



# NAVAL HISTORY & HERITAGE COMMAND UNDERWATER ARCHAEOLOGY (UA) BRANCH

Shanna Daniel, NHHC UA Archaeological Conservator



## NAVAL HISTORY AND HERITAGE COMMAND

*Lest we forget their sacrifice*





# **NAVAL HISTORY & HERITAGE COMMAND UNDERWATER ARCHAEOLOGY (UA) BRANCH**

## **BRANCH MISSION**

**To preserve and tell the story of the U.S. Navy through managing, researching, conserving, and protecting the Navy's collection of more than 17,000 sunken and terrestrial military craft**

## **KEY FUNCTIONS**

- 1) Sunken & Terrestrial Military Craft Management**
- 2) Archaeological Research**
- 3) Conservation & Curation**
- 4) Public Outreach**

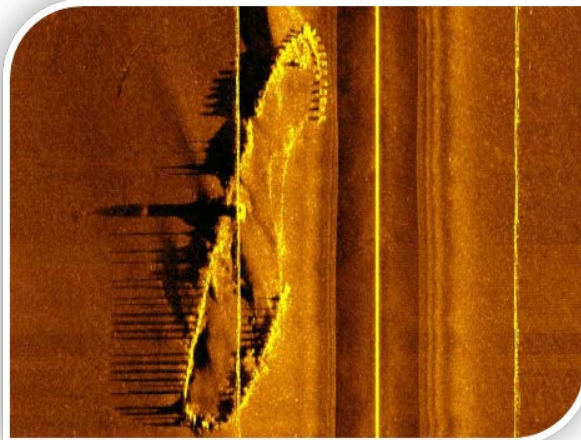




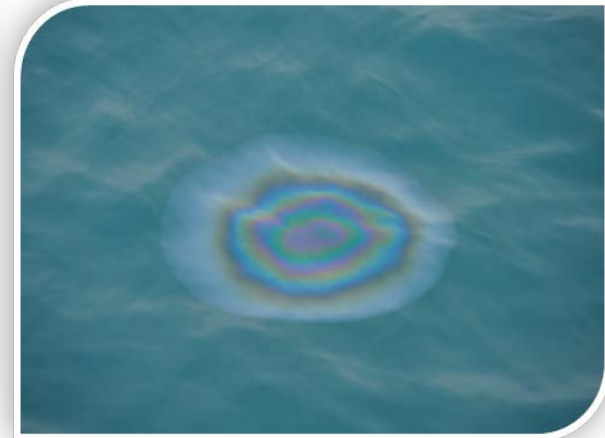
# MANAGEMENT OF SUNKEN MILITARY CRAFT



**HISTORICAL / CULTURAL VALUE**



**MARITIME GRAVES**



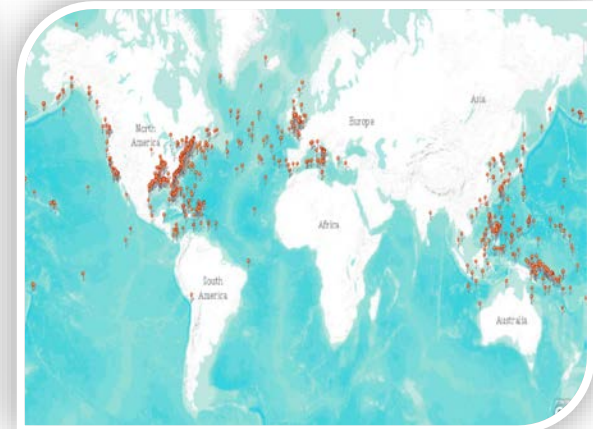
**ENVIRONMENTAL CONCERNS**



**PUBLIC SAFETY HAZARDS**



**SENSITIVE MATERIALS**



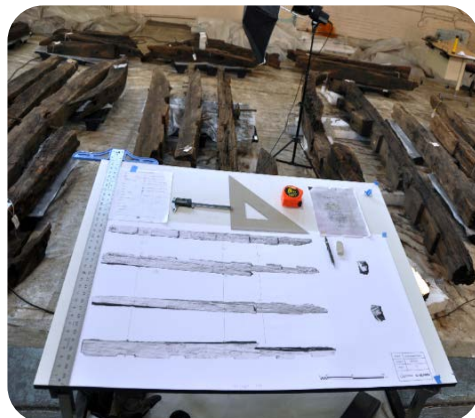
**SOVEREIGN IMMUNITY & OVERLAPPING JURISDICTIONS**



# ARCHAEOLOGICAL RESEARCH

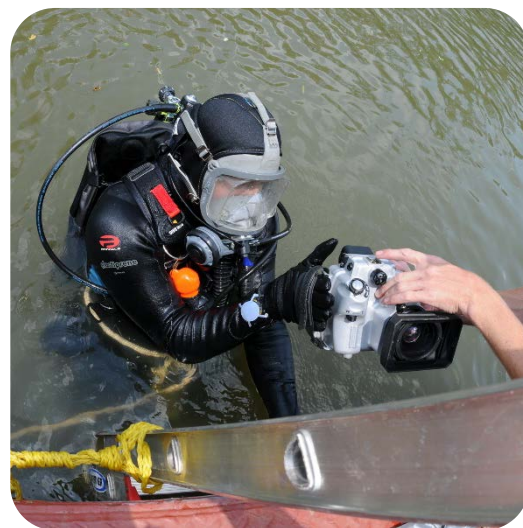
## DRIVERS

- Navy & Partner Field Operations
- Archaeological Research Permits



## TYPES OF PROJECTS

- Non-Intrusive & Remote Sensing Operations
- Site Excavations & Recoveries





# CONSERVATION & COLLECTION MANAGEMENT

## Artifacts in Treatment:

c. 250

## Curated Artifacts:

c.3,700

## Artifacts on Loan:

c.14,500

## Loan Institutions:

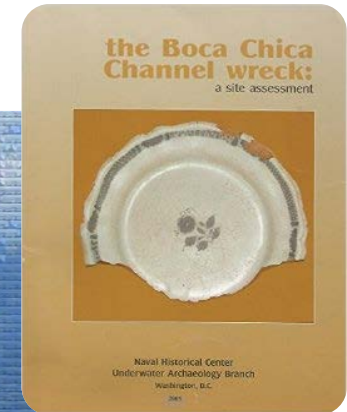
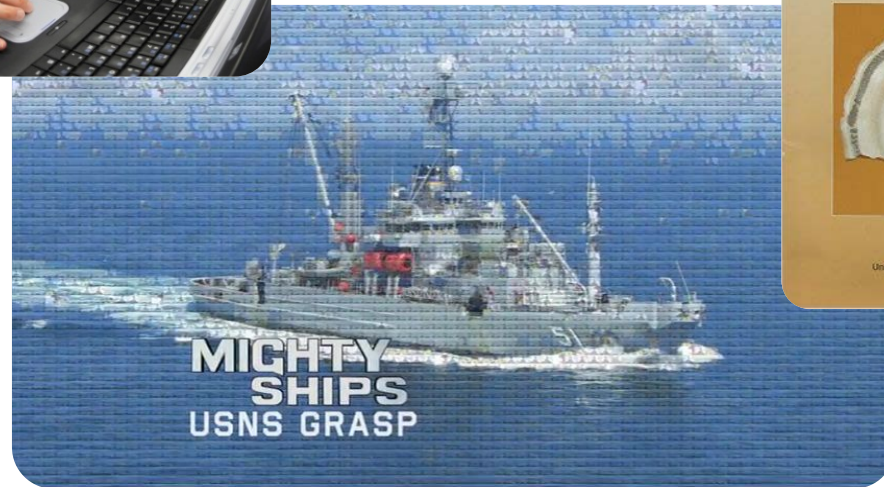
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# PUBLIC OUTREACH AND EDUCATION

- Enhances appreciation for U.S. Navy sunken and terrestrial military craft
- Serves to support site preservation
- Shares the story of the U.S. Navy with public, as well as present and future sailors





# ***NHHC UA 3D APPLICATIONS***

## **BRINGING NAVY'S HISTORY TO LIFE USING 3D TECHNOLOGY**

### ***ROYAL SAVAGE***

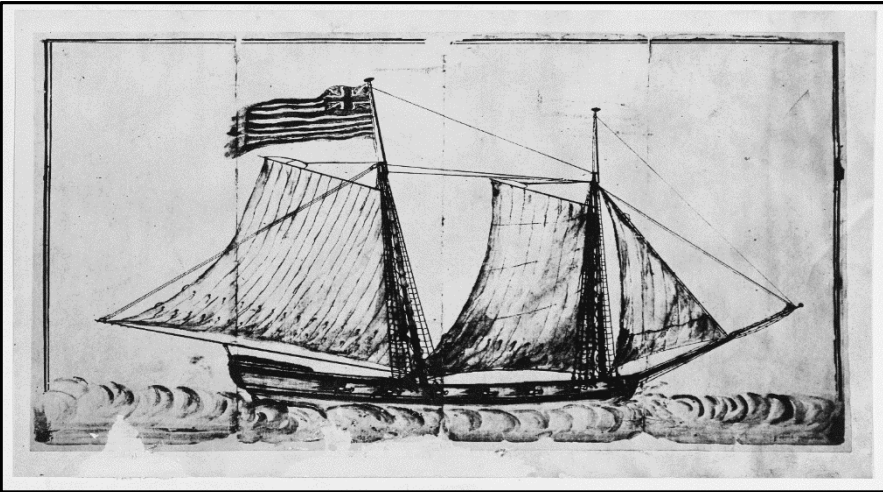


Image: Courtesy of Naval History & Heritage Command, ROYAL SAVAGE, NHHC NH 594

### ***USS TULIP***

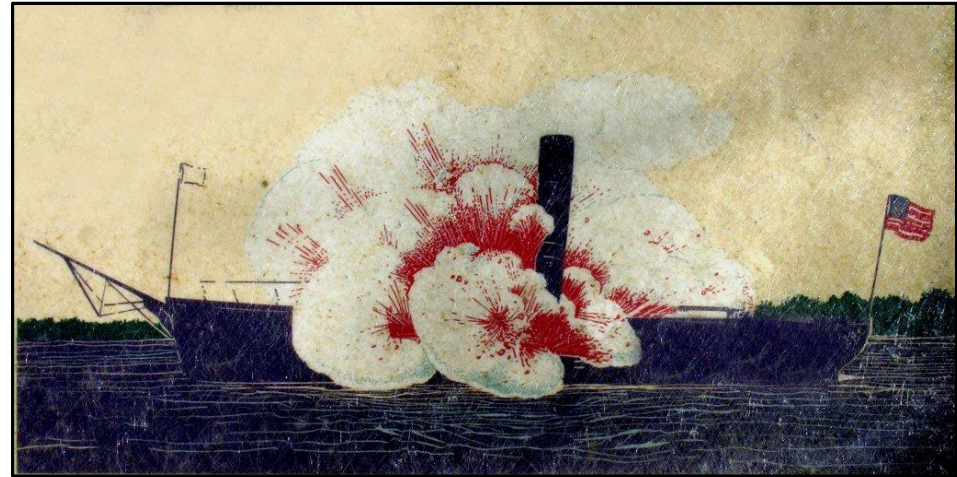


Image: "Disaster at Ragged Point" loss of USS *Tulip*  
Courtesy of the Historical Marker Database



# ROYAL SAVAGE

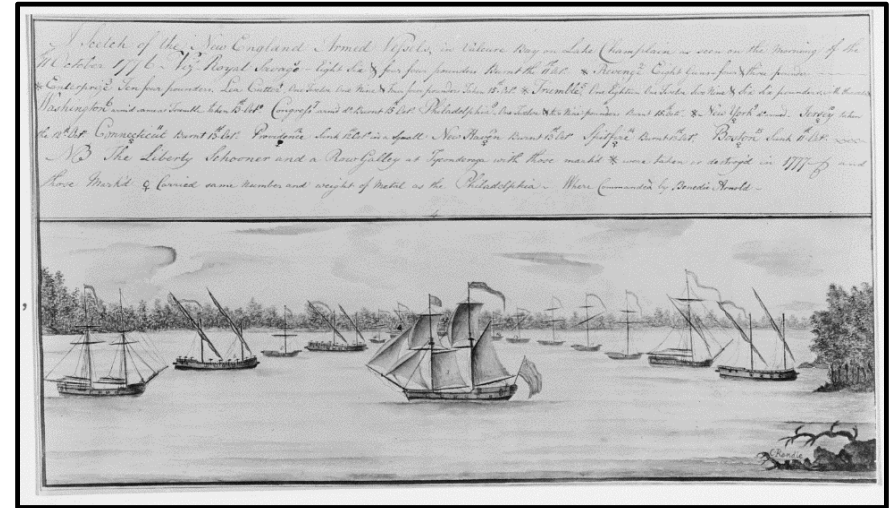
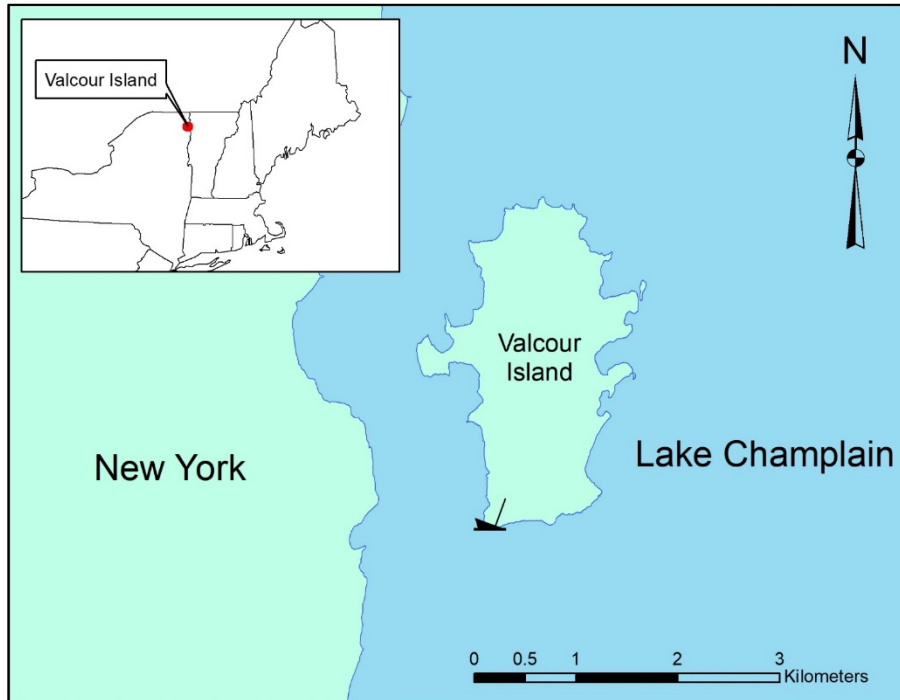


Image: Courtesy of Naval History & Heritage Command, Lake Champlain Fleet on 11 OCT 1776, NH 92864

- Lake Champlain Fleet came under the command of Gen. Benedict Arnold later in 1776
- Patrolling the northern lake, *Royal Savage* began the Battle of Valcour Island on 11 OCT 1776
- She ran aground during the battle and was later burned by the British





# ROYAL SAVAGE

- In 1934, Mr. Lorenzo Hagglund along with a team of local salvors recovered the *Royal Savage*
- Approx. 1400 artifacts and 76 structural timbers brought up
- Collection sold to city of Harrisburg, Pennsylvania in 1996
- July 2015, NHHC UA acquired collection from the city of Harrisburg





# ROYAL SAVAGE COLLECTION

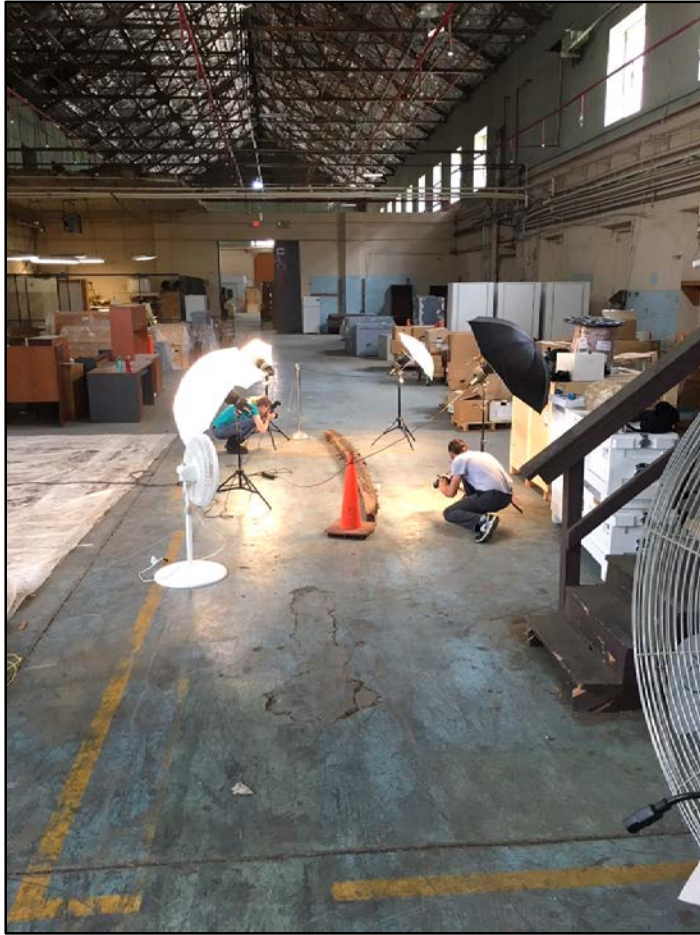
## STRUCTURAL TIMBERS



- 14 Frames
- 37 Hull Planks
- 1 KEEL
- 1 KEELSON (3 sections)
- 1 STERNPOST



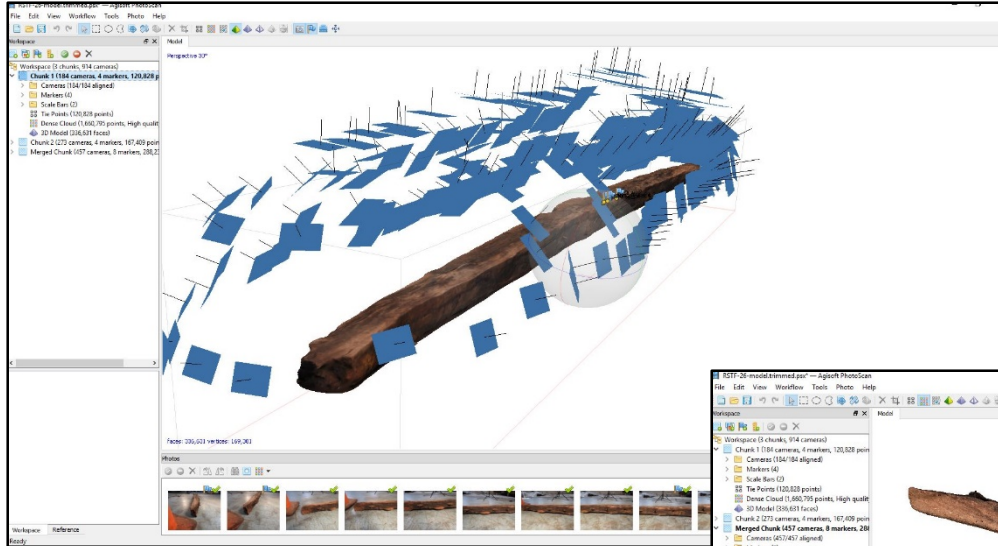
# ROYAL SAVAGE



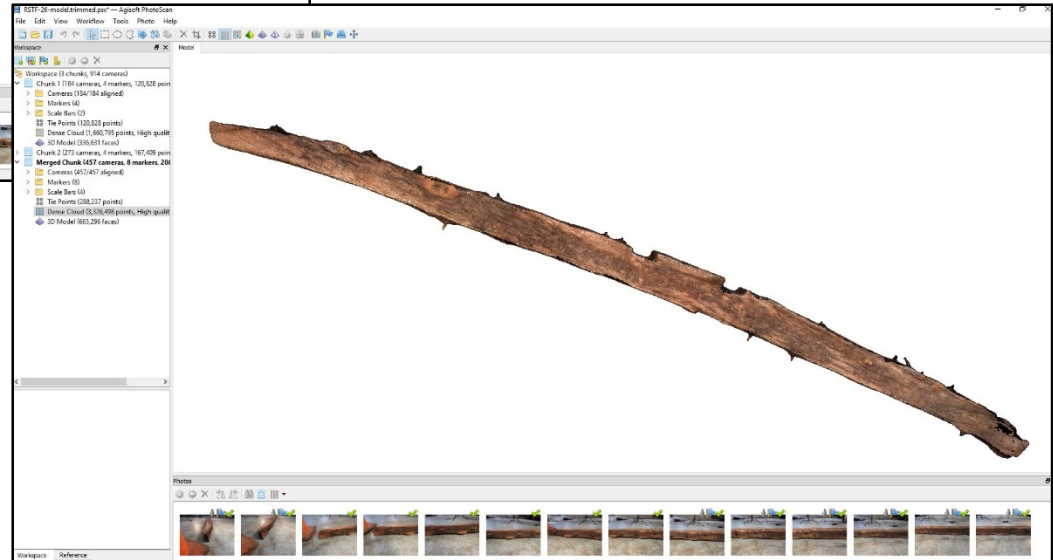
**PHOTOGRAMMETRY**



# ROYAL SAVAGE



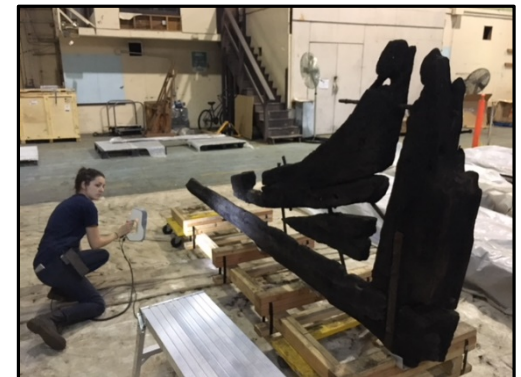
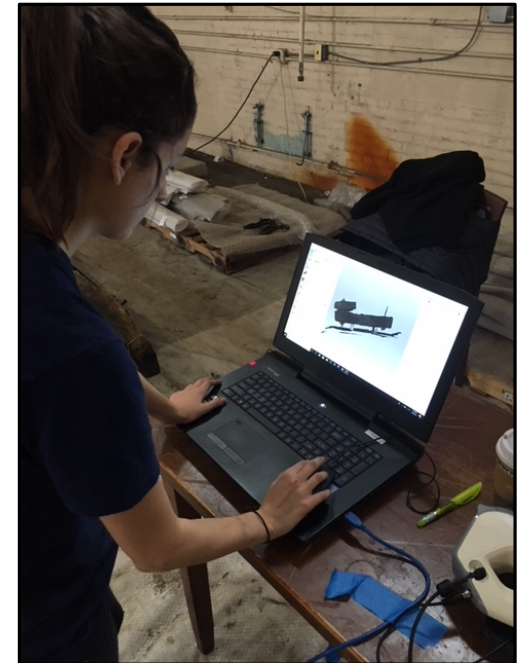
Agisoft Photoscan  
Software



PHOTOGRAMMETRY



# ROYAL SAVAGE



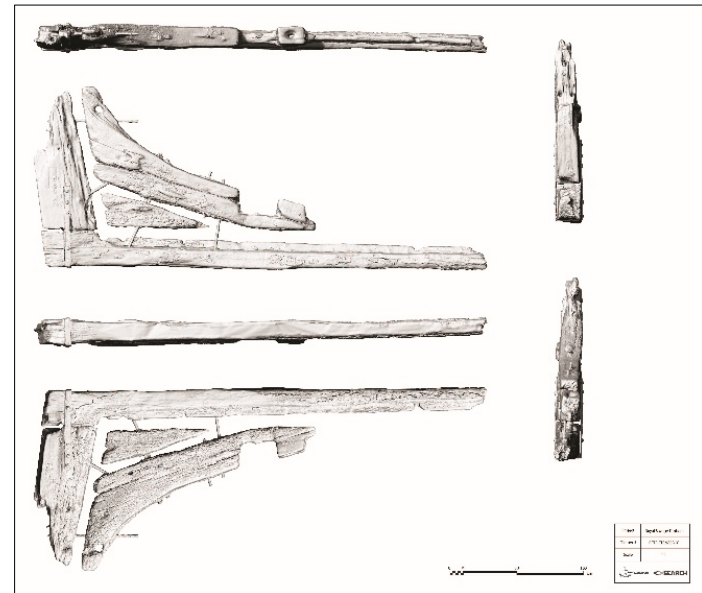
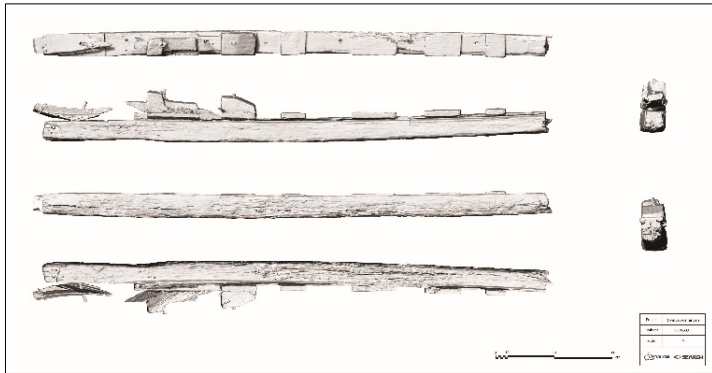
Artec Eva Scanner and Processing Software

**FULL 3D SCANNING**



# ROYAL SAVAGE

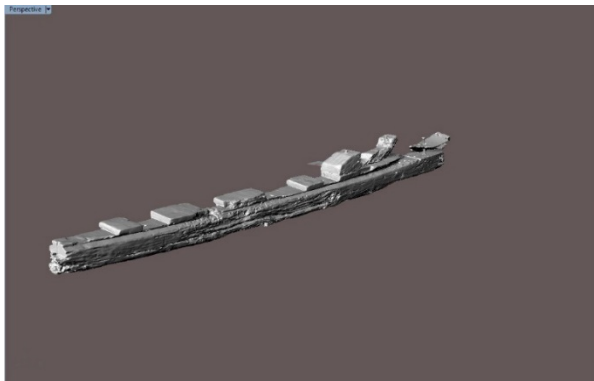
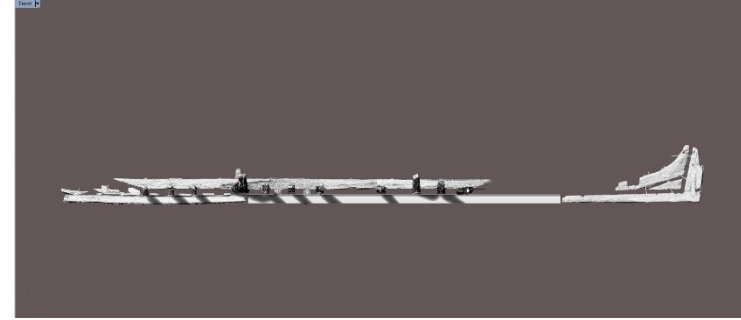
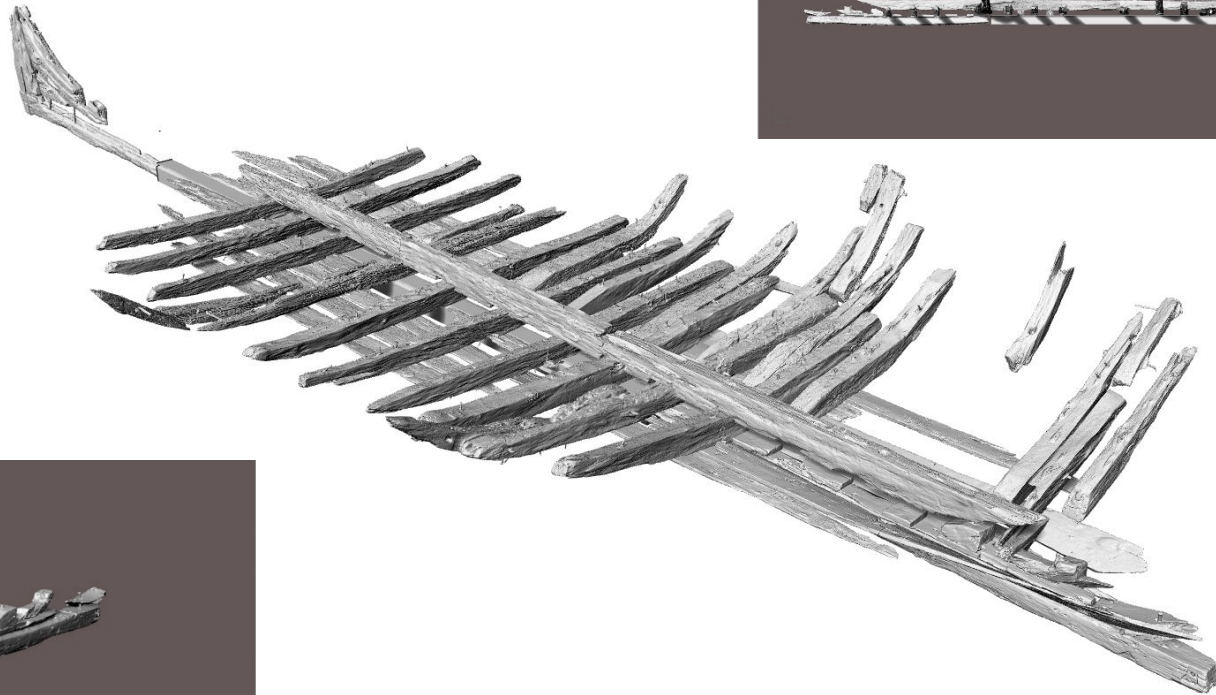
Artec 3D Scans  
into  
2D Scaled Drawings



**FULL 3D SCANNING**



# ROYAL SAVAGE

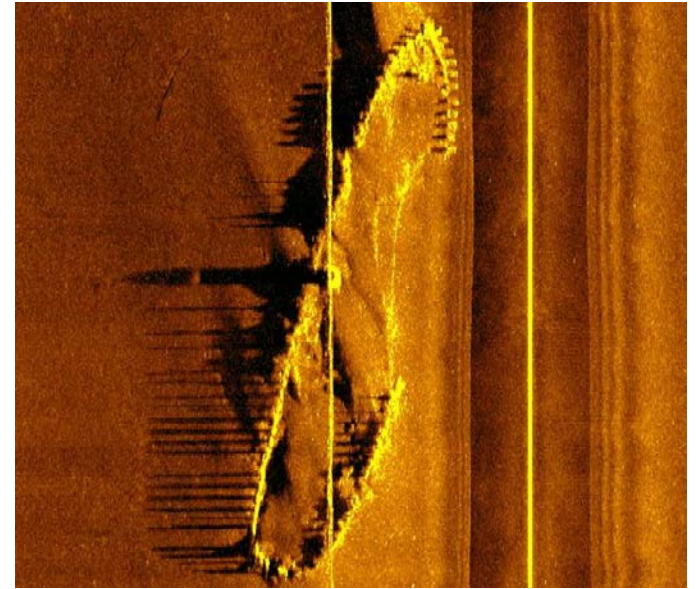


VITURAL REASSEMBLY - RHINO



# USS TULIP

- In 1863, She joined the Potomac River Flotilla whose mission was to protect Union waterways and transport Union troops during the Civil War
- In 1864, a defective boiler exploded and she sank off of Ragged Point, VA with a loss of 49 of the 57 sailors.
- In 1995, Maryland Maritime Archaeology Program (MMAP) discovered artifacts had been removed from the site. With their assistance, over 1,500 of Tulip's artifacts were returned to NHHC UA.







# USS TULIP



**Artec Eva  
allows us to  
scan artifacts and  
place finish scans in  
Sketchfab, which  
allows us to attach  
interactive 3D  
models into our  
NHHC ESRI ArcGIS  
Story Maps.**



**FULL 3D SCANNING – OIL CAN**



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## On the Horizon for NHHC UA 3D Capabilities

- Continue to partnership with NAVFAC and NPS in providing 3D Virtual Environment capabilities to NMCI computers allowing the NHHC website ([www.history.navy.mil](http://www.history.navy.mil)) to support UA's interactive 3D artifact collection, as well as other Navy collections within our command
- Begin to explore 3D modeling of Navy's wreck sites in-situ using photogrammetry and underwater scanning





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**THANK YOU FOR LISTENING**

*Lest we forget their sacrifice*

