	-29.593	272.8	IMG_8287.JPG	0	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T120451Z.JPG	5/23/18 12:04	Dive12	-72.26289333	41.24475667	-29.515	272.3	IMG_8288.JPG	0	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T120504Z.JPG	5/23/18 12:05	Dive12	-72.26289167	41.244755	-29.437	276.1	IMG_8289.JPG	-1	SB45	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180523T120510Z.JPG	5/23/18 12:05	Dive12	-72.262895	41.244755	-29.437	271.8	IMG_8290.JPG	-1	SB45	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180523T120524Z.JPG	5/23/18 12:05	Dive12	-72.26289	41.24476	-29.28	275.5	IMG_8292.JPG	-1	SB45	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180523T120636Z.JPG	5/23/18 12:06	Dive12	-72.2629	41.24476167	-29.045	271.2	IMG_8293.JPG	-1	SB45	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180523T120647Z.JPG	5/23/18 12:06	Dive12	-72.26289667	41.24475833	-29.28	271	IMG_8294.JPG	0	SB45	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180523T120709Z.JPG	5/23/18 12:07	Dive12	-72.2629	41.24475833	-28.81	271.5	IMG_8295.JPG	0	SB45	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180523T121338Z.JPG	5/23/18 12:13	Dive12	-72.26291333	41.24477167	-28.889	271.9	IMG_8307.JPG	-1	SB45	NA	2	0
LISMaRC_Spring2018_ROV_PT_20180523T121759Z.JPG	5/23/18 12:17	Dive12	-72.26292333	41.24477667	-29.124	272.2	IMG_8312.JPG	0	SB45	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180523T121936Z.JPG	5/23/18 12:19	Dive12	-72.26290833	41.24476833	-29.202	271.7	IMG_8313.JPG	-1	SB45	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180523T122116Z.JPG	5/23/18 12:21	Dive12	-72.26297	41.24474167	-28.967	272.4	IMG_8314.JPG	-1	SB45	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180523T122306Z.JPG	5/23/18 12:23	Dive12	-72.262895	41.24475167	-29.28	272.4	IMG_8317.JPG	-1	SB45	NA	3	4
LISMaRC_Spring2018_ROV_PT_20180523T122316Z.JPG	5/23/18 12:23	Dive12	-72.262895	41.24475	-28.889	272.4	IMG_8318.JPG	-1	SB45	NA	3	2
LISMaRC_Spring2018_ROV_PT_20180523T173857Z.JPG	5/23/18 17:38	Dive13	-72.26705167	41.19602	-41.341	150.1	IMG_8357.JPG	0	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T173904Z.JPG	5/23/18 17:39	Dive13	-72.26705833	41.19602	-41.341	150.4	IMG_8356.JPG	-1	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T173910Z.JPG	5/23/18 17:39	Dive13	-72.26705833	41.19601667	-41.341	143.3	IMG_8355.JPG	-1	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T173924Z.JPG	5/23/18 17:39	Dive13	-72.26705667	41.19601833	-41.42	147.4	IMG_8354.JPG	-1	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T173934Z.JPG	5/23/18 17:39	Dive13	-72.26705667	41.19601833	-41.733	147.8	IMG_8353.JPG	-1	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T173952Z.JPG	5/23/18 17:39	Dive13	-72.26705833	41.19601667	-41.263	148.6	IMG_8352.JPG	-1	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T174009Z.JPG	5/23/18 17:40	Dive13	-72.26707	41.196015	-41.028	133.4	IMG_8351.JPG	0	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T174022Z.JPG	5/23/18 17:40	Dive13	-72.26709	41.196015	-41.028	166.2	IMG_8350.JPG	-1	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T174042Z.JPG	5/23/18 17:40	Dive13	-72.267115	41.196005	-40.95	100.7	IMG_8349.JPG	-1	NA	NB24	4	4

Pic	pic_date_time	dive	ROV_lon_dd	ROV_lat_dd	ROV_depth	ROV_pos_head	Original.Pic.File.Name	gps.lag.seconds	block	site	quality	lasers visible
LISMaRC_Spring2018_ROV_PT_20180523T174055Z.JPG	5/23/18 17:40	Dive13	-72.26711833	41.196005	-40.95	355.9	IMG_8348.JPG	0	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T174217Z.JPG	5/23/18 17:42	Dive13	-72.26759167	41.19613167	-40.401	86.2	IMG_8347.JPG	0	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T174227Z.JPG	5/23/18 17:42	Dive13	-72.26759167	41.19613333	-40.558	86.6	IMG_8346.JPG	0	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T175036Z.JPG	5/23/18 17:50	Dive13	-72.26726333	41.19615833	-40.636	87.9	IMG_8345.JPG	-1	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T175509Z.JPG	5/23/18 17:55	Dive13	-72.267155	41.19614667	-40.558	100.7	IMG_8344.JPG	0	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T175913Z.JPG	5/23/18 17:59	Dive13	-72.26702333	41.19610167	-41.498	88.4	IMG_8343.JPG	0	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T175919Z.JPG	5/23/18 17:59	Dive13	-72.267025	41.1961	-41.576	99	IMG_8342.JPG	0	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T175933Z.JPG	5/23/18 17:59	Dive13	-72.26702	41.196105	-41.341	91.2	IMG_8341.JPG	0	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T175943Z.JPG	5/23/18 17:59	Dive13	-72.26701167	41.19610667	-41.89	90.3	IMG_8340.JPG	0	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T180043Z.JPG	5/23/18 18:00	Dive13	-72.26701167	41.19612	-41.498	99.7	IMG_8339.JPG	0	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T180108Z.JPG	5/23/18 18:01	Dive13	-72.26701167	41.19611667	-41.498	94.7	IMG_8338.JPG	-1	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T180325Z.JPG	5/23/18 18:03	Dive13	-72.26702667	41.19612	-41.498	103.3	IMG_8337.JPG	0	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T180505Z.JPG	5/23/18 18:05	Dive13	-72.26701333	41.196115	-41.576	85.7	IMG_8336.JPG	0	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T180620Z.JPG	5/23/18 18:06	Dive13	-72.267035	41.19611667	-41.106	84.8	IMG_8335.JPG	-1	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T180626Z.JPG	5/23/18 18:06	Dive13	-72.267035	41.19611667	-41.576	83.3	IMG_8334.JPG	-1	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T180657Z.JPG	5/23/18 18:06	Dive13	-72.26699833	41.196125	-41.576	102.6	IMG_8333.JPG	0	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T180807Z.JPG	5/23/18 18:08	Dive13	-72.26699167	41.19613667	-41.341	100.9	IMG_8332.JPG	0	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T180837Z.JPG	5/23/18 18:08	Dive13	-72.26694	41.19614167	-42.046	116.3	IMG_8331.JPG	0	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T180843Z.JPG	5/23/18 18:08	Dive13	-72.266935	41.19614167	-42.046	117	IMG_8330.JPG	0	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T180922Z.JPG	5/23/18 18:09	Dive13	-72.26692333	41.196145	-41.968	100.1	IMG_8329.JPG	-1	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T180932Z.JPG	5/23/18 18:09	Dive13	-72.26692	41.19614667	-41.968	92.3	IMG_8328.JPG	-1	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T181144Z.JPG	5/23/18 18:11	Dive13	-72.26689167	41.19613667	-42.281	110.7	IMG_8327.JPG	-1	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T182000Z.JPG	5/23/18 18:20	Dive13	-72.26690667	41.19609667	-41.811	17	IMG_8326.JPG	-1	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T182008Z.JPG	5/23/18 18:20	Dive13	-72.26692167	41.196115	-41.263	31.5	IMG_8325.JPG	-1	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T182200Z.JPG	5/23/18 18:22	Dive13	-72.26705333	41.19629167	-40.636	72.4	IMG_8324.JPG	-1	NA	NB24	4	4
LISMaRC_Spring2018_ROV_PT_20180523T182214Z.JPG	5/23/18 18:22	Dive13	-72.26701167	41.19631	-40.793	81.8	IMG_8323.JPG	-1	NA	NB24	4	4

Appendix 3-6: Physical Oceanographic Characterization Station Locations

Bottom Mooring Station Locations

Table 6.1-1. Spring 2017 Moored Frames - Station Location and Deployment Summary

Station ID	Latitude	Longitude	Sensors	Deploy Date (2017)	Recovery Date (2017)	Water Depth (m)	Deployment Length (days)
SOW1	41.303300°	-71.903817°	-AQD 2 kHz HR -SBE37 CT/P -ADCP 600 kHz	30 MAR	7 JUN	22.6	70
EID2	41.325933°	-71.927667°	-AQD 2 kHz HR -SBE37 CT/P -ADCP 1200 kHz	28 MAR	7 JUN	4.6	72
WID3	41.310900°	-71.968917°	-AQD 2 kHz HR -SBE37 CT/P -ADCP 1200 kHz	28 MAR	8 JUN	5.5	73

Table 6.1-2. Winter 2017-2018 Moored Frames - Station Location and Deployment Summary

Station ID	Latitude	Longitude	Station Depth (meters)	RDI ADCP SN/Freq	SBE 37 SN	AQD SN
SOW1	41 18.1977	-71 54.2284	21.5	1094/600	9695	8445
EID2	41 19.5557	-71 55.6593	3.9	10463/1200	9673	8455
WID3	41 18.6537	-71 58.1355	4.8	10462/1200	9696	8432
WFW4	41 17.4727	-72 02.2383	10.3	6615/600	9694	8438
SFW5	41 16.2218	-71 58.3172	6.3	11708/1200	9674	8554

Spring 2017 Moored Frames - Station Locations

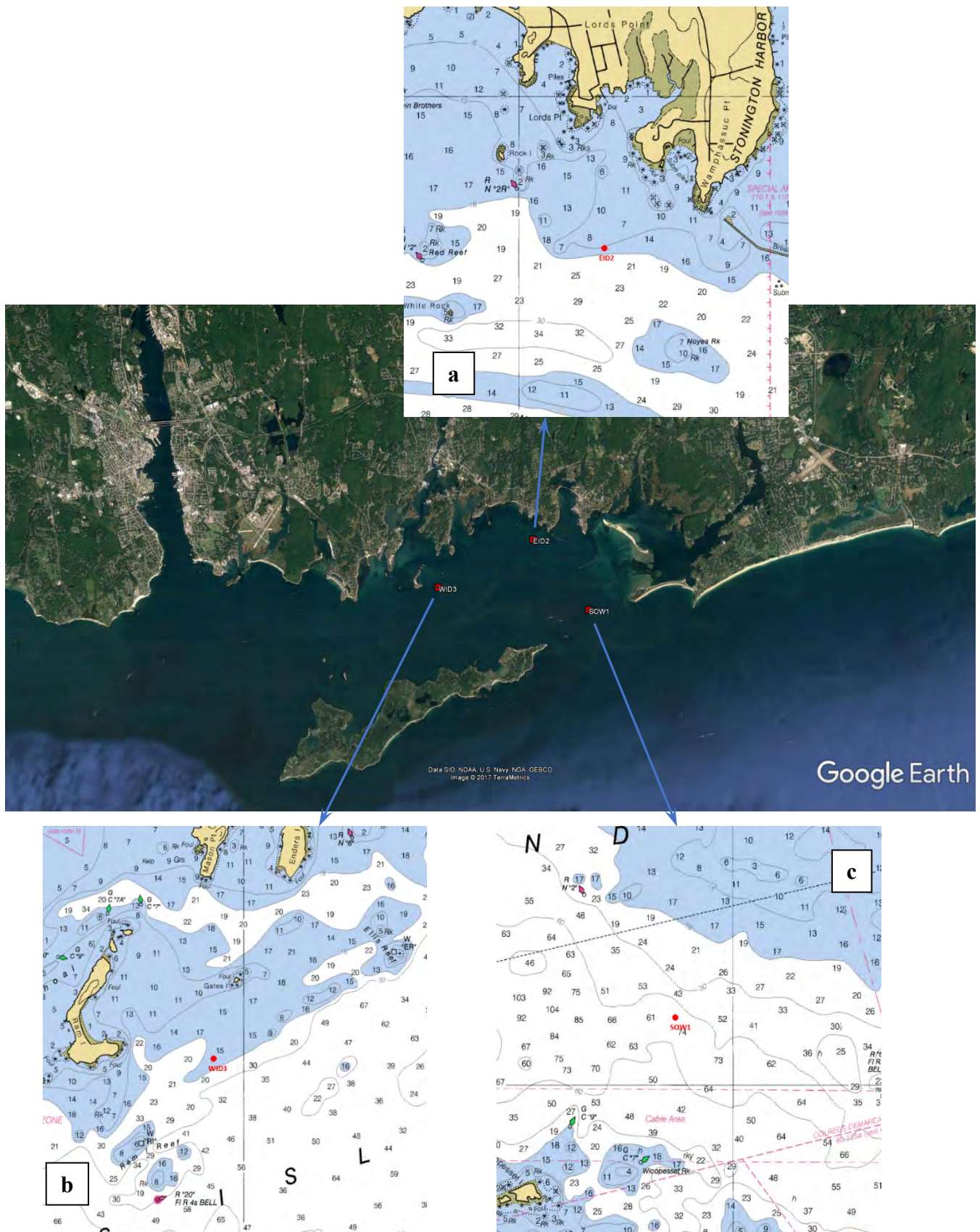


Figure 6.1-1. Location of the three frames deployed in Fishers Island Sound during Spring of 2017, a) detail of bathymetry (in feet) near EID2 - the Eastern Inside Dissipative station, b) bathymetry (in feet) at WID3 - Western Inside Dissipative station, c) bathymetry (in feet) at SOW1 - Southern Outside Wave station.

Winter 2017-2018 Moored Frames - Station Locations



Figure 6.1-2. Location of the five bottom moored frames in Fishers Island Sound for the Winter 2017-2018 data collection campaign. Yellow stations were occupied during the Spring 2017 campaign, the two red stations are new locations.

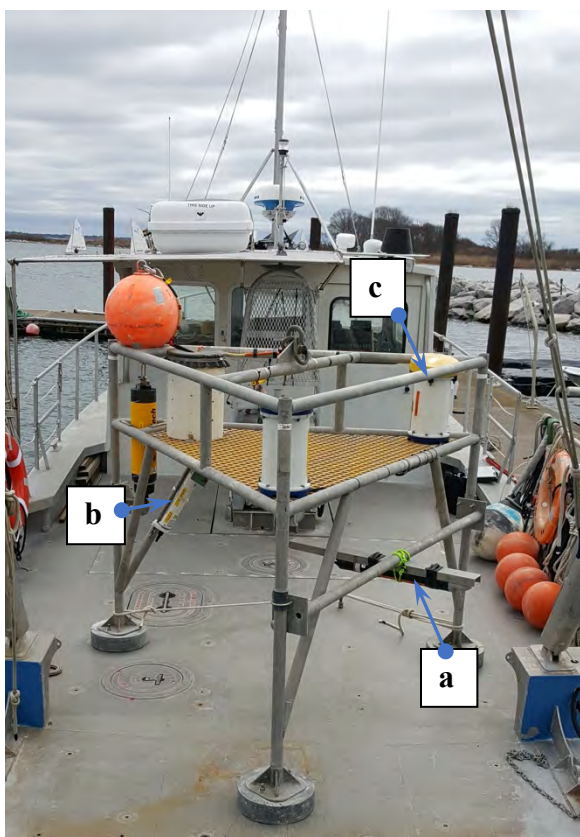


Figure 6.1-3. Frame deployed at SOW1 – all frames were equipped similarly, with a) Nortek High Resolution downward looking Aquadopp profiler, b) Sea-Bird Instruments Model 37 SMP Conductivity/Temperature/Pressure sensor, and c) RD Instruments acoustic Doppler current profiler with wave array firmware.

Conductivity, Temperature and Depth (CTD) Station Locations

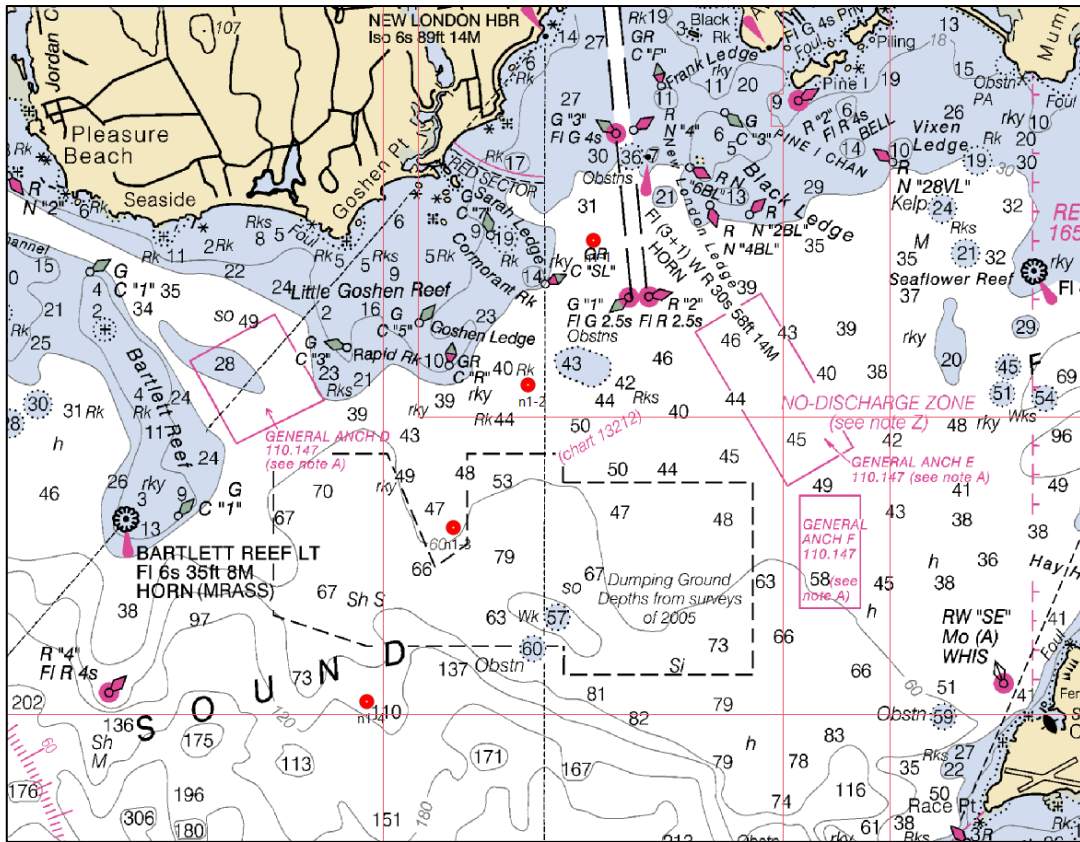
Table 6.1-3. CTD 12 Hour Survey – Winter 2017 - Station Locations

Station ID	Latitude	Longitude	Station Depth (meters)	N Casts
N1-1	41 17.9177	72 05.0212	6.1	5
N1-2	41 17.1696	72 05.4720	10.9	10
N1-3	41 16.4313	72 05.9873	20.1	10
N1-4	41 15.5349	72 06.5856	33.5	6
N2-1	41 18.1732	72 10.7515	9.8	6
N2-2	41 17.3729	72 10.7154	14.0	12
N2-3	41 16.5301	72 10.6272	17.7	12
N2-4	41 15.5604	72 10.5426	32.6	7
N3-1	41 17.1089	72 14.6969	16.5	6
N3-2	14 16.1559	72 14.6969	17.4	11
N3-3	41 15.2662	72 14.6969	28.0	11
N3-4	41 14.3049	72 14.6969	33.8	6
N4-1	41 15.5647	72 20.4353	5.8	6
N4-2	41 15.0995	72 19.6817	8.5	11
N4-3	41 14.5568	72 18.7853	32.3	11
N4-4	41 13.9125	72 17.7541	36.6	6
N5-1	41 17.7994	72 02.5349	9.1	8
N5-2	41 16.8567	72 02.5349	12.5	8
N5-3	41 17.3042	72 00.0604	14.0	8
N5-4	41 18.1633	72 00.0604	9.8	9

Table 6.1-4. CTD 12 Hour Survey - Spring 2018 - Station Locations

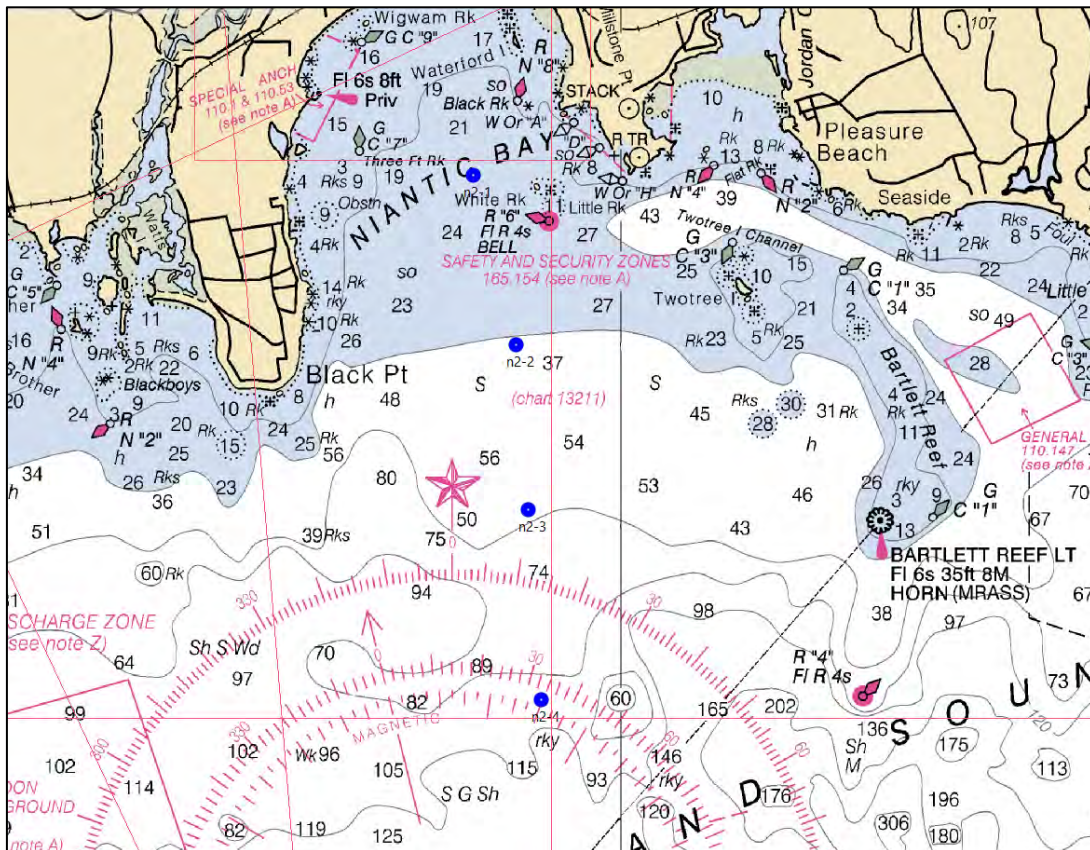
Station ID	Latitude	Longitude	Station Depth (meters)	N Casts
N0-1	41 17.6108	71 51.4745	21.1	7
N0-2	41 17.0093	71 53.4086	22.0	7
N0-3	41 16.3598	71 53.0402	42.9	7
N0-4	41 17.0412	71 51.0424	36.7	8
N1-1	41 18.8733	71 55.3366	9.5	8
N1-2	41 18.8733	71 57.3814	16.4	8
N1-3	41 18.0035	71 57.3814	19.4	8
N1-4	41 18.0035	71 55.3366	20.0	8
N21-1	41 17.9177	72 05.0212	6.1	7
N21-2	41 17.1696	72 05.4720	10.9	12
N21-3	41 16.4313	72 05.9873	20.1	13
N21-4	41 15.5349	72 06.5856	33.5	7
N22-1	41 18.1732	72 10.7515	9.8	6
N22-2	41 17.3729	72 10.7154	14.0	11
N22-3	41 16.5301	72 10.6272	17.7	12
N22-4	41 15.5604	72 10.5426	32.6	6
N23-1	41 17.1089	72 14.6969	16.5	6
N23-2	14 16.1559	72 14.6969	17.4	12
N23-3	41 15.2662	72 14.6969	28.0	12
N23-4	41 14.3049	72 14.6969	33.8	7
N24-1	41 15.5647	72 20.4353	5.8	6
N24-2	41 15.0995	72 19.6817	8.5	12
N24-3	41 14.5568	72 18.7853	32.3	12
N24-4	41 13.9125	72 17.7541	36.6	7
N6-1	41 14.7994	72 31.4255	9.8	7
N6-2	41 13.8567	72 31.4255	26.1	13
N6-3	41 13.3042	72 31.4255	32.5	13
N6-4	41 12.1633	72 31.4255	17.2	7

CTD 12 Hour Survey Winter 2017- Station Locations



Nov 28-29th

N1 Transect

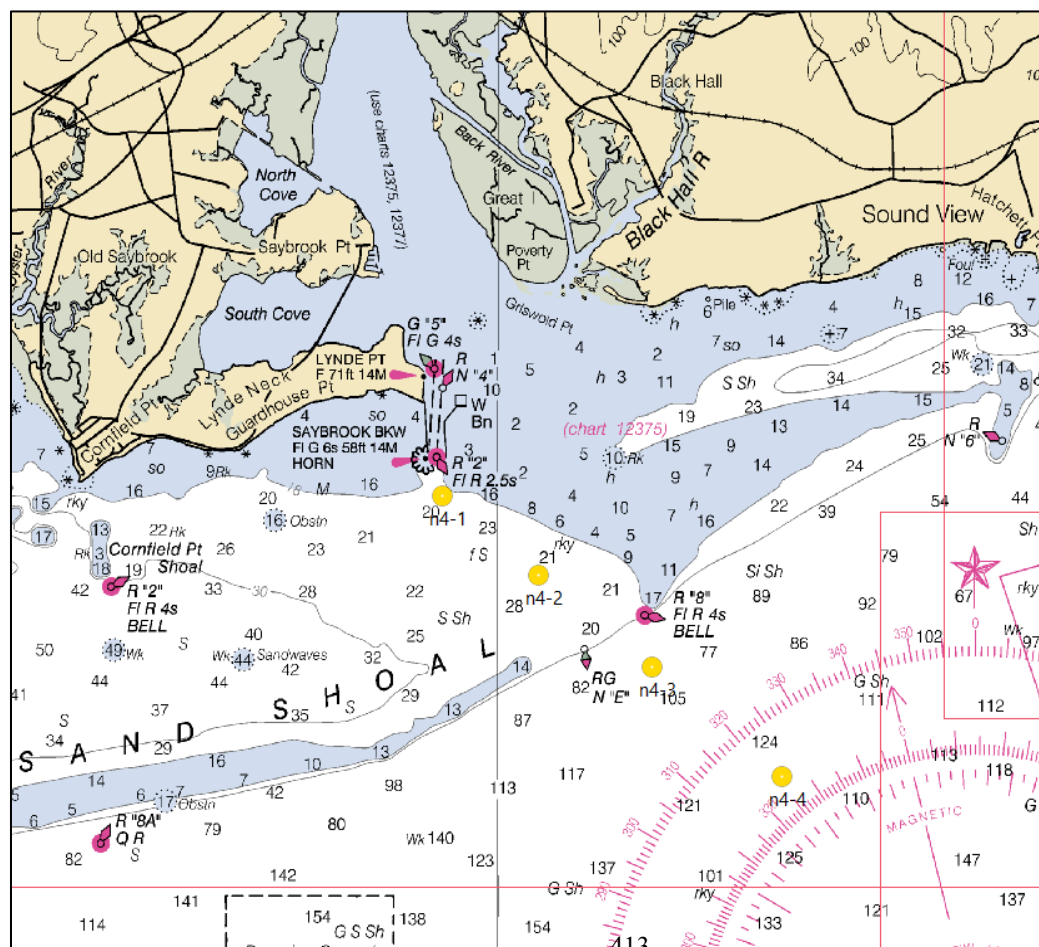
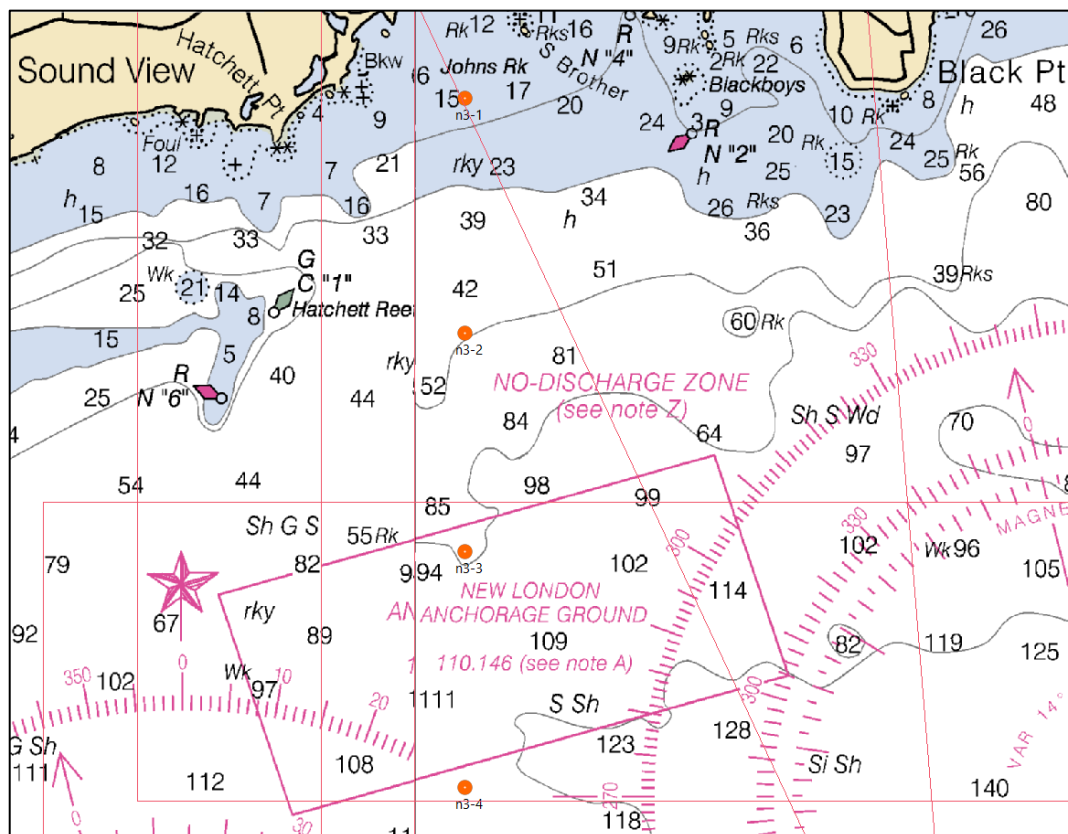


Nov 29-30th

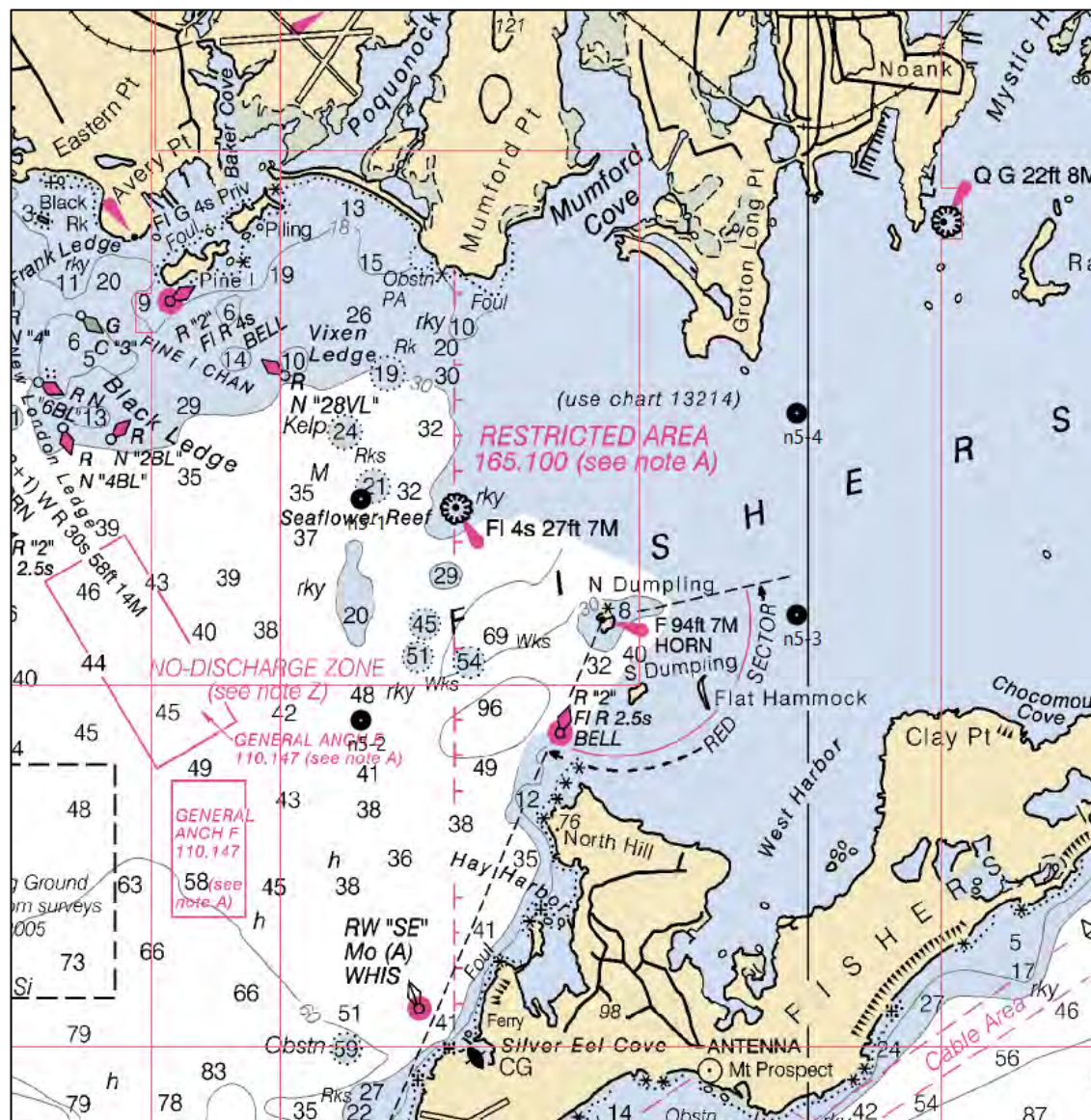
N2 Transect

27 casts

CTD 12 Hour Survey Winter 2017- Station Locations (cont'd)

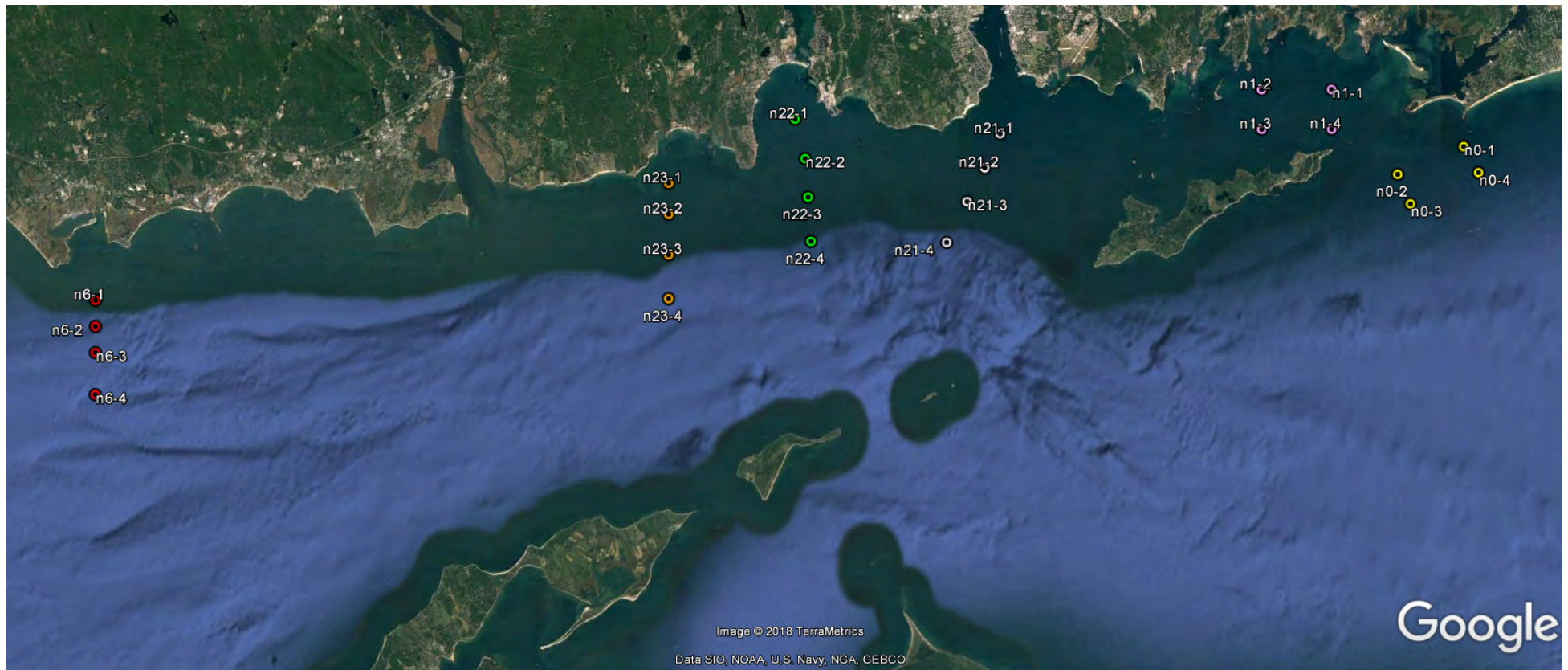


CTD 12 Hour Survey Winter 2017- Station Locations (cont'd)

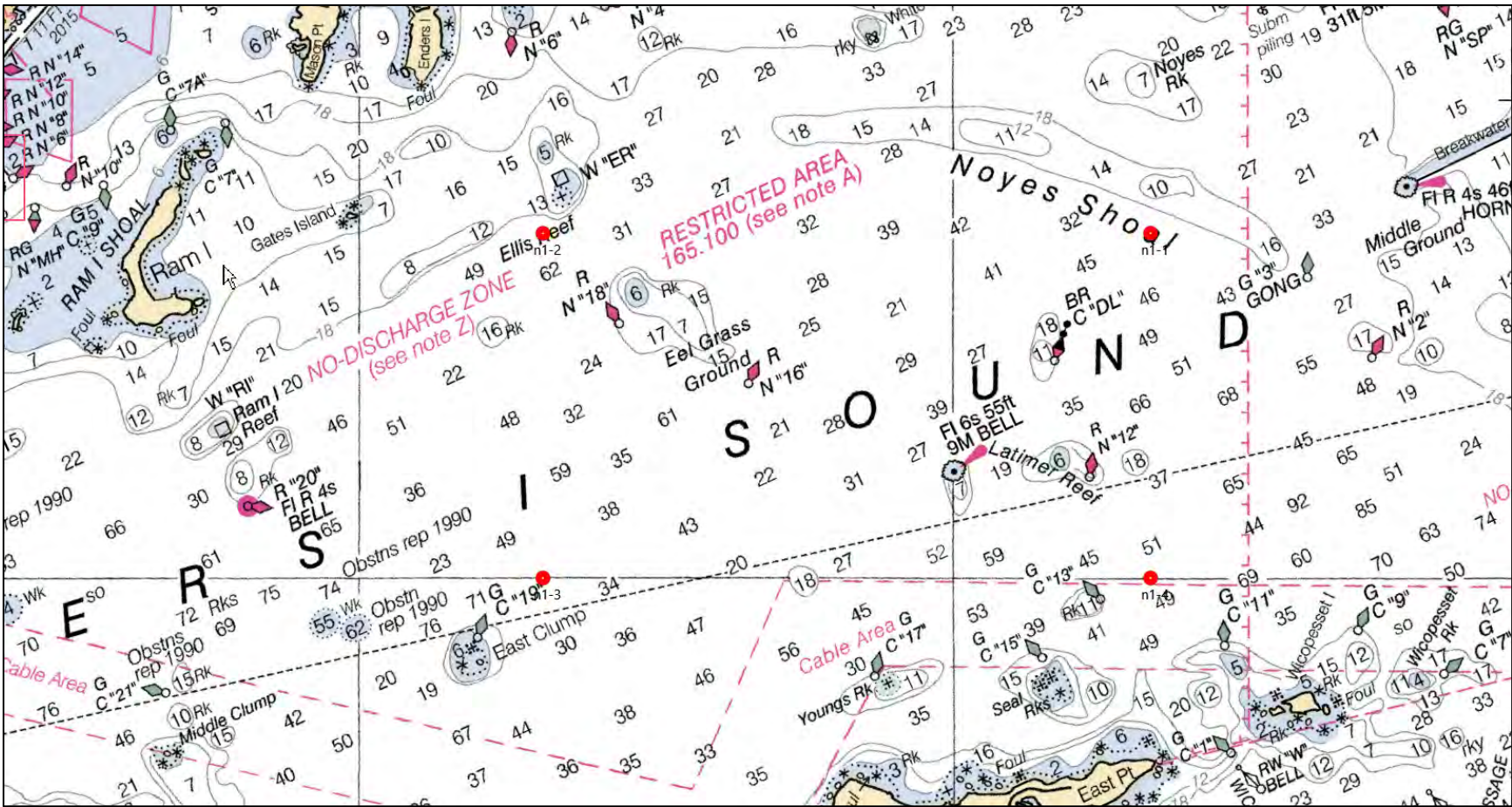


Nov 30-Dec 1
N5 Transect
22 casts

CTD 12 Hour Survey - Spring 2018 - Station Locations

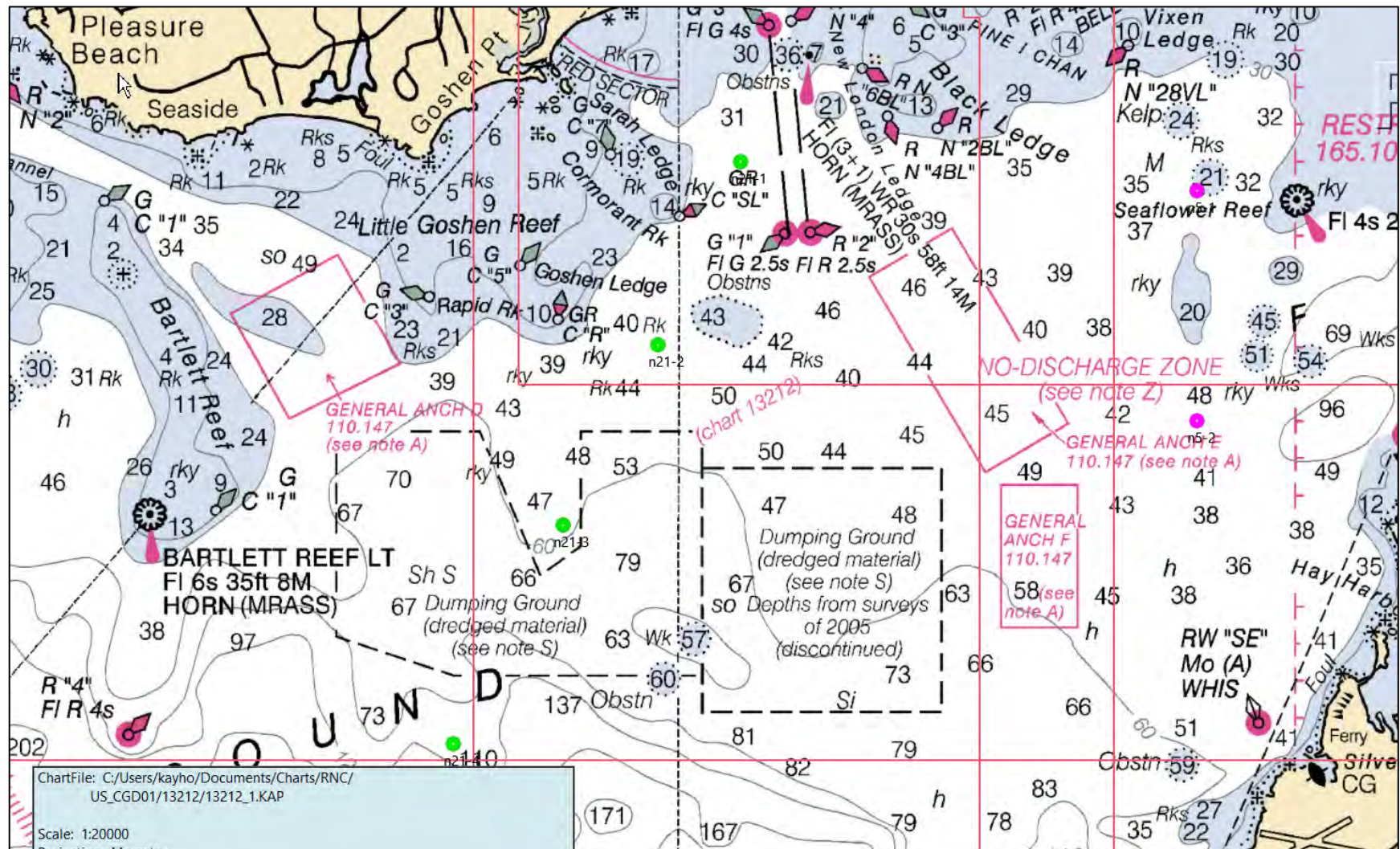


CTD 12 Hour Survey - Spring 2018 - Station Location Detail

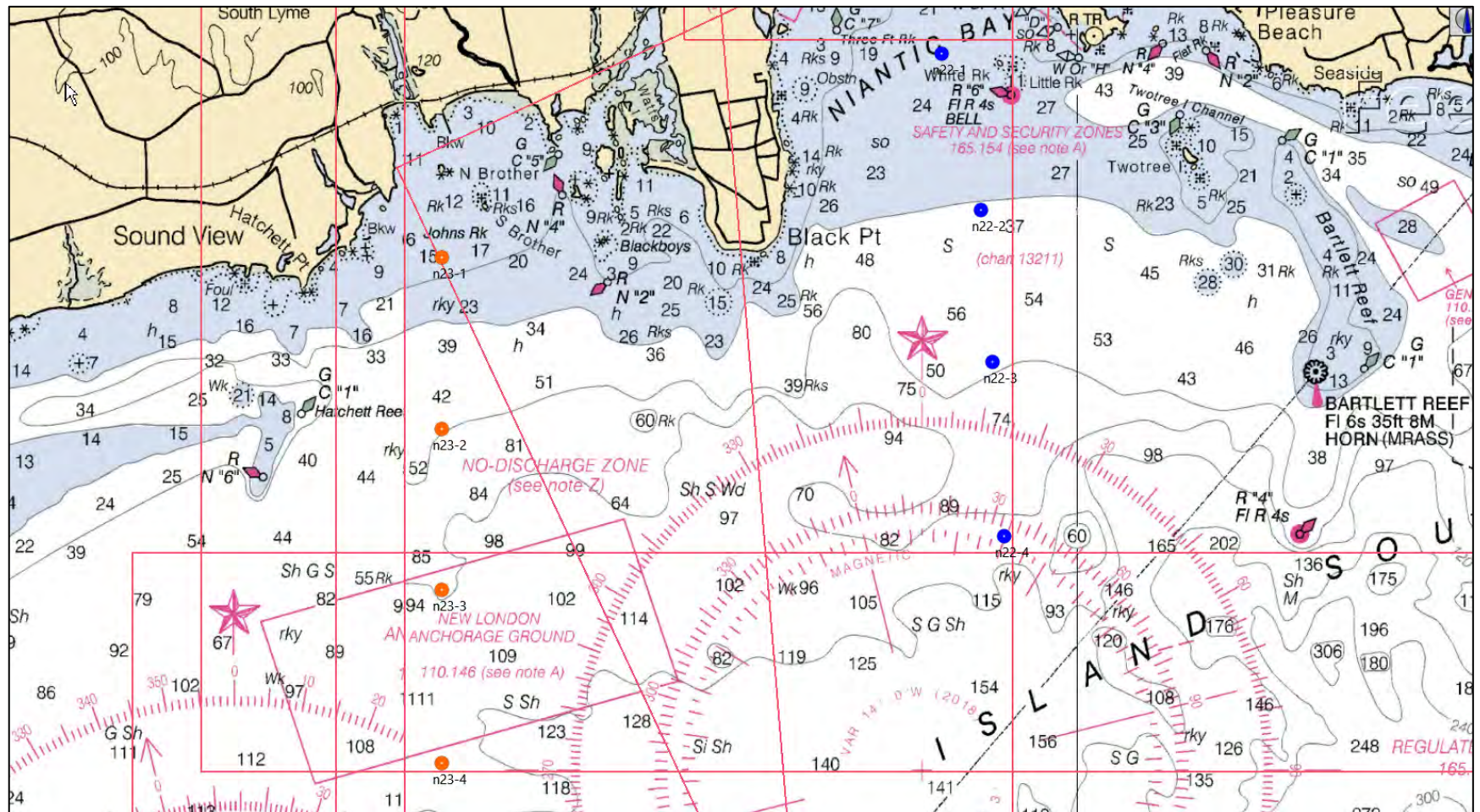
May 8-9th

N1 Transect

CTD 12 Hour Survey - Spring 2018 - Station Location Detail (cont'd)



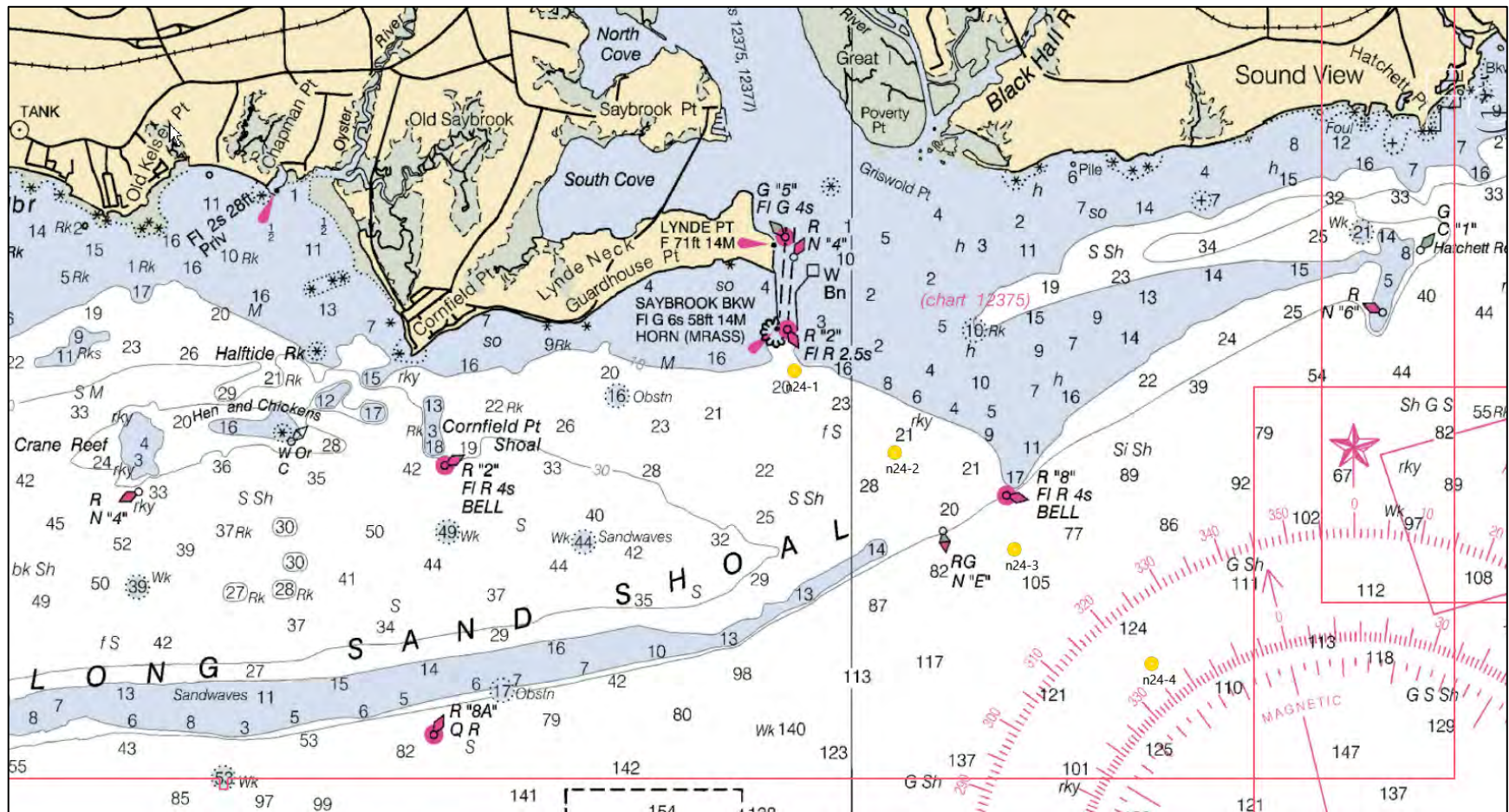
CTD 12 Hour Survey - Spring 2018 - Station Location Detail (cont'd)



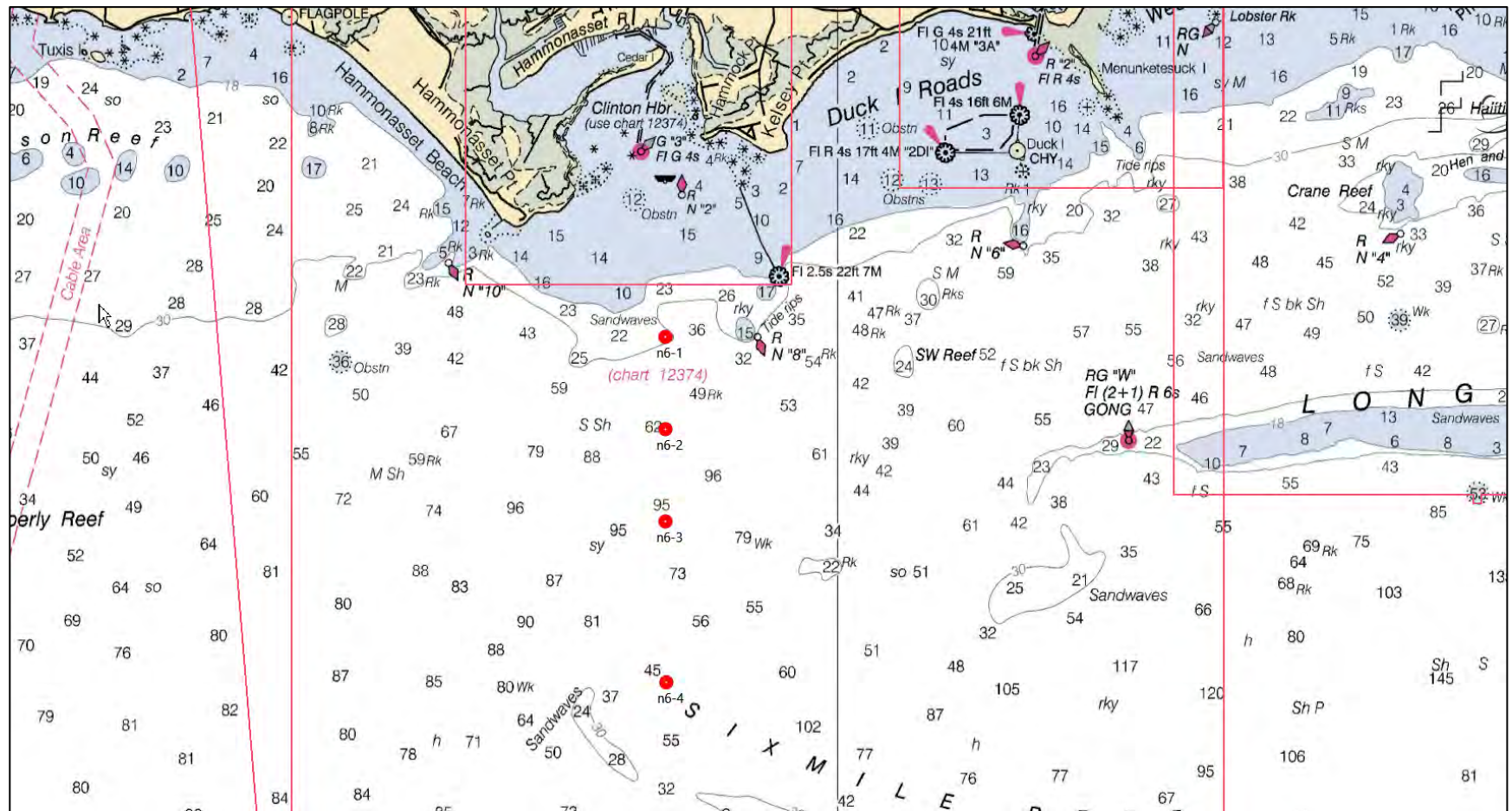
May 10-11th

N22 Transect (repeat from Nov 2017), N23 Transect

CTD 12 Hour Survey - Spring 2018 - Station Location Detail (cont'd)



CTD 12 Hour Survey - Spring 2018 - Station Location Detail (cont'd)



May 13-14th

N6 Transect

CTD 12 Hour Survey - Spring 2018 - Station Location Detail (cont'd)

