



NAVAL HISTORY & HERITAGE COMMAND UNDERWATER ARCHAEOLOGY (UA) BRANCH

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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**

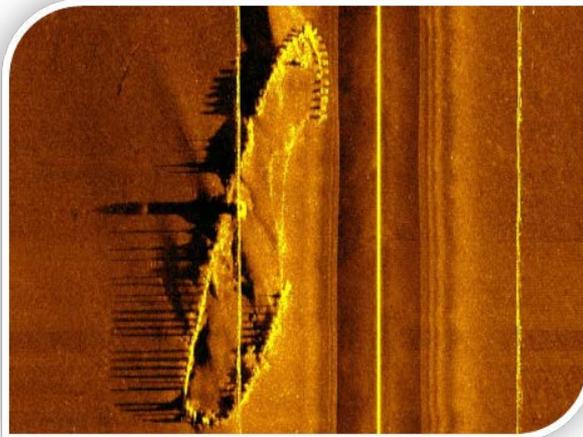




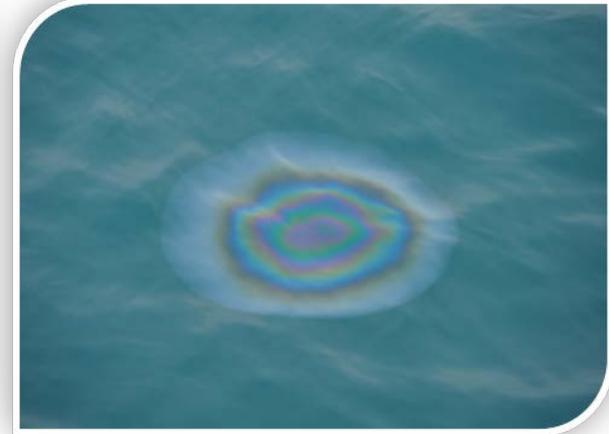
MANAGEMENT OF SUNKEN MILITARY CRAFT



HISTORICAL / CULTURAL VALUE



MARITIME GRAVES



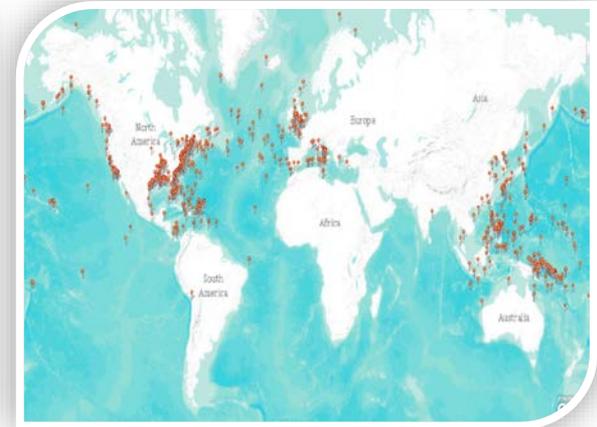
ENVIRONMENTAL CONCERNS



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:

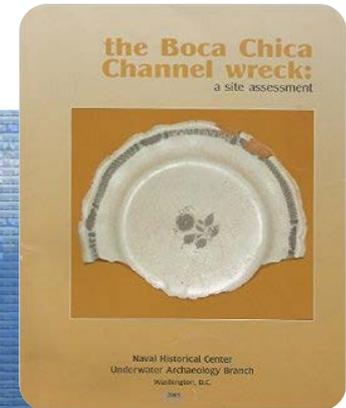
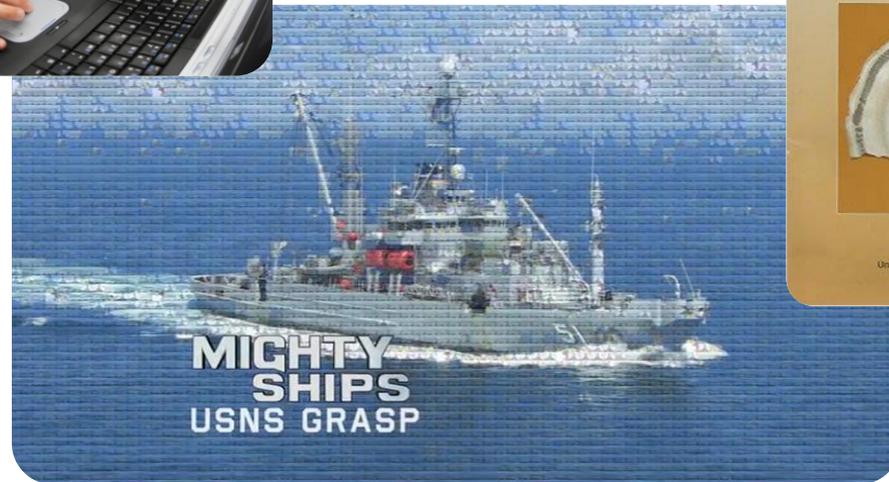
17





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

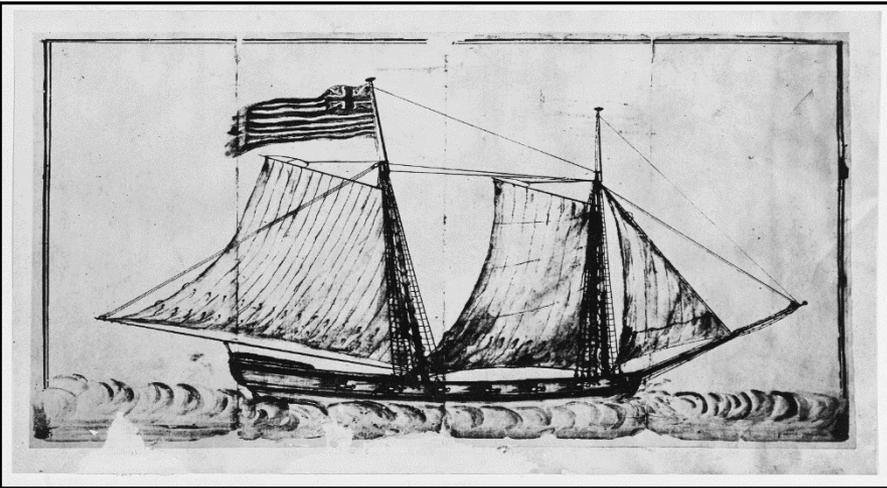


Image: Courtesy of Naval History & Heritage Command, ROYAL SAVAGE, NHHC NH 594

USS TULIP

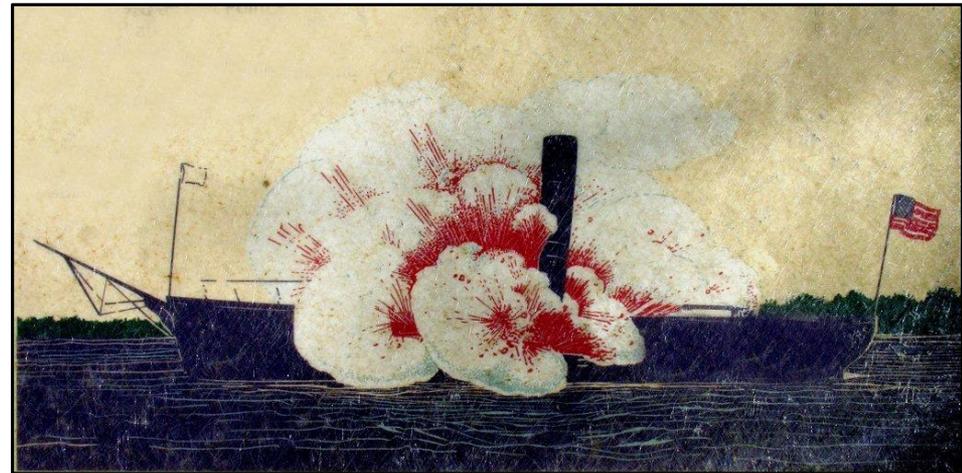


Image: "Disaster at Ragged Point" loss of USS *Tulip*
Courtesy of the Historical Marker Database



ROYAL SAVAGE

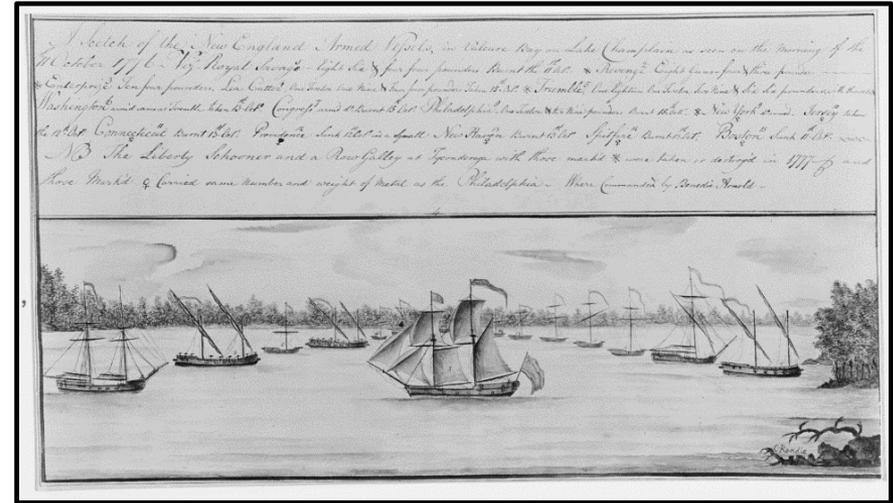
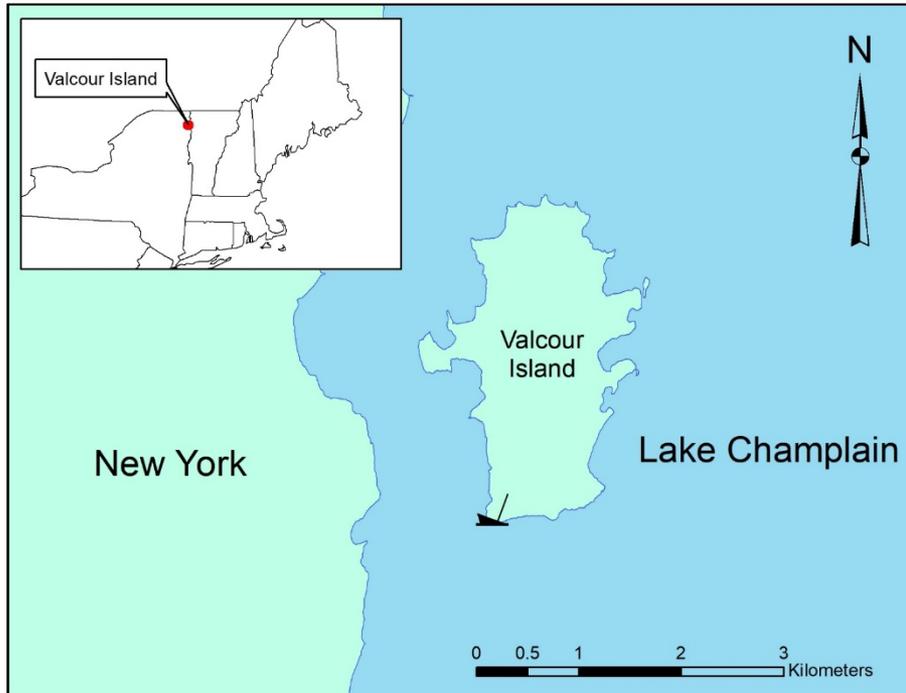


Image: Courtesy of Naval History & Heritage Command, Lake Champlain Fleet on 11 OCT 1776, NH 92864

- 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

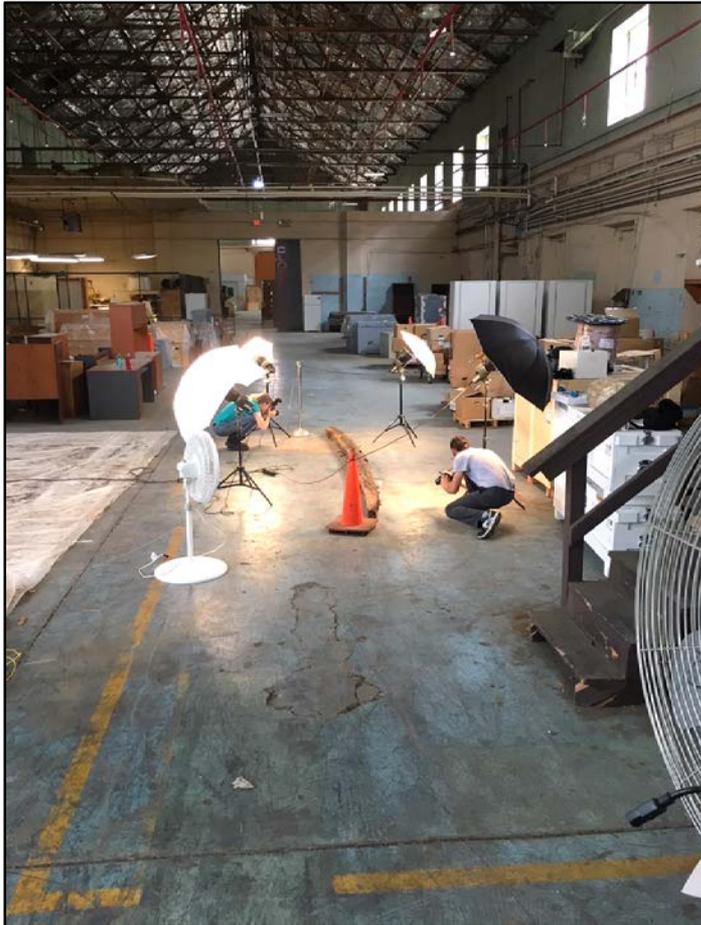
STRUCTURAL TIMBERS



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



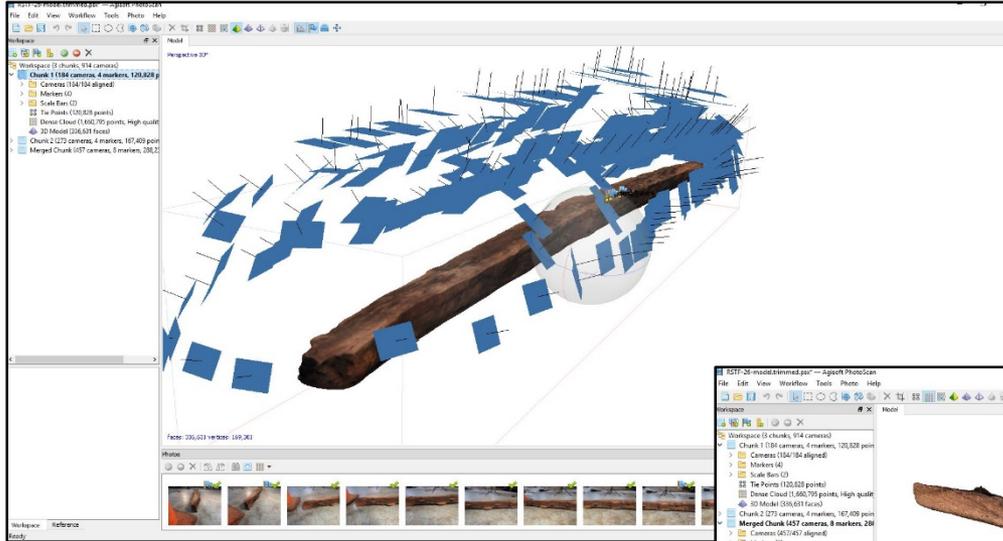
ROYAL SAVAGE



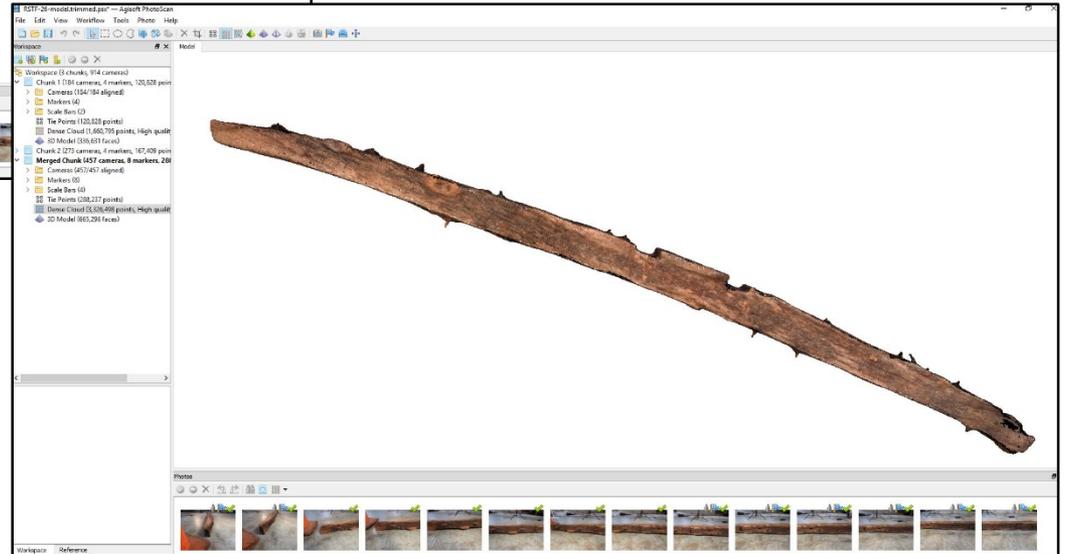
PHOTOGRAMMETRY



ROYAL SAVAGE



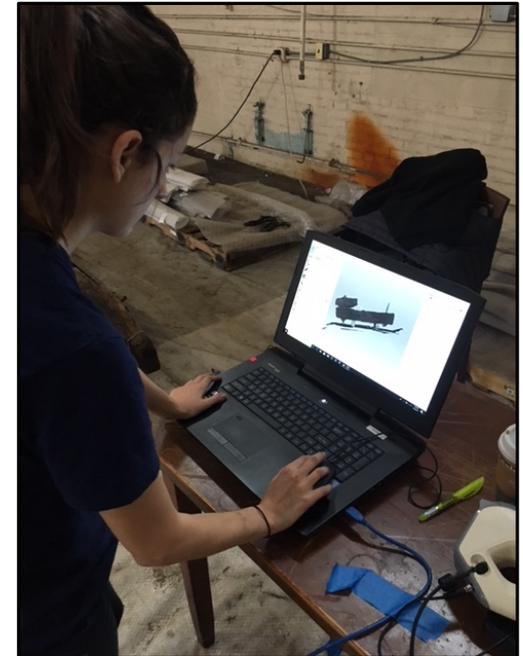
Agisoft Photoscan
Software



PHOTOGRAMMETRY



ROYAL SAVAGE



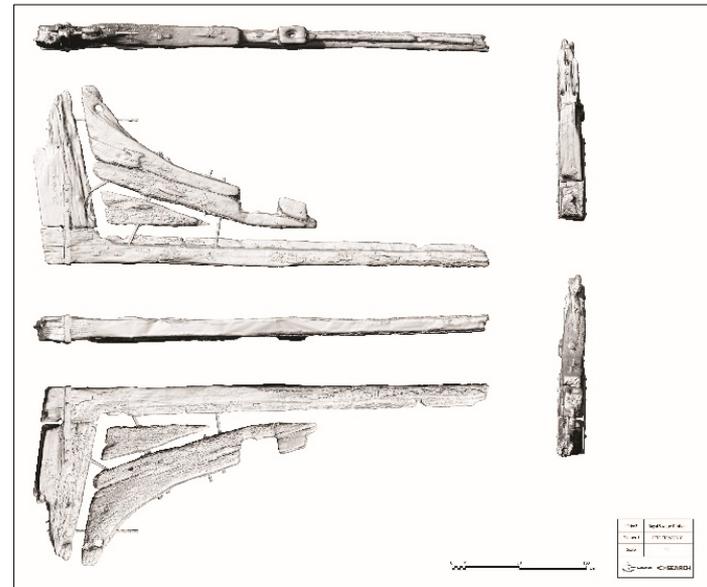
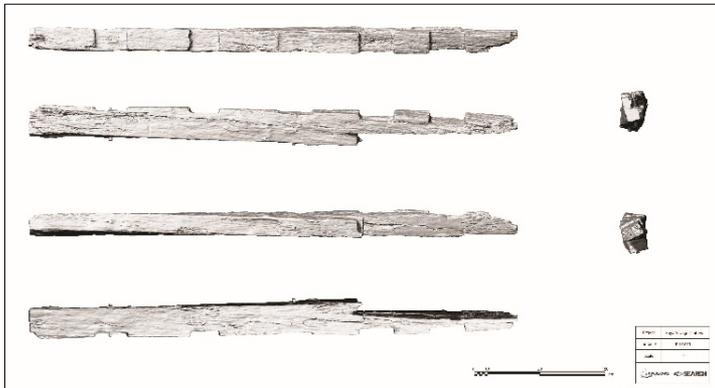
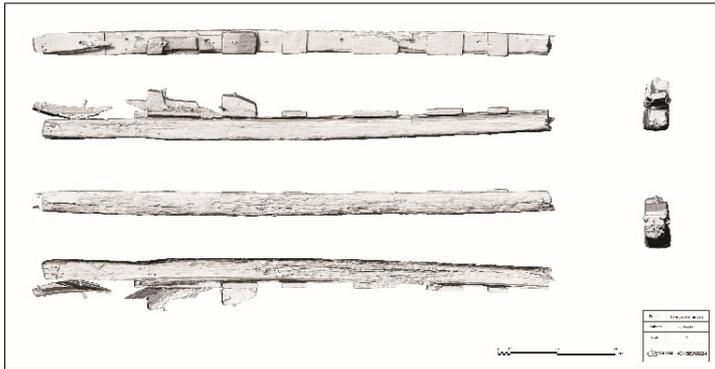
Artec Eva Scanner and Processing Software

FULL 3D SCANNING



ROYAL SAVAGE

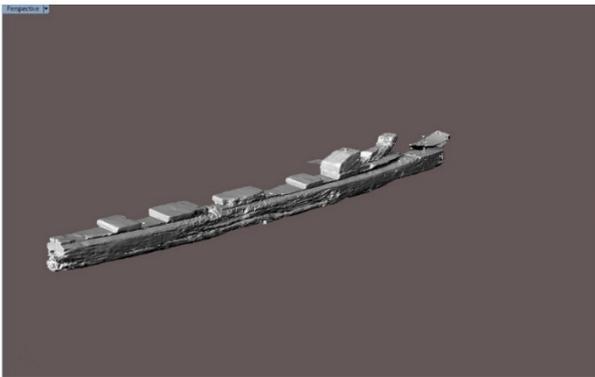
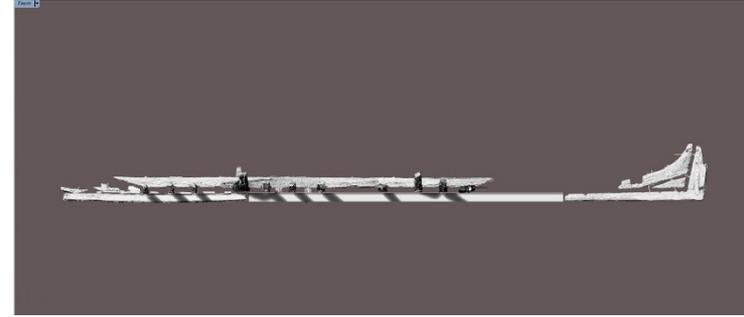
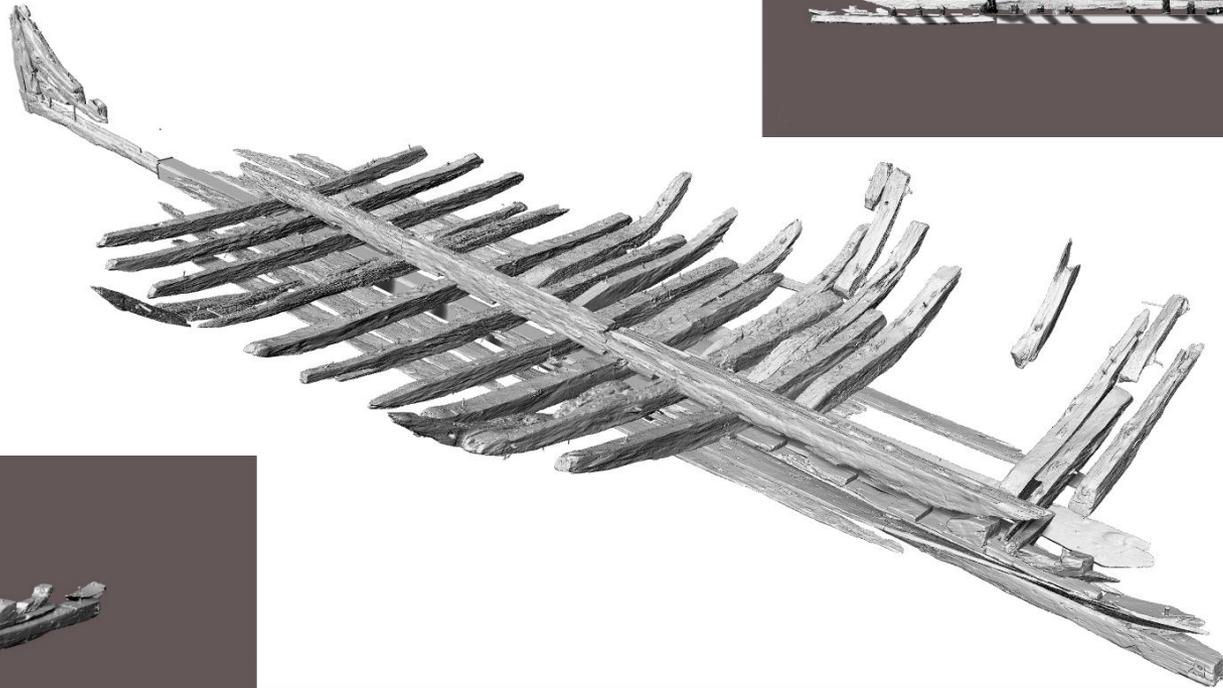
Artec 3D Scans
into
2D Scaled Drawings



FULL 3D SCANNING



ROYAL SAVAGE

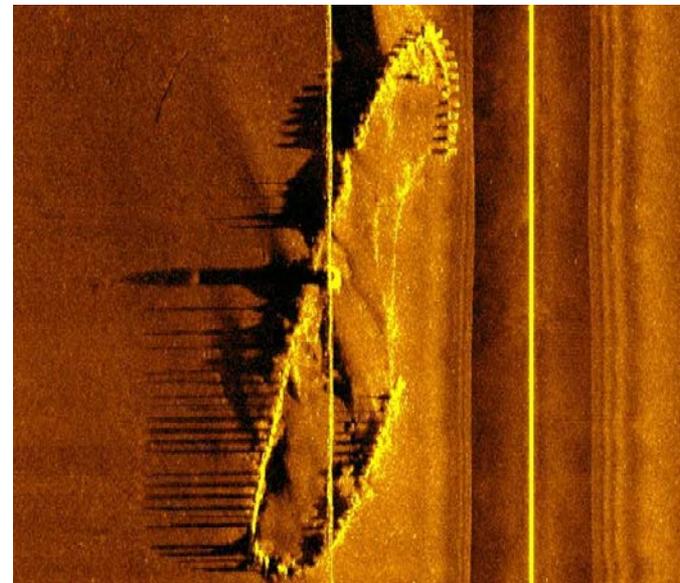


VIRTUAL REASSEMBLY - RHINO



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) 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

