

PONAR IMAGING AND SAMPLING SYSTEM FOR ASSESSING HABITATS (PISSAH) VIDEO ACQUISITION 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 PISSAH Video Acquisition*

Online Linkage:

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

Data url=

Abstract:

This dataset contains the video files obtained by the Ponar Imaging and Sampling System for Assessing Habitat (PISSAH) developed by the Long Island Sound Mapping and Research Collaborative (LISMaRC) to obtain both physical sediment grab samples and ultra-high definition (4K) video using the latest version of GoPro cameras mounted on the frame in both a forward and downward looking orientation. A three-day survey using the PISSAH deployed from the Research Vessel Weicker was conducted from October 19-21, 2022 to obtain modern seafloor imagery and grab samples in the Phase I and II areas. The PISSAH was used to acquire both physical sediment grab samples as well as the GoPro video from 18 sites in the Phase I and II areas of the Long Island Sound Cable Fund (LISCF) Seafloor Habitat Mapping Initiative that served as a modern-day assessment of the seafloor communities at these sites. The videos obtained were analyzed for the presence and percent cover of key taxa identified for the Assessing Ecological Change and Resiliency (AECR) project to compare with historical data/imagery from these sites to assess change or stability in these areas of Long Island Sound.

Dataset purpose:

The down looking PISSAH videos included two parallel laser beams in the view separated by 10 cm to provide a scale reference and were reviewed to ascertain the current conditions/taxa of the selected sites as part of the AECR project in Long Island Sound project. The genesis of the AECR project was that data collected by the 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 LISMaRC team. Eighteen sites were identified, most in the Phase II area (13) with five selected from sites in the Phase I area. The videos were the source of frame captures that were then analyzed for the presence and percent cover of several key taxa identified by the AECR team as likely experiencing some degree of change in the Sound.

Time period of content:

The PISSAH video was conducted during a three-day excursion from October 19-21, 2022.

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, University of Connecticut, UConn, Long Island Sound Mapping and Research Collaborative, LISMaRC, Long Island Sound Cable Fund, LISCF, epifauna, ecological change, resiliency, PISSAH, video.

Access Constraints: None

Use Constraints:

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Point of Contact:

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Dataset Credit:

The PISSAH was developed and deployed by 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:

None

Attribute accuracy:

See below for positional accuracy.

Completeness:

Complete – All down looking PISSAH videos have been reviewed and analyzed for presence and percent cover of the key AECR taxa.

Positional accuracy:

Video File Positional Accuracy – The position of the sampler was assumed to be directly below the stern of the vessel, although there may have been some deviation from this position based upon the unit being pushed by any bottom currents. Given this assumption, a GPS antenna was mounted on the stern rail of the RV Weicker to provide an accurate record of the position of the PISSAH throughout the course of the deployment. The GPS receiver was a GlobalSat BU-353N5 connected via USB to a laptop operating ArcGIS Pro. The GlobalSat web site describes the receiver as: “very

high sensitivity chipset (Tracking Sensitivity: -165 dBm), with extremely fast TTFF (Time To First Fix) at low signal level and support of NMEA 0183 data protocol. The USB GPS is WAAS/EGNOS capable, and for units sold in North America through authorized resellers, these units are WAAS/EGNOS enabled unless otherwise stated. Accuracy can be up to 5 meters 3D RMS with WAAS enabled and 10-15 meters 2D RMS WAAS disabled.” The 3D RMS was enabled, therefore, the positional accuracy of the PISSAH and therefore the acquired video was assumed to be ~5 meters.

Process Steps:

The PISSAH was deployed off the stern of the RV Weicker and lowered to approximately one meter off from the bottom. The deployment transects averaged between 12-16 minutes, from deck to deck. The time recorded by the GoPro’s was set to GMT/UTC. The GoPro cameras were started prior to deployment and stopped upon retrieval on the deck. At the start of each deployment the site/transect location was noted and placed in the view of the camera. The original file naming convention assigned by the GoPro cameras (e.g. GX010061.MP4) was maintained and recorded for each deployment/transect. The files were downloaded from the GoPro cameras to duplicate external hard drives daily for subsequent analysis.

Process Contact: Christopher Conroy, University of New Haven, cwconroy@newhaven.edu

Attributes:

Video Files: The GoPro 10 cameras recorded the HEVC video format in the .MP4 wrapper at a resolution of 3840x2160 pixels and data rate of 60 megapixels/second. The frame captures used for the analyses were saved in .tiff format with PackBits compression at 3840x2160 pixels using the RGB color model. The video files were re-named per the LIS Cable Fund requirements to include the project, team, video orientation, date and original GoPro file name.

Vessel Track: The vessel track was recorded every second into a .csv (comma separated value) file, with the date/time/time_ISO8601 and latitude and longitude in decimal degrees recorded. The vessel tracks for the three-day mission were combined into one .csv file and developed into an ESRI shapefile (.shp).

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