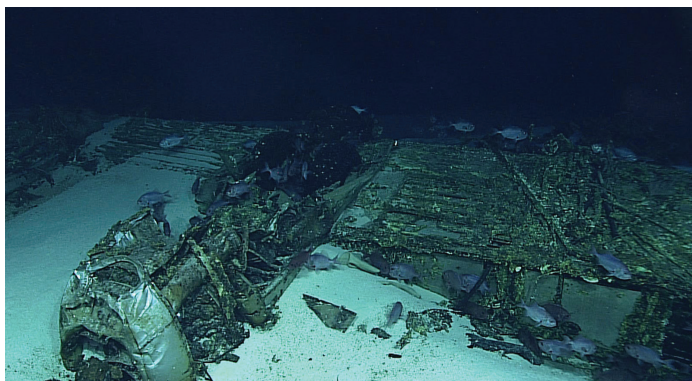# SEATUBE: A COLLABORATIVE TOOL FOR MARITIME HERITAGE ANALYSIS

NOAA Ocean Exploration is committed to exploring deepwater sites and making data available to the public. We explore, investigate, and characterize maritime heritage sites and resources and support the technologies that make it possible to do so. This entails considering how maritime heritage data is recorded, collaboratively interpreted, and distributed.

NOAA Ocean Exploration works closely with Ocean Networks Canada to implement SeaTube, a web-based annotation interface for ship-based remotely operated vehicle (ROV) operations. SeaTube is used by shipboard and shoreside expedition participants to log a variety of real-time observations during an ROV dive. Researchers are also invited to annotate observations after an expedition. After an expedition, annotations are reviewed for quality control and are archived to make video data more discoverable. As a result, maritime heritage video is a much more valuable, accessible, and usable data type than it has been in the past.

SeaTube and Maritime Heritage

SeaTube makes maritime heritage sites accessible to all users, providing tangible, guided experiences and enriching the underwater exploration and maritime heritage management experience. Some of the benefits of SeaTube are:

- SeaTube can be used to access collections of annotations associated with individual dive sites that can inform vernacular, regional, and thematic typologies.

- SeaTube eases the access to and use of valuable information in video, enhancing the efficiency of video as an interpretive tool for maritime heritage research.

- SeaTube supports and expands the multidisciplinary nature of maritime heritage research by enabling researchers from other disciplines to contribute to the analysis of maritime heritage sites.

Annotations

SeaTube annotations are time-stamped records of observations made in video collected during remotely operated vehicle dives. These observations are typically of biological, geological, or maritime heritage features.

- SeaTube users can annotate anything they see in these videos using standard vocabularies (or taxonomies).

EX2201_Dive02 "UCH Target" - Northern Gulf of Mexico

Map

3000 km
2000 mi

Leaflet | Marine Geoscience Data System

Video

OCEAN EXPLORATION

08:55:06 / 12:05:01   2022-02-25 18:50:07

Annotation List   220 of 220

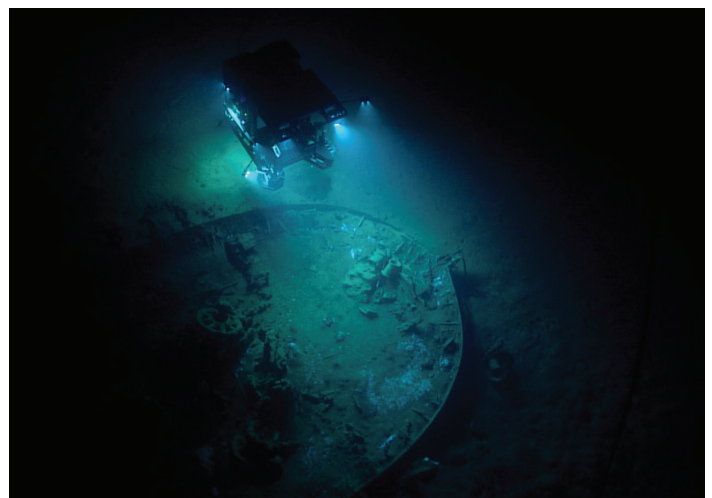| 18:50 | Shipwreck |
18:50	Anchor [ARC] Possible Admiralty Anchor (1)
18:51	Brick [ARC] Ballast Stones around Anchor
18:51	Marine Debris [ARC] Modern fishing line, micro-filament around anchor flukes
18:51	Small Material Culture [ARC] Bottles, dark, translucent
18:52	Frame [ARC] Degraded frame stations at sediment line, possibly on port and starboard of site
18:53	Stove [ARC] Stove with 2 pots, approx 30cm in diameter for each pot. Possible try-work
18:53	Marine Debris [ARC] Modern fishing line, micro-filament at base of stove
18:53	Ophidiidae (cusk-eels)	ID: 125505 [WoRMS]
18:53	Actinopterygii (ray-finned fishes)	ID: 10194 [WoRMS] wreckfishes?
18:54	Anchor [ARC] Possible Admiralty Anchor (2), broken at shank

Sensor Readings: 2022-02-25 18:50:07

Depth	1844.847500 m	2022-02-25 18:49:59
Oxygen Concentration	6.639150 mg/l	2022-02-25 18:49:59
Practical Salinity	34.967250 psu	2022-02-25 18:49:59
Temperature	4.284790°C	2022-02-25 18:49:59

- · These customized lists of commonly used terms allow for quick and consistent annotations.

- · There are separate taxonomies for different types of maritime heritage sites (i.e., shipwrecks and aircraft).

- SeaTube videos can be annotated at any time, during exploration and after.

- SeaTube annotations are listed chronologically as features were imaged by the ROV, enabling users to scroll through the list and select specific points of interest.

- SeaTube annotations are searchable, allowing users to query maritime heritage features and other observations within one or more sites.

Learn More

To learn more about how to contribute to the annotation of video collected during NOAA Ocean Exploration's expeditions on NOAA Ship *Okeanos Explorer,* visit:
https://oceanexplorer.noaa.gov/okeanos/collaboration-tools/science_annotations/welcome.html.

For more specific information about how to contribute to the annotation of NOAA Ocean Exploration's maritime heritage video, email:
archaeology.oceanexploration@noaa.gov.

Access SeaTube

To access SeaTube, visit:
https://data.oceannetworks.ca/ExpeditionManagement.

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