

MODERN DIVER ACQUIRED IMAGES FOR THE PHASE IIB ASSESSING ECOLOGICAL CHANGE AND RESILIENCY (AECR) PROJECT

METADATA

Dataset Originator: *University of Connecticut: Peter J. Auster, PhD.*

Publication Date: *12/1/2024*

Dataset Title: *Phase 2B AECR Modern Diver Imagery*

Online Linkage:

LDEO Data Repository - http://www.marine-geo.org/portals/lis/Data_doi=

Data url=

Abstract:

This dataset contains recent diver acquired digital images of the Phase II area of the Long Island Sound Cable Fund Seafloor Habitat Mapping Initiative. A total of 392 images were taken in May, June and August, 2023. Four sites were chosen, two that provide a direct comparison to the historical diver-collected imagery (Ellis Reef and Ram Island Reef) and two (Stratford Shoal and Northern Stratford Shoal) that provided new imagery to compare to that taken during the Phase I project (2012 and 2013). The images were taken by Dr. Peter Auster of the University of Connecticut/Sea Research Foundation using an Olympus TG6 digital underwater camera with Keldan CR196 video lights used in handheld mode and a SONY RX100 III digital camera in a Sea & Sea-RX100 III underwater housing while mounted on a quadrapod frame with Light and Motion SOLAS lights. The quadrapod mounted camera produced images covering 0.25 m². A total of 190 handheld images and 343 quadrapod images were acquired, with 53 and 40 of these images reviewed for presence of key taxa, respectively.

Dataset purpose:

The digital images were reviewed and catalogued into a spreadsheets to serve as modern assessment of the seafloor communities in the Phase II area that were compared to the historical conditions/taxa observed in the historical dive imagery as part of the Assessing Ecological Change and Resiliency (AECR) in Long Island Sound project. The genesis of the AECR project was that data collected by the Long Island Sound Mapping and Research Collaborative (LISMaRC) in both the Phase I (2012 and 2013) and Phase II (2017 and 2018) components of the Long Island Sound Seafloor Habitat Mapping Initiative revealed that significant ecological changes have occurred based upon historical knowledge of several of the Principal Investigators of the Long Island Sound Mapping and Research Collaborative (LISMaRC) team. The newly acquired diver images served as one data set used to compare modern conditions to historical presence of key taxa identified by AECR investigators.

Time period of content:

The new diver acquired imagery were collected in May, June and August, 2023.

Dataset Status: *Complete*

Update Frequency: *None planned. However, the possibility of periodic site revisitation has been proposed to the CT-DEEP to monitor future changes in the seafloor communities of LIS, given the changes observed from these historical images to recently collected images.*

Theme Keywords:

Connecticut, New York, Long Island Sound, estuary, divers, imagery, University of Connecticut, UConn, Long Island Sound Mapping and Research Collaborative, LISMaRC, Long Island Sound Cable Fund, LISCF, epifauna, structure forming taxa..

Access Constraints: None

Use Constraints:

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Point of Contact:

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Dataset Credit:

Images taken by Peter Auster, PhD. 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 Cable Fund Seafloor Habitat Mapping Initiative 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:

See below for positional accuracy.

Completeness:

Complete - Representative images from each of the four sites listed above have been identified and analyzed for presence of attendant taxa.

Positional accuracy:Sample Site Positional Accuracy

The dive image location data was assumed to be the dive site location as recorded on the field logs from the Garmin 7610 Chart Plotter/Sonar with a 10 Hz GPS/GLONASS system on the University of Connecticut's Research Vessel Osprey. Positional accuracy was considered to be approximately 3 meters.

Process Steps:

Image Analysis: Images were analyzed for presence/absence of several taxa (see below). The resulting data was recorded in a MS Excel spreadsheet.

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Attributes:

Image Files: Files were save as .jpg file format with file sizes ranging from 5.7 to 12.2 MegaBytes (MB). File names included the mode of capture (handheld or quadrapod), the date of the original photo and the location.

Taxa Identified

Common name	Taxonomic name
branching sponge	Haliclona oculata
nipple sponge	Polymastia boletiformis (prev. robusta)
bread sponge	Halichondria panicea
boring sponge	Cliona spp. (celata)
red beard sponge	Clathria (prev. Microciona) prolifera
[white sponge]	Desmacella infundibuliformis
colonial tunicate	Ascidaceae
carpet tunicate	Didemnum sp.
Botrylloides tunicate	Botrylloides diegensis
northern star coral	Astrangia poculata
frilled anemone	Metridium senile
ghost anemone	Diadumene leucolena
lined anemone	Diadumene lineata
tube-dwelling anemone	Ceriantheopsis americana
northern red anemone	Urticina felina
erect bryozoa	Bryozoa
Bugula sp.	Bugula sp.
tubularian	Tubularia indivisa
blue mussel	Mytilus edulis
ark	Arcidae
surf clam	Spisula solidissima
barnacle	Balanus
gastropod	Gastropoda
moon snail	Euspira heros
channeled whelk	Busycotypus canaliculatus
red-finger aeolis	Coryphella verrucosa
Atlantic puple urchin	Arbacia punctulata
common sea star	Asterias rubens
blood star	Henricia sanguinolenta
horseshoe crab	Limulus polyphemus
hermit crab	Anomura

lady crab	Ovalipes ocellatus
Jonah crab	Cancer borealis
Atl. rock crab	Cancer irroratus
blue crab	Callinectes sapidus
blue swimming crab	Portunus sp.
spider crab	Libinia sp.
Amer. lobster	Homarus americanus
unknown shrimp	unknown shrimp
bony fish	Osteichthyes
winter flounder	Pseudopleuronectes americanus
summer flounder	Paralichthys dentatus
striped sea robin	Prionotus evolans
rock gunnel	Pholis gunnellus
cunner	Tautoglabrus adspersus
tautog	Tautoga onitis
scup	Stenotomus chrysops
grubby sculpin	Myoxocephalus aeneus
red algae	Rhodophyta
rock rust	Ralfsia verrucosa
kelp	Phaeophyceae
sugar kelp	Saccharina latissima
green algae	Chlorophyta

Metadata reference: *Ivar G. Babb, University of Connecticut, Department of Marine Sciences, 401-529-4022, ivar.babb@uconn.edu*