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

METADATA

Dataset Originator: *University of Connecticut: Ivar G. Babb*
Publication Date: *12/1/2024*
Dataset Title: *Phase 2B AECR Historic Diver Acquired Imagery*
Online Linkage:
LDEO Data Repository - http://www.marine-geo.org/portals/lis/
Data_doi=

Data url=

Abstract:
This dataset contains historical diver acquired images of the Phase II area of the Long Island Sound Cable Fund Seafloor Habitat Mapping Initiative. These 277 images were acquired from 1975 to 1993 in several areas within the larger Phase II area, including Beebe Cove, the Deep Hole east of Latimer Reef, Ellis Reef, Latimer Reef, New London Dump Site, North Dumpling, Race Rock and Ram Island Reef. The images were taken by either Dr. Peter Auster or Robert DeGoursey of the University of Connecticut over the course of multiple research projects. A variety of analog underwater cameras and lenses were used with Kodachrome@ or Ektachrome transparency film. Images were mounted as standard 35 mm slides. These slides were subsequently digitized using a Nikon Super Coolscan 4000 ED film scanner into .jpg format files and analyzed for presence of epifaunal taxa.

Dataset purpose:
The digital images were reviewed, scanned and catalogued into a spreadsheet to serve as a historical baseline of seafloor fauna in those areas of the Phase II area that was used to compare the historical conditions/taxa observed going back almost 50 years to those acquired in 2022 and 2023 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 historical diver images served as one data set used to compare historical presence of key taxa identified by AECR investigators.

Time period of content:
The diver acquired imagery were collected from the time period 1975 to 1993.

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 the historical imagery (videos and photos) to recently collected imagery (videos and photos).*

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:
Peter J. Auster, PhD., Department of Marine Sciences, University of Connecticut, 860-304-8842, peter.auster@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 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 eight sites listed above have been identified, digitized and analyzed for presence of attendant taxa.

Positional accuracy:
Sample Site Positional Accuracy
Owing to the historical nature of the diver-acquired imagery going back to the 1970's, 80's and 90's, the positional accuracy of the images is dependent upon the accuracy of the navigation systems used on the diver support vessel at that time. The location data was recorded as that of the feature location (e.g., reef) based on bathymetric and multibeam maps where the divers collected images.

Process Steps:
Image Frame Capture: Historical 35 mm slides were reviewed using a light table and representative images were selected from each of the sites. The 35 mm slides were then scanned using a Nikon Super Coolscan 4000 ED film scanner at a resolution of 4,000 dpi at 48-bit color depth. Files were save as .jpg file format with file sizes ranging from 4.2 to 8.4 MegaBytes (MB). File names included the date of the original photo and the location.
Image Analysis: Images were analyzed for presence/absence of several taxa (see below). The resulting data was recorded in a MS Excel spreadsheet.

Process Contact: *Peter J. Auster, PhD., Department of Marine Sciences, University of Connecticut, 860-304-8842, peter.auster@uconn.edu*

Attributes:
Frame Capture Image Files: Files were save as .jpg file format with file sizes ranging from 4.2 to 8.4 MegaBytes (MB). File names included 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
unknwon shrimp	unknown shrimp
bony fish	Osteichthyes
winter flounder	Pseudopleuronectes americanus
summer flounder	Paralichthys dentatus
striped sea robin	Prionotus evolans
rock gunnel	Pholis gunnellus
cunner	Tautogolabrus adspersus
tautog	Tautoga onitis
scup	Stenotomus chrysops
grubby sculpin	Myoxocephalus aenaeus
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*