

Research, protection, enhancement of Underwater Cultural Heritage: the commitment of University of Salento



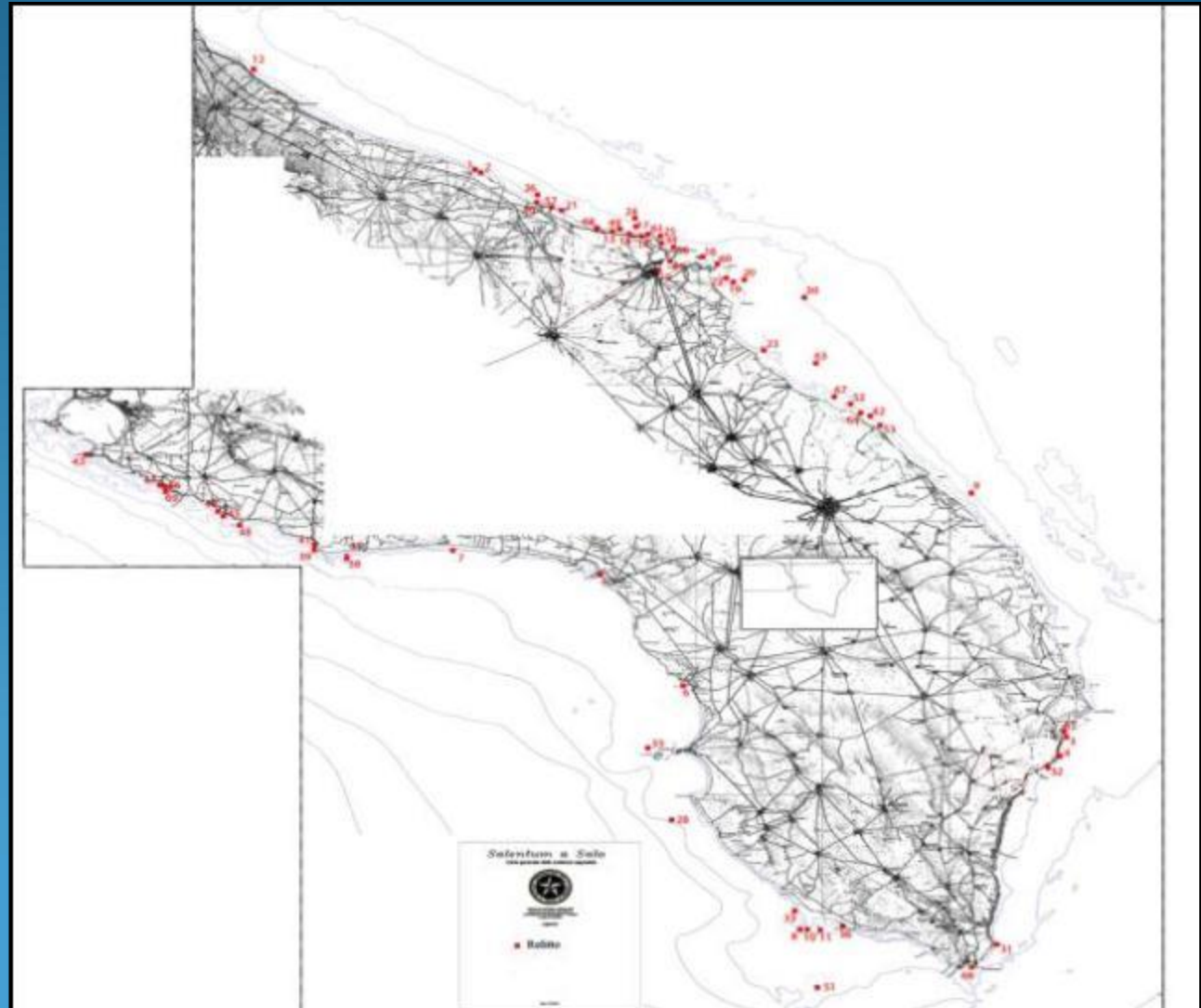
UCH Research: the premises

Half a century of uninterrupted underwater research, this is the primacy that the Salento boasts over other regions: thanks to this continuous and passionate commitment, which has resulted in national and international projects conducted by the **University of Salento**, large stretches of coast and facing seabed have been the subject of systematic research. The methodological approach chosen was the holistic, contextual, diachronic, multi and trans-disciplinary approach of the *global archeology of coastal and underwater landscapes* or, still better, *seascapes*.

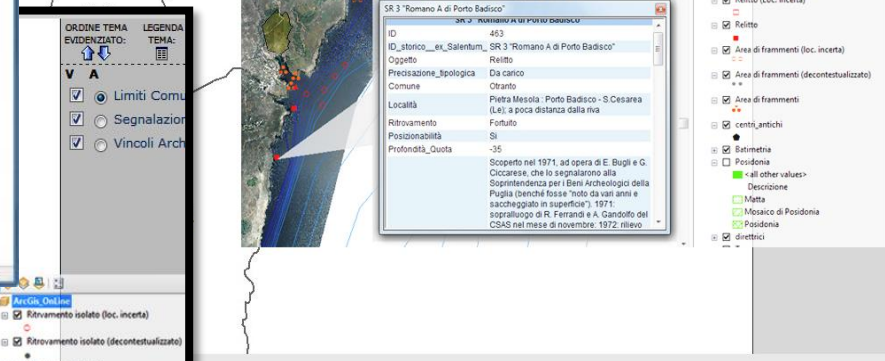
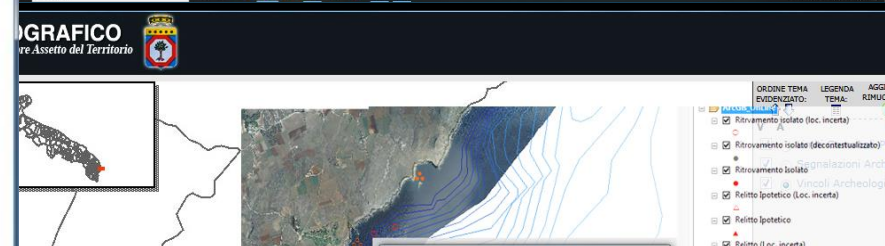
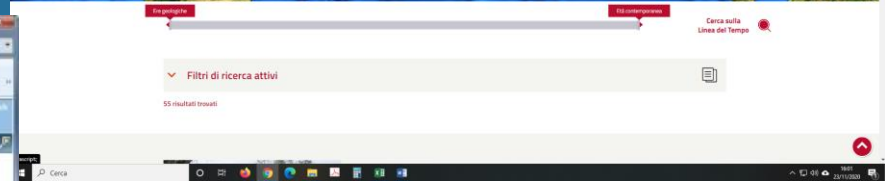
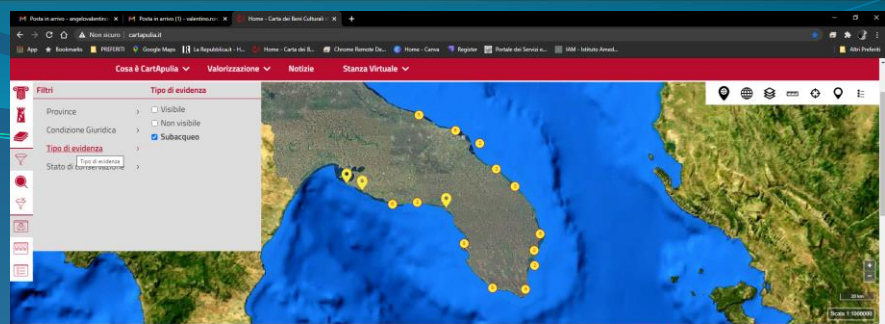


UCH Research: the cataloguing the Underwater Archaeological Map of Southern Puglia

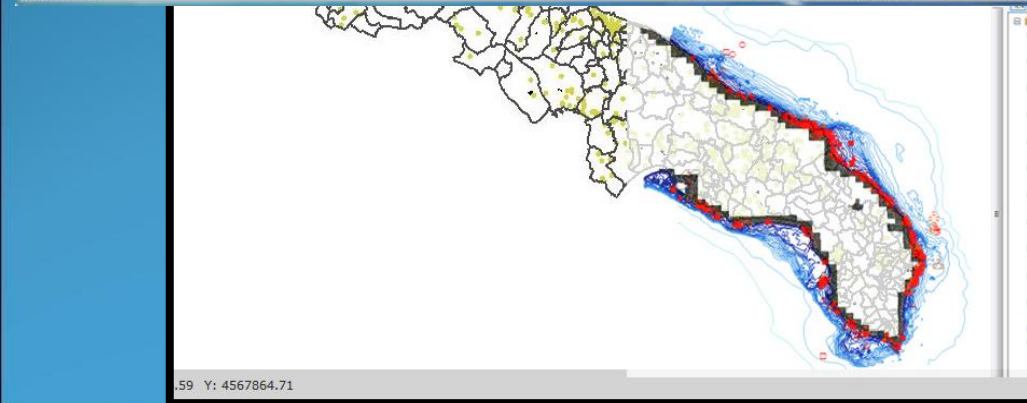
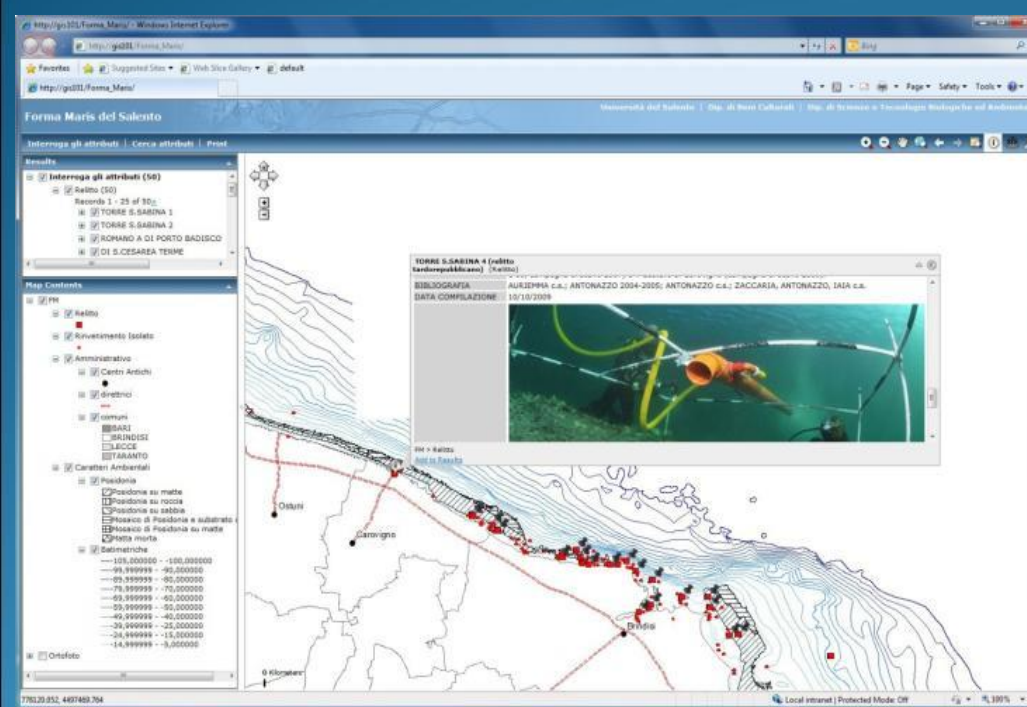
In southern Puglia, the research and teaching activities of the Underwater Archeology course of the University of Salento led to the census of ca. 650 underwater archaeological finds, including wrecks, hypothetical wrecks, areas of fragments, isolated finds, structures.



UCH Research: the cataloguing the Underwater Archaeological Map



Data integration of the
**Underwater Archaeological Map
of Southern Puglia in CartApulia
(Regional CH GIS)**



UCH Research: seascapes archaeology



UNIVERSITÀ
DEL SALENTO



Porto Cesareo (Lecce)

Focus Torre Chianca Isola della Malva



UCH Research:
seascapes archaeology

Porto Cesareo (Lecce)



Seascapes evolution:
the submerged
necropolis

Research: seascapes archaeology Otranto

The discovery of the Mediaeval port of Charles I of Angioui
1280 AD





UCH Research: seascapes archaeology Torre Guaceto MPA (Brindisi)



The presumed tower-lighthouse
(5th-6th cent. AD)



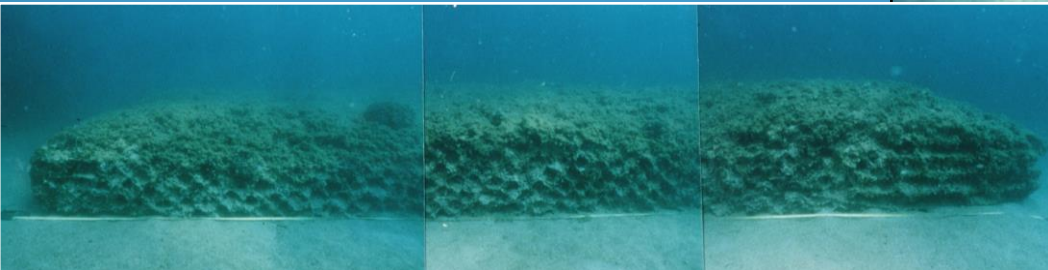
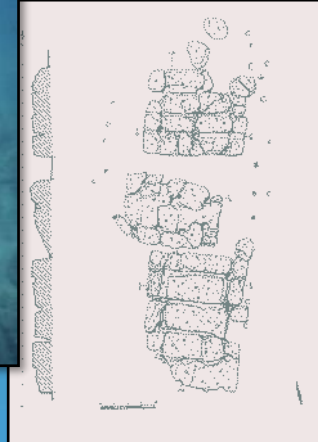
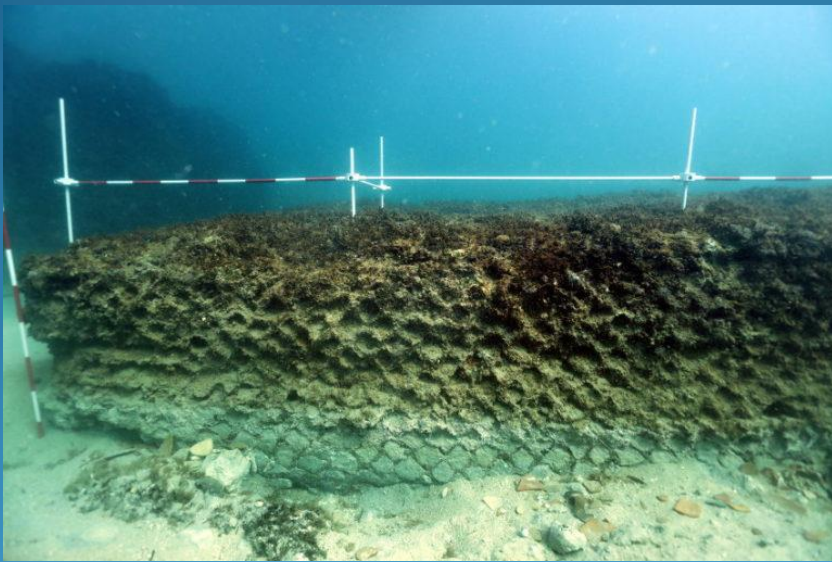
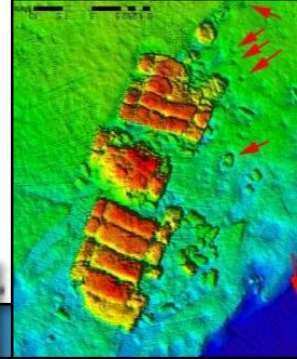
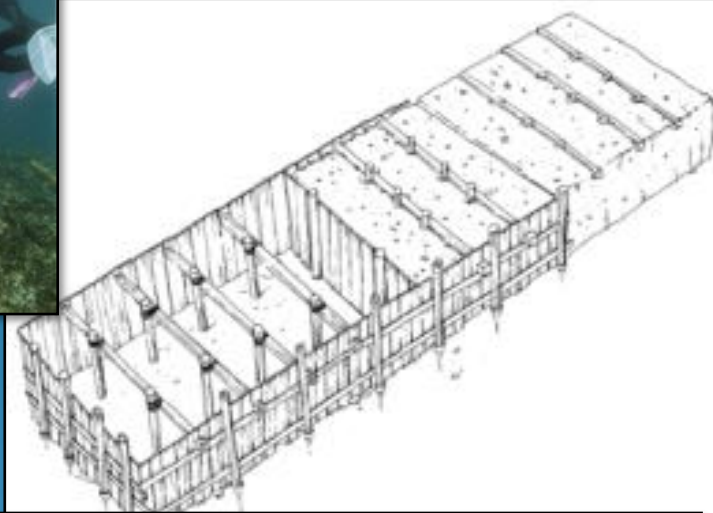
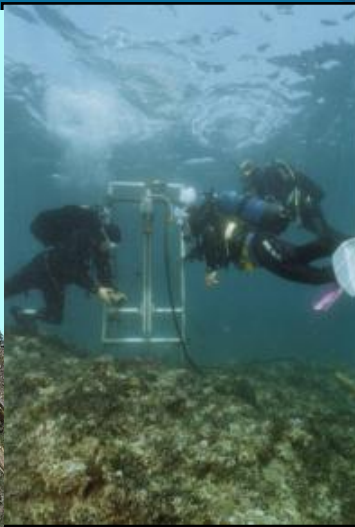
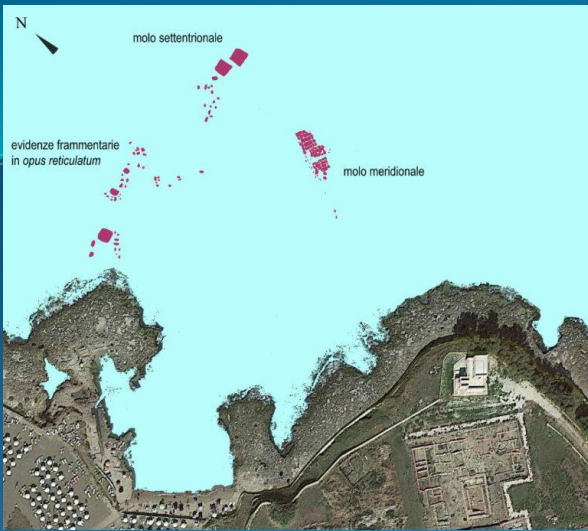
Relative sea level changes and coastal evolution



Remains of a late-Antique cargo
with millstones and ballast



UCH Research: seascapes archaeology Egnazia (Brindisi)



The port of Agrippa
in Roman concrete

UCH Research: seascapes archaeology

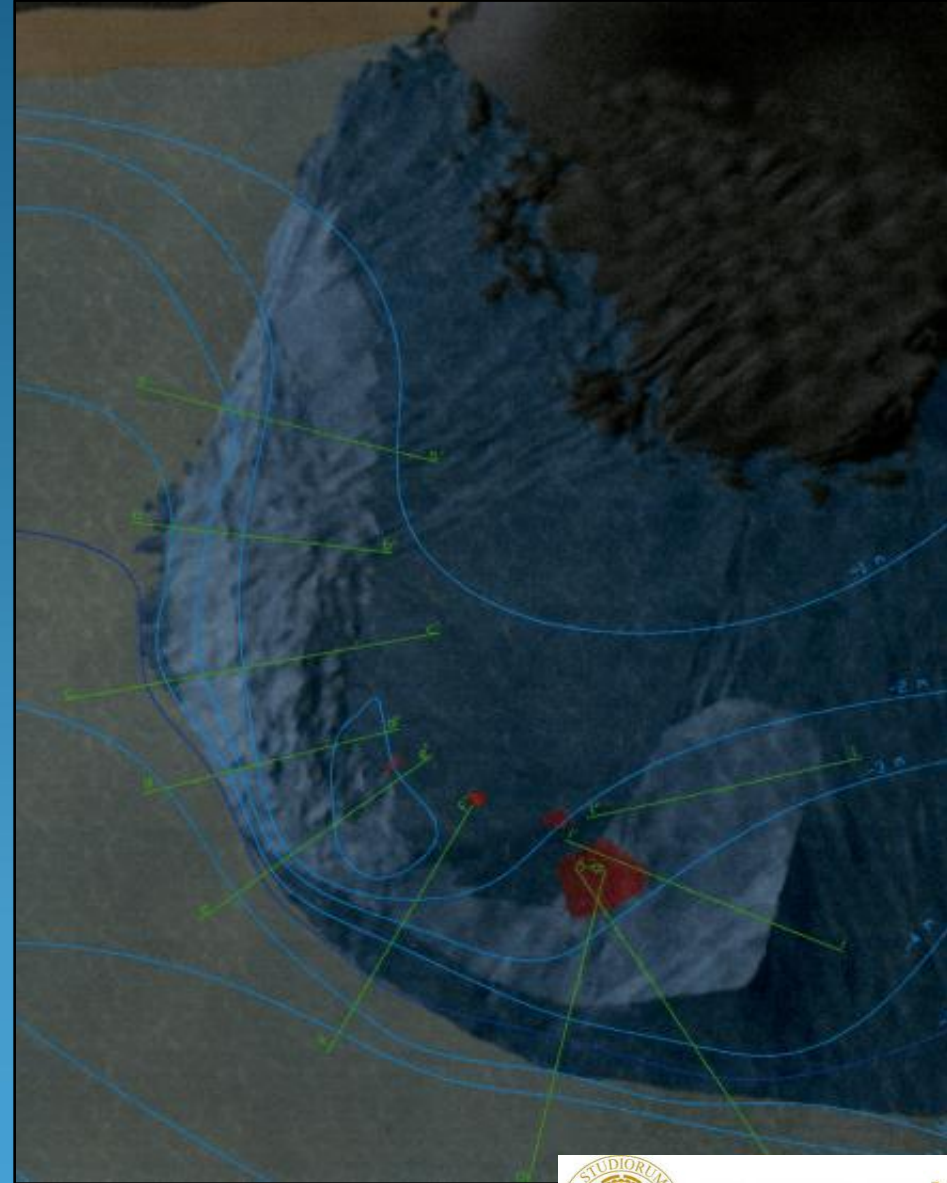
S. Cataldo (Lecce)



The Emperor
Hadrian pier
and the Mediaeval
reconstruction of
Maria d'Enghien,
Countess of Lecce
(1400)



UCH Research: seascapes archaeology. Saturo (Taranto)



Remains of a tiles cargo on the top of the breakwater

RUCh research: seascapes and naval archaeology

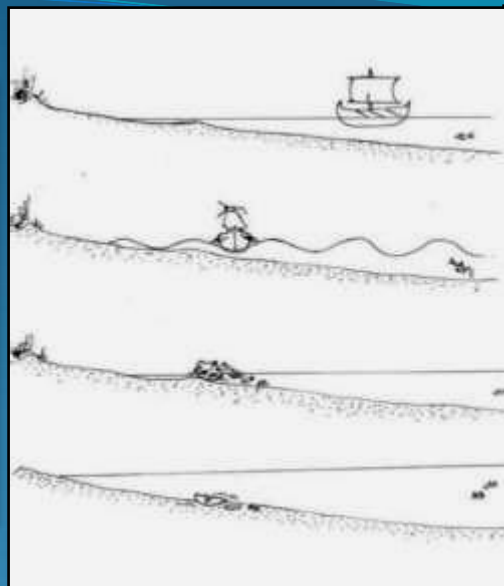


UNIVERSITÀ
DEL SALENTO

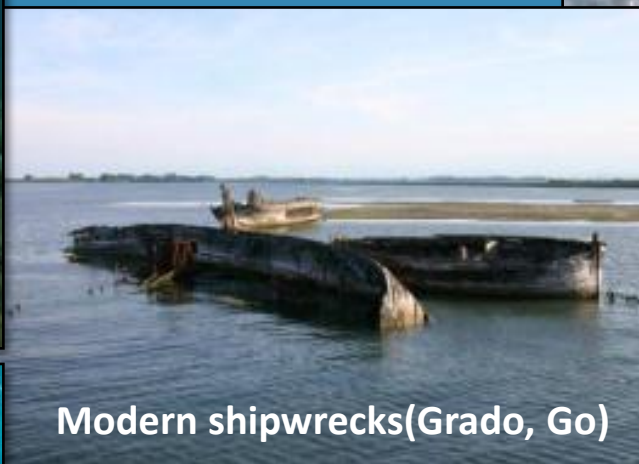
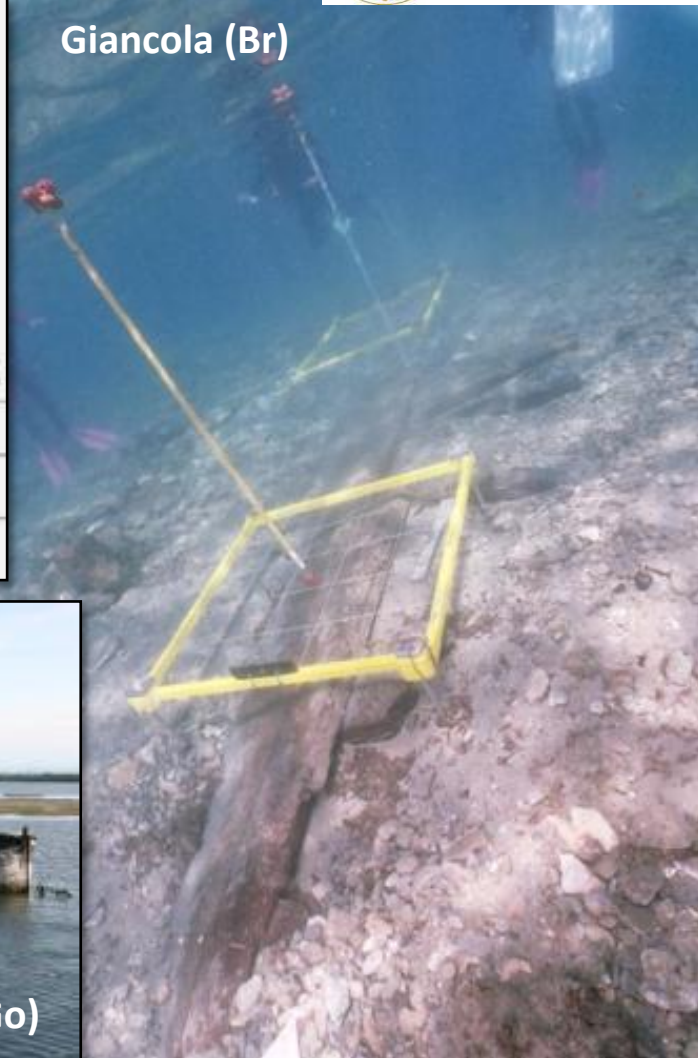
The beached wrecks



Torre Chianca (Le)



Giancola (Br)



Modern shipwrecks(Grado, Go)

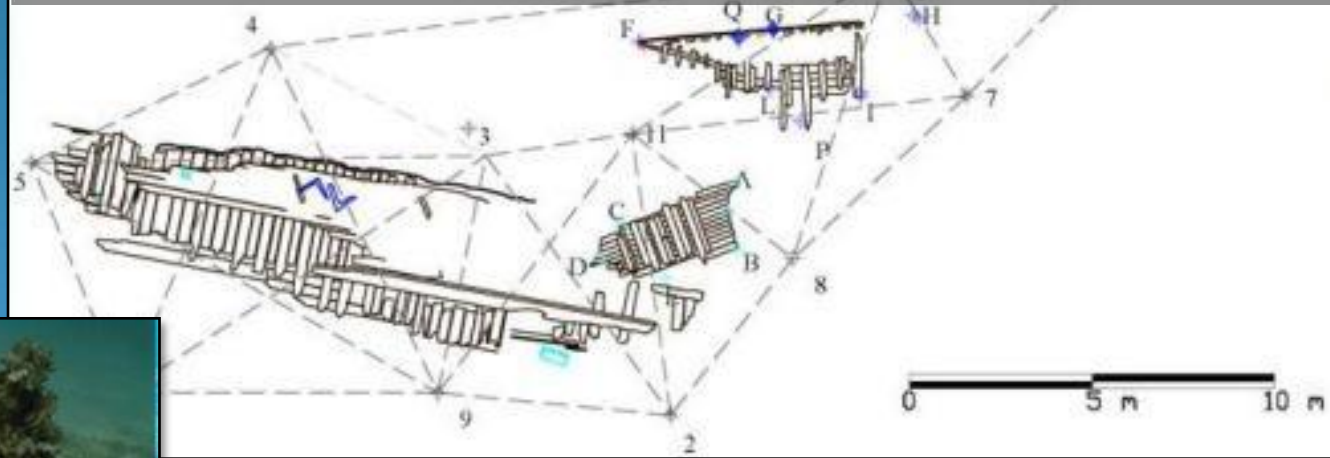
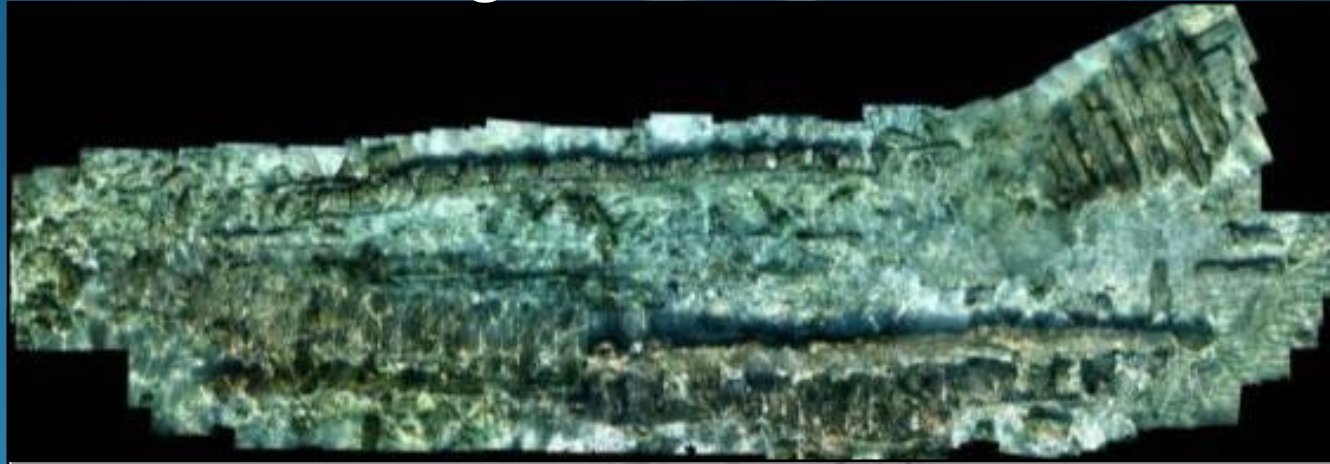


Porto cesareo (Le)

UCH Research: seascapes and naval archaeology



The beached wrecks of Modern age



Torre Rinalda shipwreck. 18th–19th century



Barrels with gunpowder



Company Internal



UCH Research: seascapes and naval archaeology. The beached wrecks of Modern age



Cesine shipwreck.
18th–19th century

UCH Research and training: the educational worksites



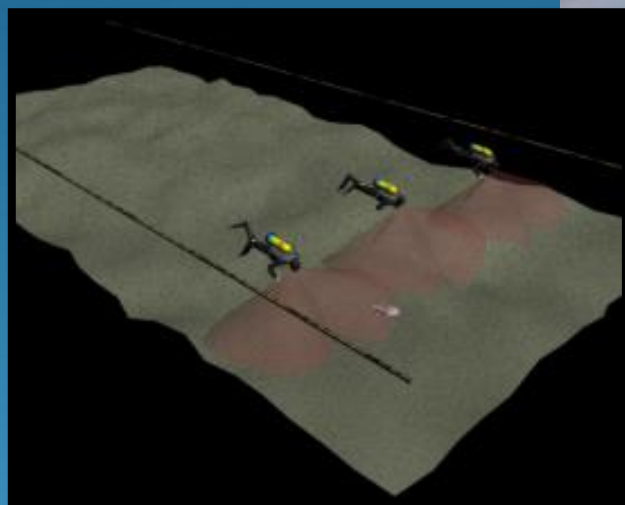
Porto Cesareo
Bacino Grande Byzantine shipwreck





UCH Research and protection: preventive archaeology

- Brindisi Port Area survey
- Harbor master plan modifications
- Punta "Le Terrare";
- Capo Bianco;
- Isole Pedagne.



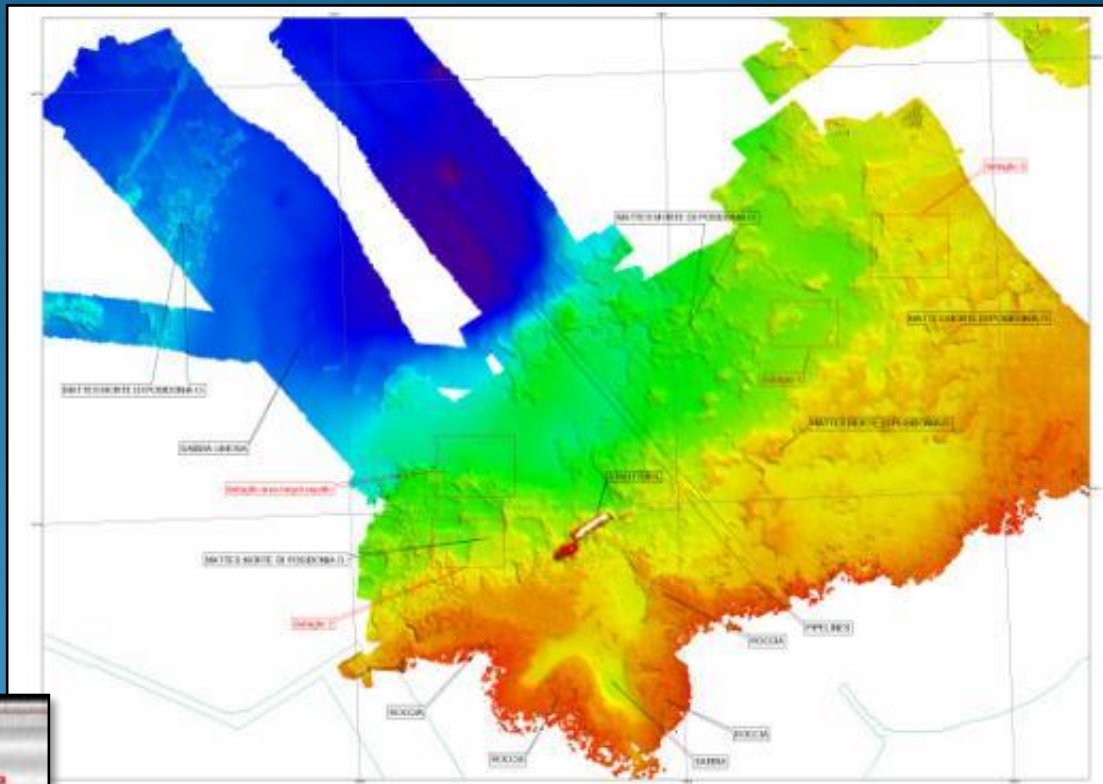
Torre Cavallo shipwreck



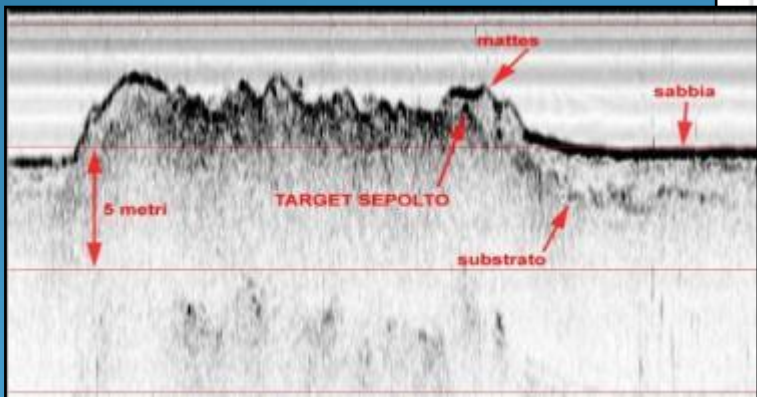
Pedagne Islands shipwreck



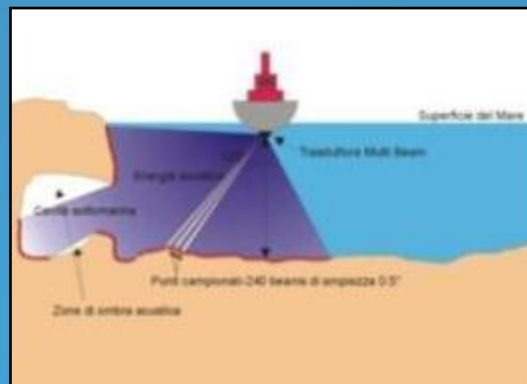
Remote survey



Multibeam echosounder

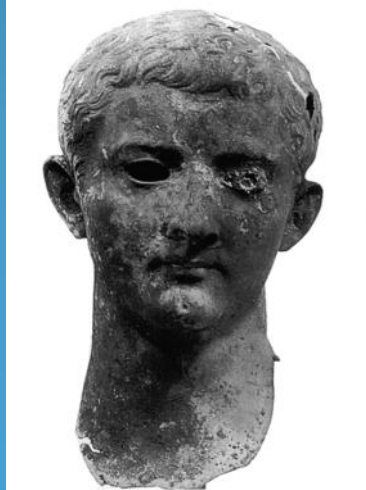


Sub-Bottom Profiler





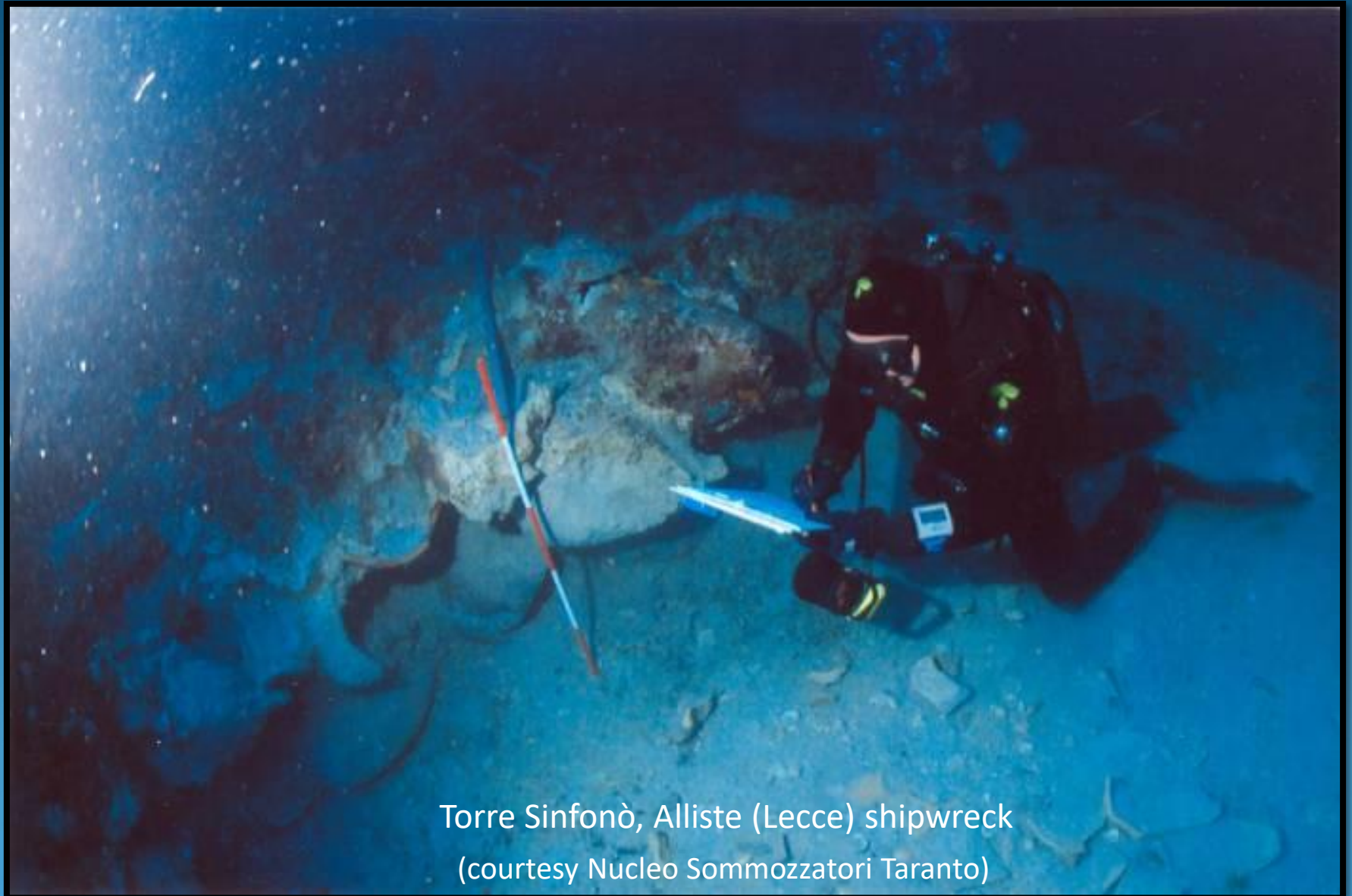
Punta del Serrone
bronze cargo



*UCH Research and support to the Ministry of Culture
for the prevention and repression of the clandestine excavation*



UNIVERSITÀ
DEL SALENTO



Torre Sinfonò, Alliste (Lecce) shipwreck
(courtesy Nucleo Sommozzatori Taranto)

UCH Enhancement: Museums & Exhibitions

Ribezzo Archaeological Museum, Brindisi



UCH Enhancement: Museums & Exhibitions

Torre Guaceto exhibition, Brindisi



LE TORRELLI DI GUACETO
 Le Torrelli sono state costruite in prossimità di case di edifici abitati di Torre Guaceto. La produzione principale Agriportus era di ceramica e di vetro. Le Torrelli erano usate per la raccolta e la conservazione di olio. Queste torri erano usate anche per la raccolta e la conservazione di prodotti agricoli e di prodotti artigianali.



Il faro romano
 Sul territorio di Torre Guaceto, nel II secolo d.C. fu costruita una grande torre quadrata, detta "Torre Guaceto". La sua funzione era di segnalare la presenza di piccole imbarcazioni che facevano la spola tra Torre Guaceto ed il grande porto di Brindisi.

The Roman lookout tower
 The square tower near the ruins of an ancient "quadrigular" building, on the north side of the Torre Guaceto, it is supposed that this was a lookout tower that marked the entrance to the bay.



Il caricatore di Guaceto
 Tra il secondo ed il primo secolo a.C. un piccolo insediamento lungo la costa permetteva l'attracco. Il carico e lo scarico di piccole imbarcazioni, che facevano la spola tra Torre Guaceto ed il grande porto di Brindisi.

Guaceto's loading dock
 Between the 2nd and 1st century BC there was a small settlement along the coast that allowed small boats from Torre Guaceto to Brindisi to dock, load and unload.

Il "caricatore" di Guaceto

Tra il secondo ed il primo secolo a.C. un piccolo insediamento lungo la costa permetteva l'attracco. Il carico e lo scarico di piccole imbarcazioni, che facevano la spola tra Torre Guaceto ed il grande porto di Brindisi.

Between the 2nd and 1st century BC there was a small settlement along the coast that allowed small boats from Torre Guaceto to Brindisi to dock, load and unload.

Per caricare e scaricare la merce veniva usata la "torre", una sorta di piccola gru con un verricello al vertice dei pali.



La merce veniva portata allo scaricatore con piccole chiatte trainate da buoi lungo i canali che scendevano verso il mare.

A small wooden crane "torre" with a pulley at the top was used to load and unload goods.



UCH Enhancement: Museums & Exhibitions

Museum of the Ancient Sea Nardò (Lecce)



Aquarium-Museum of S. Maria al Bagno, Nardò (Lecce)



UCH Enhancement: the exhibition projects

Territorial animation, permanent/temporary exhibitions and digital valorisation: a network of projects to give space to a living story of the sea in all its aspects.

...The Atlantic and the Pacific are the seas of distance, the Mediterranean the sea of propinquity, the Adriatic the sea of intimacy...

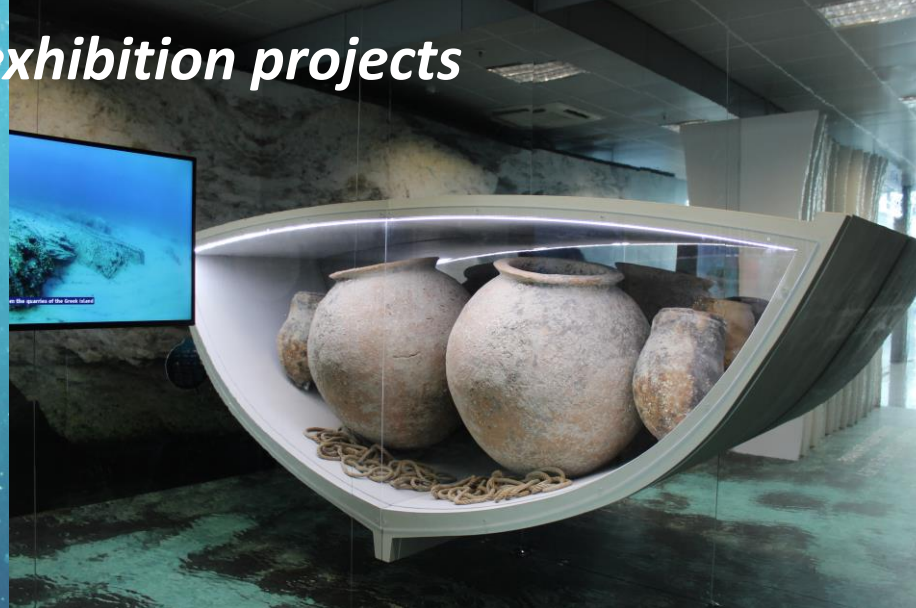


Into the sea of intimacy. Underwater archaeology tells of the Adriatic
Trieste 2017 - 2018

UCH Enhancement: the exhibition projects

NEL MARE DELL'I NTIMI TÁ

L'ARCHEOLOGIA
SUBACQUEA
RACCONTA IL
SALENTO



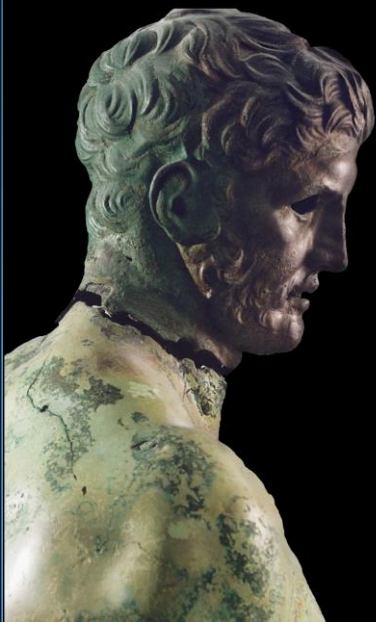
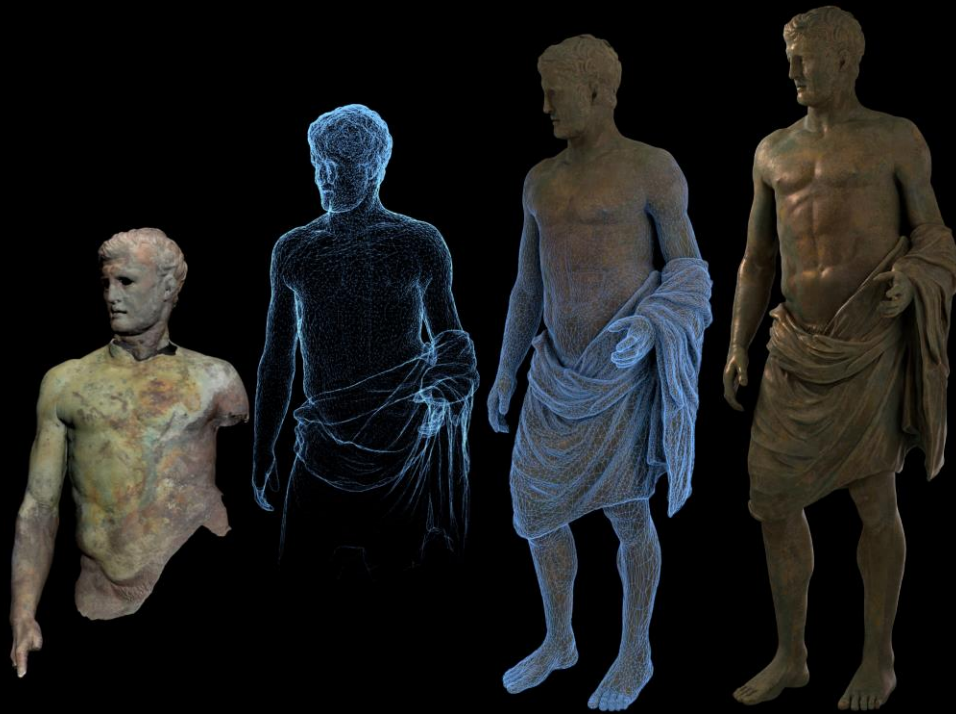
AEROPORTO
DEL SALENTO



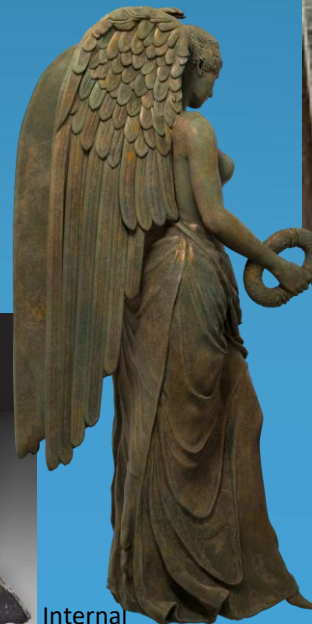
*Into the sea of intimacy.
Underwater archeology tells of Salento*
Brindisi Airport, 5 July 2019 to 10 January 2021

PUGLI

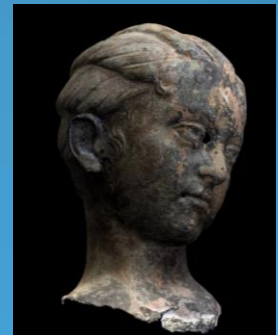
Into the sea of intimacy.
Underwater archeology tells of Salento
Storytelling, 3D modelling, videoanimation



Ma un diver
foggiava il Fa
oltre Brundisi
inghiottiti dal m
sprofondati
attendem
per due
o que



Internal



***UCH Research & Enhancement:
the transnational projects focused on accessibility***

UNDERWATERMUSE Project (Italy-Croatia Interreg Programme)

3 pilot actions and the heritage “chain”



Torre S. Sabina (Br)

research campaigns 2020-2021 – underwater trails design and VR/AR



Resnik/Siculi

research campaigns 2020-2021 – 3D map and VR/AR



Grado 2

research campaigns 2021 – in situ musealization and VR/AR



UCH Research & Enhancement: the transnational projects focused on accessibility

UNDERWATERMUSE Project (Italy-Croatia Interreg Programme)



EN

- Underwater Structures (27)
- Wrecks (48)
- Other Points (3)
- Museums (22)

MONACO

HRVATSKA

SAN MARINO

ITALIA

BOSNA I HERCEGOVINA

SRBIJA

CRNA GORA

KOSOVO-KOSOVO

SEVERNA MAKEDONIJA

SHQIPËRIA

ROMÂNIA

BULGARIA

WebGIS UnderwaterMuseMap

Interreg Italy - Croatia UnderwaterMuse

mapbox



strapi

Search for an asset...

Media Library

Antonella Antonazzo

Media Library

15 assets

Sort by

Filtri

Fig.1-Sabina foto aerea.jpg	Fig.8-TorreSantaSabina3-4...	Fig.6-TorreSantaSabina3-...	Fig.2-Torre S.Sabina_S2 A b...	Fig.3-TorreSantaSabina3_D...
JPG - 1024x742 - 230KB	JPG - 4318x2421 - 1MB	JPG - 3333x2366 - 850KB	JPG - 4296x2270 - 381KB	JPG - 2592x3872 - 1MB
Fig.5-TorreSantaSabina3-T...	Fig.4-TorreSantaSabina3-T...	Fig.5-_D5C0018.JPG	Fig.9-_D5C0012.JPG	Fig.8-TorreSantaSabina1_D...
JPG - 817x532 - 87KB	JPG - 4288x2848 - 2MB	JPG - 3872x2592 - 1MB	JPG - 3872x2592 - 776KB	JPG - 2592x3872 - 960KB

10 elementi per pagina

1

UCH Research & Enhancement: UNDERWATERMUSE Project (Italy-Croatia Interreg Programme)

1. Torre S. Sabina pilot action

Case study: pluristratified and complex site



*Bring people to
heritage, through the
creation of underwater
parks/blue trails*

EMILIANO PELUSO
PHOTOGRAPHY

1. Torre S. Sabina pilot action

Case study: pluristratified and complex site



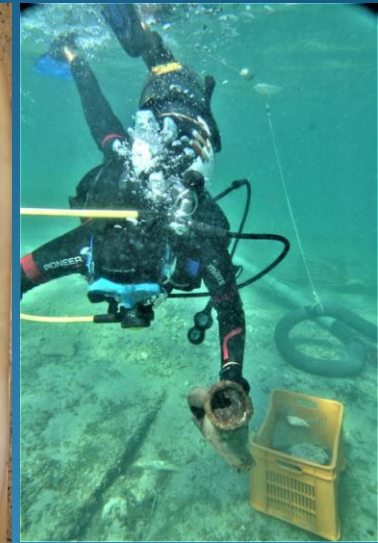
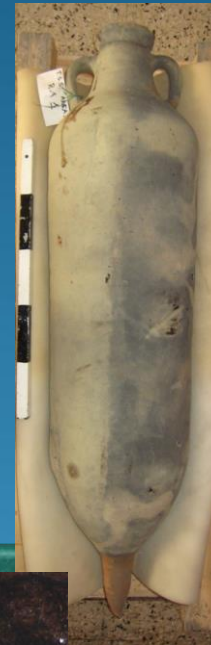
In Puglia, the choice of Torre S. Sabina (Carovigno, Brindisi) as the setting for a pilot intervention within the *UnderwaterMuse* Project stems from the quality and variety of the archaeological sites in the bay. The exceptional potential of this millenary landing place is an ideal scenario for a holistic approach to research, that is, that of the global archeology of landscapes, in this case coastal and maritime, or *seascapes*. It is a "super-site", with stratifications of events that are also significant indicators of the evolution of the coastal landscape: cargos and hulls, but also remains of quarries and settlements.

UNDERWATERMUSE Pilot project 2021: TSS 1 shipwreck complete excavation



Orthophoto of the wreck in the second excavation phase

UNDERWATERMUSE Pilot project 2021: TSS 1 shipwreck complete excavation

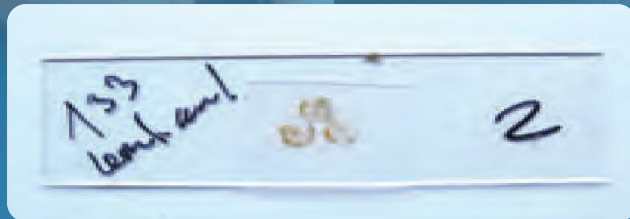


Remains of the North-african cargo
a homogeneous cargo for a line boat

Company Internal

UNDERWATERMUSE Pilot project 2021: TSS 1 shipwreck complete excavation

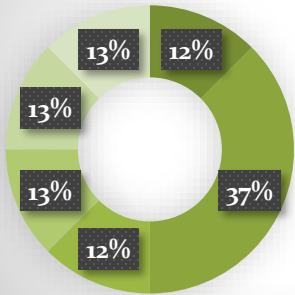
WOOD ANALYSES



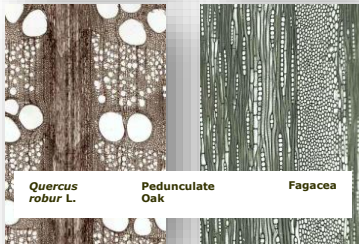
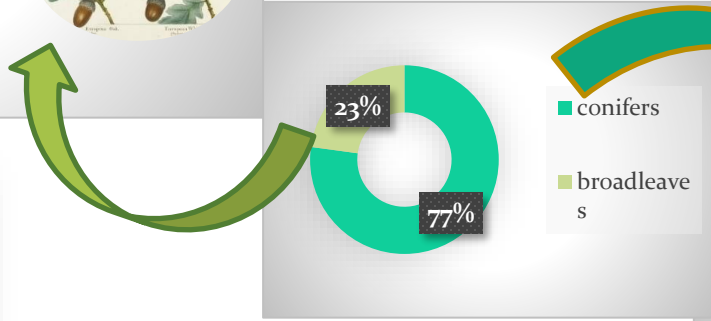
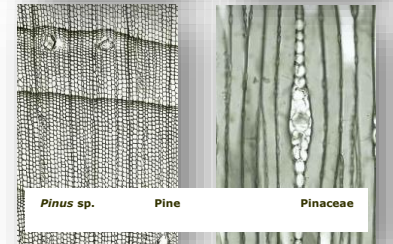
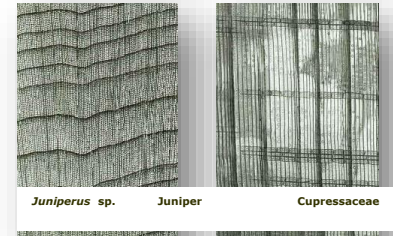
SAMPLES	TAXON
OR38 CAVIGLIA NORD	<i>Fraxinus sp.</i>
CAVIGLIA OR32 SIN	<i>Carpinus betulus/orientalis</i>
CHIGLIA ESTREMITà POPPA	<i>Fraxinus ornus</i>
CHIGLIA PRUA	<i>Quercus robur type</i>
MASSICCIO PRUA	<i>Pinus leucodermis/heldreichii</i>
FE 4 NORD	<i>Pinus brutia/halepensis</i>
FE 6 NORD	<i>Pinus brutia/halepensis</i>
FE 9 NORD	<i>Pinus leucodermis/heldreichii</i>
FE1 ESTREMITà POPPA SIN N	<i>Pinus sp.</i>
FE10 S DRITTA	<i>Pinus heldreichii/leucodermis</i>
FE11 S DRITTA	<i>Pinus pinea</i>
FE12 S DRITTA	<i>Pinus leucodermis/heldreichii</i>
FE14 S DRITTA	<i>Pinus brutia/halepensis</i>
FE2 estremità sin N Poppa	<i>Pinus leucodermis/heldreichii</i>
FE3 ESTREMITà SIN N POPPA	<i>Pinus halepensis/brutia</i>
FE4 POPPA SIN N	<i>Pinus leucodermis/heldreichii</i>
FE5 S DRITTA	<i>Pinus brutia/halepensis</i>
F13 S DRITTA	<i>Pinus halepensis/brutia</i>
FI10 S	<i>Pinus sp.</i>
FI6 S	<i>Pinus heldreichii/leucodermis</i>
OR26 M	<i>Pinus leucodermis/heldreichii</i>
OR26 STAM. DRITTA S	<i>Pinus heldreichii/leucodermis</i>
OR29 MAD. SIN. N	cfr. <i>Ulmaceae</i>
OR29 STAM? SUD DRITTA	<i>Conifera</i>
OR31 M SIN N	<i>Indeterminabile</i>
OR32 SE SIN NORD	<i>Pinus sp.</i>
Or35 estremità DRITTA S	<i>Juniperus sp.</i>
OR40 ESTREMITà DRITTA S	<i>Pinus leucodermis/heldreichii</i>
OR45 STAM DRITTA	<i>Juniperus sp.</i>
OR47 STAM. ESTREMITà DRITTA S	<i>Pinus sp.</i>
PARAMEZZALE	cfr. <i>Pinus</i>
PARAMEZZALINO N	cfr. <i>Larix</i>
PARAMEZZALINO S	<i>Conifera (cfr. Pinus)</i>
PEG TENON DI FE10 IN LINEA CON Or26 SIN	<i>Fraxinus sp.</i>
PEG TENON DI FE5 SU FE6 A PRUA DI OR44	<i>Fraxinus sp.</i>
TENONE F2-F3 OR3 NORD	<i>Quercus ilex type</i>

broadleaves

- *Fraxinus ornus*
- *Fraxinus sp.*
- *Carpinus betulus/orientalis*



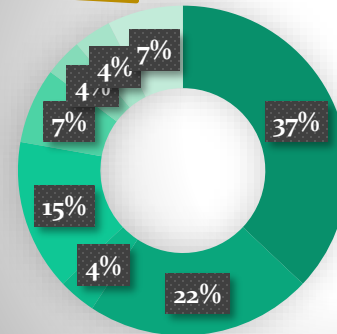
WOOD ANALYSES



conifers

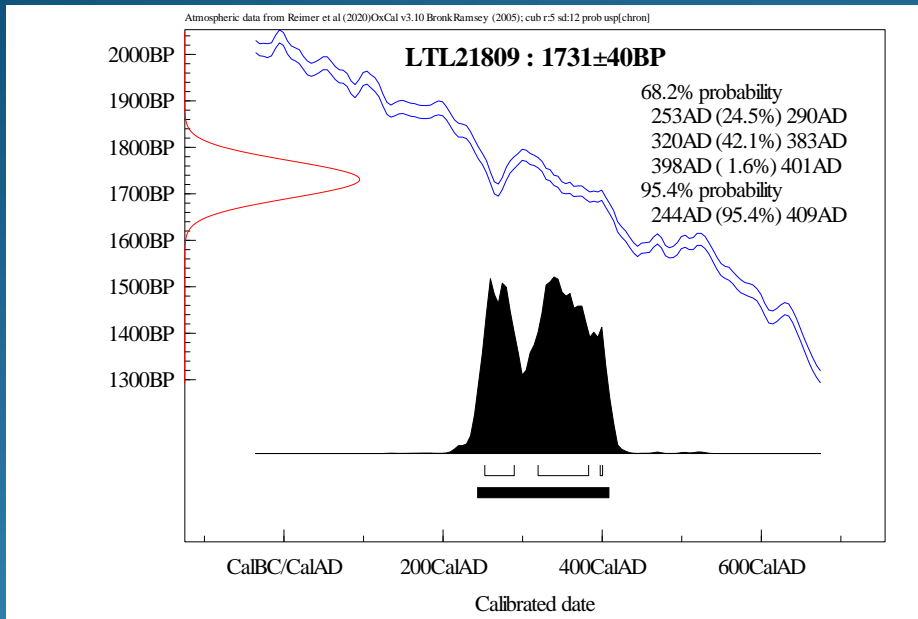


- *Pinus leucodermis/heldreichii*
- *Pinus brutia/halepensis*
- *Pinus pinea*
- *Pinus sp.*
- *Juniperus sp.*



UNDERWATERMUSE Pilot project 2021: TSS 1 shipwreck complete excavation

Dating and Diagnostic Center – CeDAD UniSalento



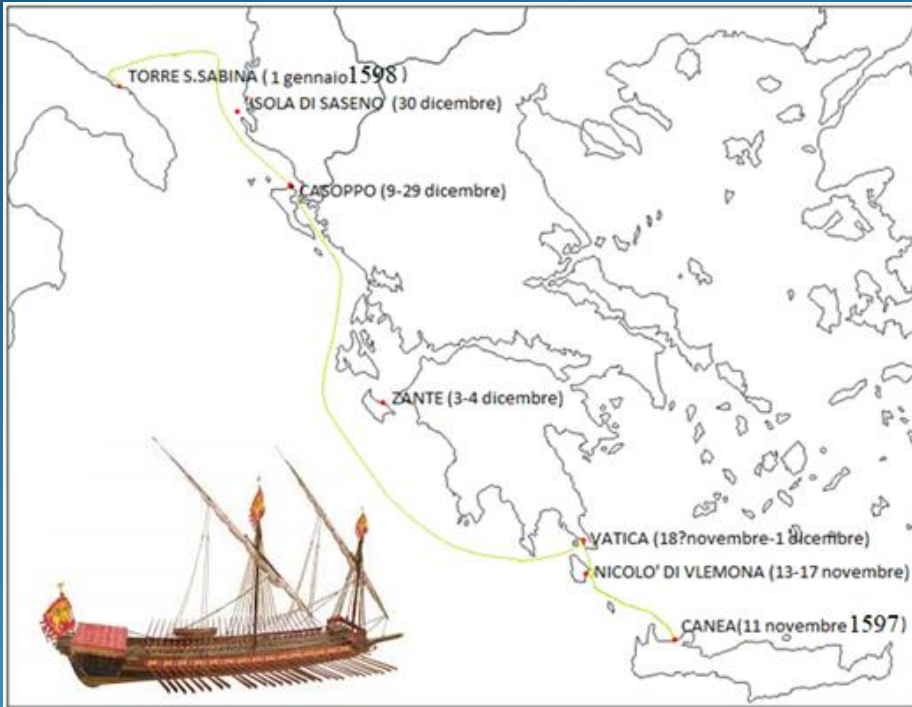
C14 dating of the wooden/
organogenic remains



UNDERWATERMUSE Pilot project 2021: the ghost ship *Galea Magna*

7 weeks of navigation, a journey started on 11 November 1597 from Canea/Chanià harbour (Candia/Crete), and ended on 1 January 1598 due to the shipwreck in Carovigno trap bay

The Provveditore Generale of Candia, Nicolò Donà, coming back to Venice onboard of the *Galea Magna*, castaway and guest in the Carovigno Castle, wrote to Serenissima Government to inform it about the accident



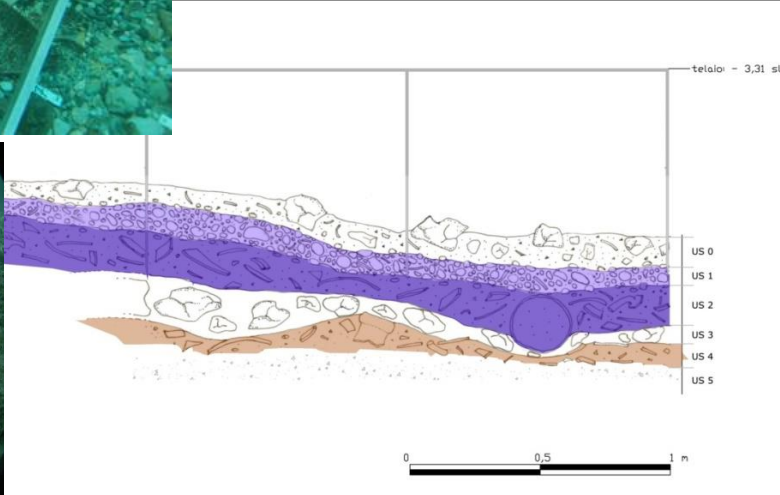
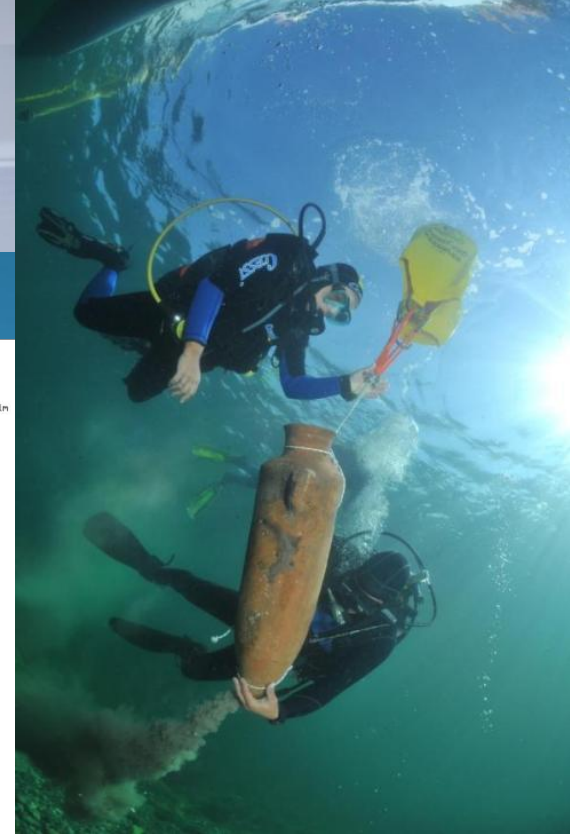
...mano dalla Sabra per suo ...
trovomi al primo del mese di Gennaio a 24 ore naufragato
per la colpa d'ignoranti o cattivi marinari sopra la costa d'
Amphie ...

Di Carovigno a 13 Gennaio 1597
Nicolò Donado Provveditor



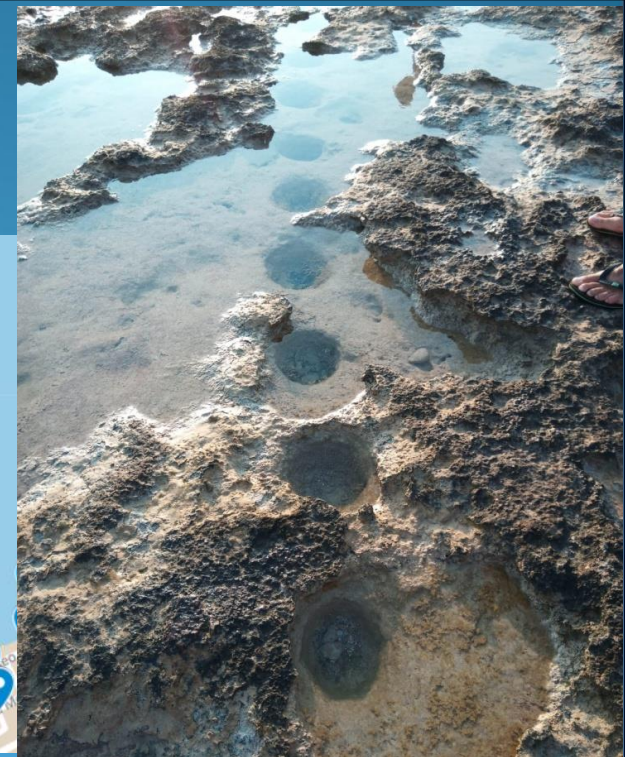
UNDERWATERMUSE Pilot project 2021: Torre S. Sabina 'trap-bay'.

The marine cemetery: the cargos' overlapping



UNDERWATERMUSE Pilot project 2021: Torre S. Sabina drone surveying and mapping

Torre S. Sabina. Drone photogrammetric survey



350 x 1200 m COASTAL AREA
EbeeX (SenseFly)
Phantom 4 Pro RTK
Mavic 2 PRO



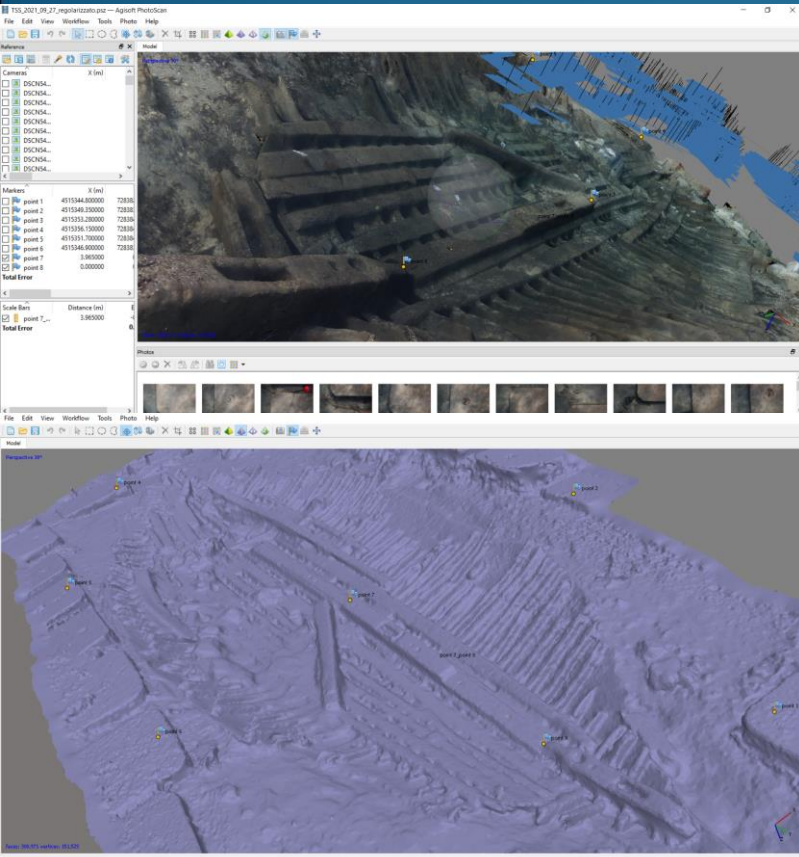
UNDERWATERMUSE Pilot project 2021: Heritage community involvement Awareness increasing

Public archaeology
Open day



UNDERWATERMUSE Pilot project 2021

Techniques and technologies: photogrammetry, remote sensing, ROV, multibeam



Agisoft PhotoScan

Processing Report
21 October 2021

Survey Data

Fig. 1. Camera locations and image overlap.

Number of images: 549 Camera stations: 536
 Flying altitude: 1.61547 m Tie-points: 112100
 Ground resolution: 0.00033912 m/pix Projectors: 376147
 Coverage area: 9.67601e-005 sq km Error: 1.60615 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
COOLPIX W300 (4.3 mm)	4608 x 3456	4.3 mm	1.34582 x 1.34582 um	No

Table 1. Cameras.

Camera Calibration

Fig. 2. Image residuals for COOLPIX W300 (4.3 mm).

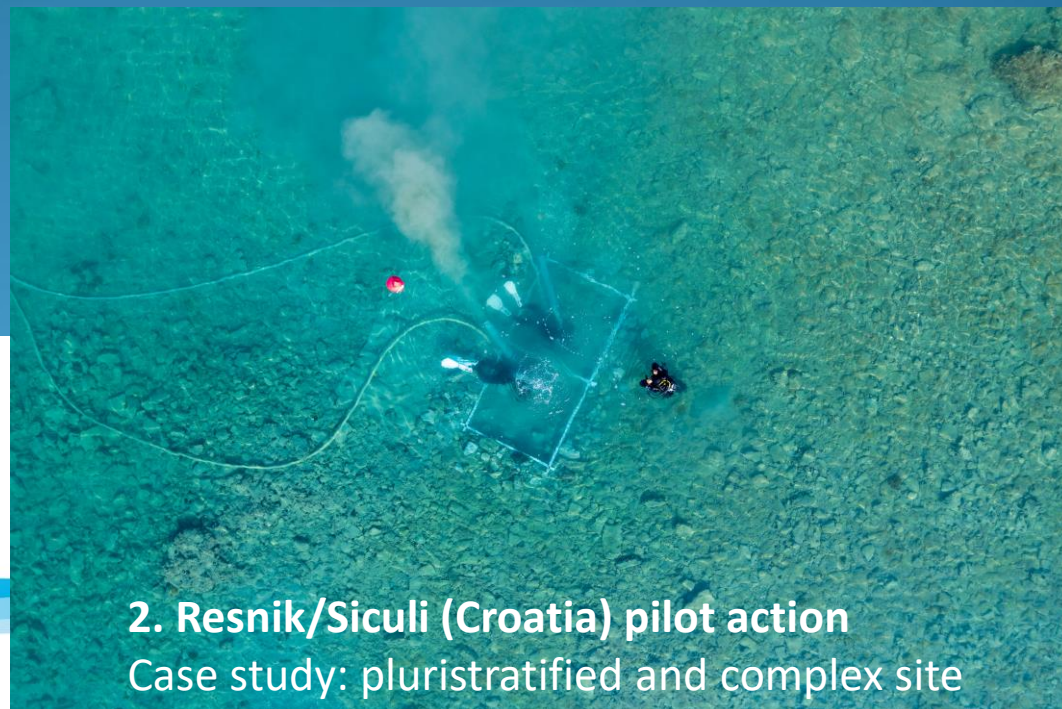
COOLPIX W300 (4.3 mm)

Type:	Frame	K1:	0.0469912
Fx:	4562.46	K2:	0.0391277
Fy:	4562.46	K3:	-0.141901
Cx:	2300.21	K4:	0

Digital Elevation Model



UCH Research & Enhancement: UNDERWATERMUSE Project (Italy-Croatia Interreg Programme)



2. Resnik/Siculi (Croatia) pilot action
Case study: pluristratified and complex site

UCH Research & Enhancement:

UNDERWATERMUSE Project (Italy-Croatia Interreg Programme)

3. Grado 2 shipwreck pilot action In situ preservation and enhancement



A frame of the Adriatic history (3rd cent. BC)
Wine amphorae of Adriatic production

A small *cabotatore* engaged in a regional trade along small-medium range routes

3. Grado 2 shipwreck pilot action. In situ preservation and enhancement

1. Removal and cleaning of the protective cages 2012-2015

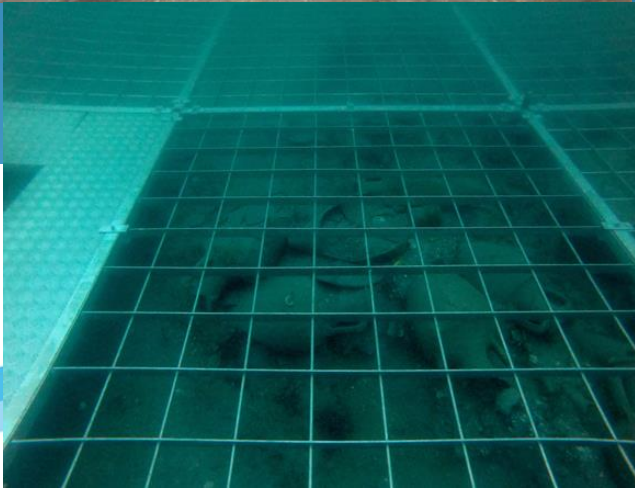
2. Cleaning of the upper layer aimed at identifying the edges of the site

3. Accurate cleaning of the cargo

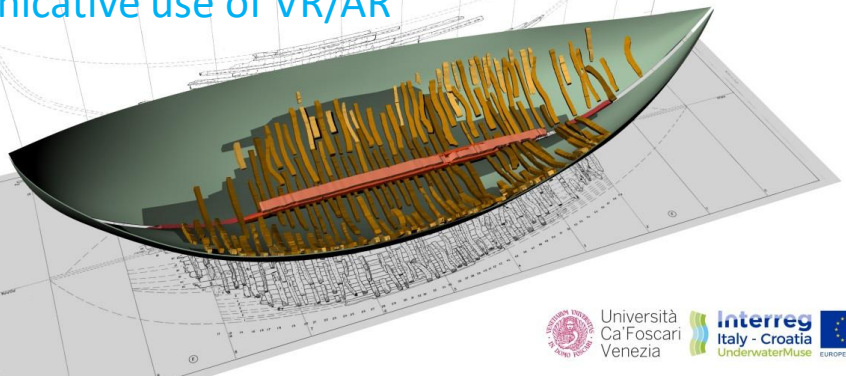
4. Photogrammetry and other documentation

5. Test pits aimed at verifying the entity of the cargo and the eventual presence of the hull

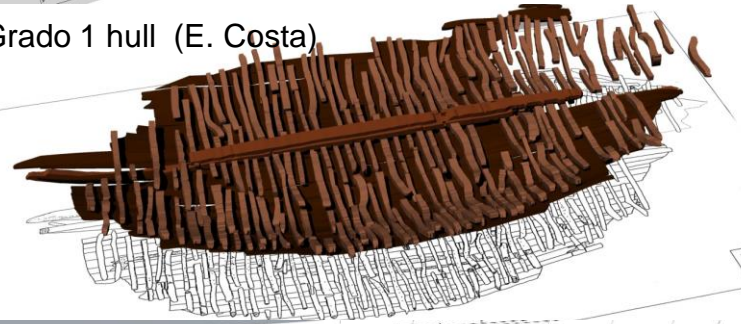
6. Repositioning and extension of the cages



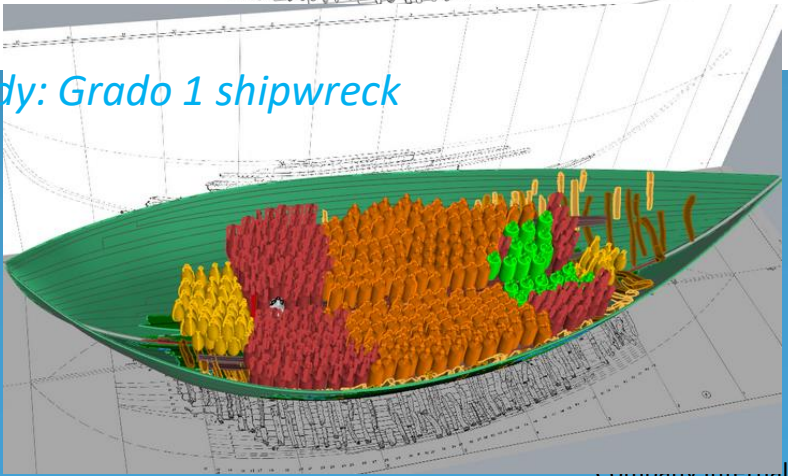
Bring heritage to people
make visible the non-visible through the narrative and communicative use of VR/AR



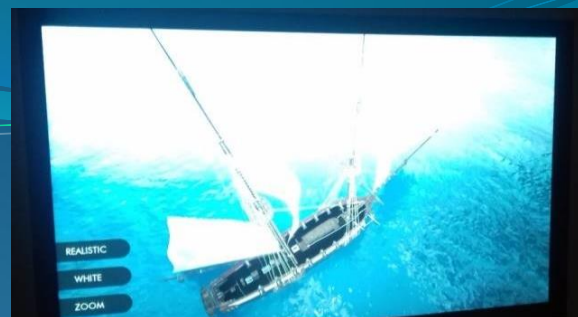
3D model of the Grado 1 hull (E. Costa)



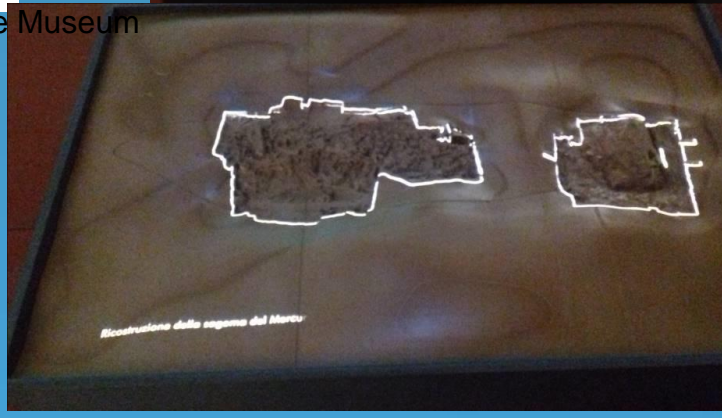
Case study: Grado 1 shipwreck



Company internal



OculusQuest
Caorle Museum

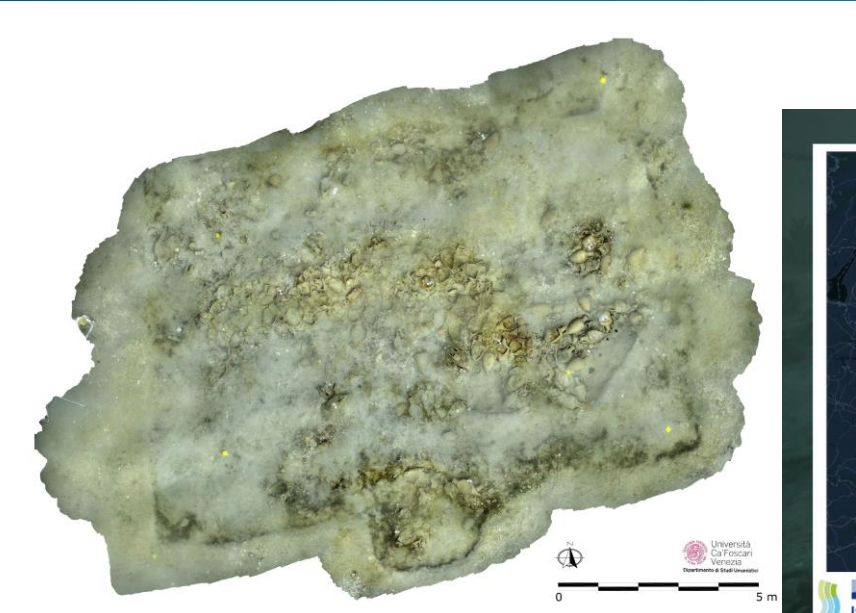


UCH Research & Enhancement:

UNDERWATERMUSE Project (Italy-Croatia Interreg Programme)

bring heritage to people

make visible the non-visible through the narrative and communicative use of VR/AR



Case study: Grado 2 shipwreck

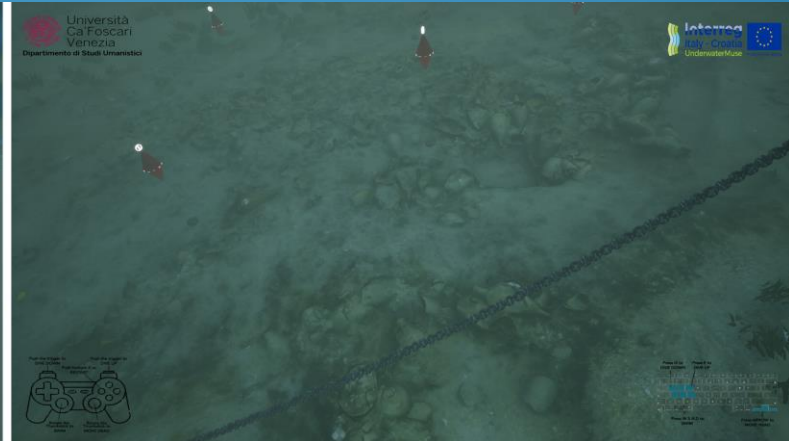


La rotta della nave

Da dove proveniva e dov'era diretta la nave che trasportava queste anfore? A oggi non abbiamo elementi sufficienti per dirlo. Sappiamo però che anfore simili erano numerose nei grandi empori etruschi posti nel delta del Po, come Adria (da cui l'Adriatico prende il nome) e Spina, e sono state prodotte lungo la costa romagnola, a Cattolica. La presenza di una nave carica di anfore greco-italiche, forse prodotte nell'alto Adriatico e contenenti quindi vino locale, potrebbe essere un altro segnale dell'avanzata di Roma verso est (che già aveva fondato le colonie di Rimini nel 268 a.C. e Brindisi nel 244 a.C.), per lo sfruttamento dei fertili territori agricoli di questo versante e il controllo delle rotte dirette a Oriente.

The ship's route

Where did this ship come from and where was it headed? To date, we do not have sufficient elements to say this. However, we know that similar amphoras were numerous in the large Etruscan emporiums located in the Po delta, such as Adria (from which the Adriatic takes its name) and Spina, and were produced along the Romagna coast, in Cattolica. The presence of a ship with Greek-Italic amphoras, perhaps produced in the upper Adriatic and therefore containing local wine, could be another sign of the advance of Rome towards the east (which had already founded the colonies of Rimini in 268 BC and Brindisi in 244 BC), for the exploitation of the fertile agricultural territories of this side and the control of the routes to the East.



UCH Research & Enhancement: UNDERWATERMUSE Project Final Event



 **Interreg**
Italy - Croatia
UnderwaterMuse
European Regional Development Fund



APPUNTAMENTI
LECCE - PORTO CESAREO
3/4/5 GIUGNO 2022

CONVEGNO
**STATI GENERALI
DELLA GESTIONE
DAL BASSO DEL
PATRIMONIO
SUBACQUEO**



VENERDÌ 3 • 9:00/19:30
SABATO 4 • 16:00/19:30
DOMENICA 5 • 9:00/13:00
MUSEO CASTROMEDIANO - LECCE

 **Interreg**
Italy - Croatia
UnderwaterMuse
European Regional Development Fund



APPUNTAMENTI
LECCE - PORTO CESAREO
3/4/5 GIUGNO 2022

**FRUIZIONE
IMMERSIVA
APP 3D**

*LA NAVE DELLE COLONNE DI PORTO
CESAREO: IL VIAGGIO INCOMPIUTO
LA NAVE FANTASMA DI TORRE GUACETO
SICULI SOMMERSA*



VENERDÌ 3 • 17:00/19:30
SABATO 4 • 17:00/19:30
DOMENICA 5 • 10:30/12:30
MUSEO CASTROMEDIANO - LECCE

 **Interreg**
Italy - Croatia
UnderwaterMuse
European Regional Development Fund



APPUNTAMENTI
LECCE - PORTO CESAREO
3/4/5 GIUGNO 2022

**SNORKELING
VISITA GUIDATA
TORRE E MOSTRA
ARCHEOLOGICA
FRUIZIONE
IMMERSIVA APP 3D**



SABATO 4 • 10:00/13:00
AREA MARINA PROTETTA PORTO CESAREO - TORRE CHIANCA

UCH Enhancement: the transnational projects

BlueMed PLUS

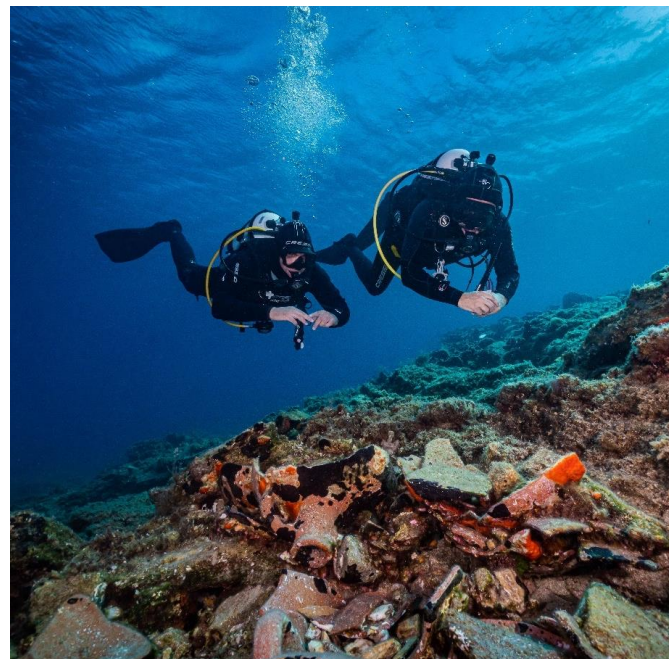
Capitalization by transferring to new Med territories the BlueMed multidisciplinary model for sustainable and responsible coastal tourism development

Starting date: 01-06-2021

Final date : 30-06-2022

Duration: 13 months

Call: Interreg MED fifth call for modular projects (2nd call for transfer and mainstreaming projects)



BlueMed PLUS

Puglia Roadmap



Milestone 1: Mapping & selection of site:
Torre S. Sabina



UCH Enhancement: the transnational projects



Italian Archaeological Mission at Hierapolis of Phrygia (Turkey)

headed by prof. Grazia Semeraro (University of Salento)

Survey of underwater remains of the Civic Agora preserved in the thermal pool

UCH Enhancement: the communication projects

Regional Project Puglia Seascapes

Accessibility, storytelling, apps



...expanding accessibility: training of underwater archaeologists such as guides for people with disabilities, with Albatros Progetto P. Pinto Scuba Blind Association...

UCH Enhancement: the communication projects

Regional Project Puglia Seascapes Accessibility, storytelling, apps

...and to tourist use of the underwater archaeological heritage,
with interactive apps and narrations in virtual reality.

Verso le fabbriche
per gli dei e i potenti della Terra,
ricordo opere solenni viaggiare
per scolpire le glorie umane nel cielo;

Il video *Da queste rive*



 **REGIONE PUGLIA**
DIPARTIMENTO TURISMO, ECONOMIA
DELLA CULTURA E VALORIZZAZIONE
DEL TERRITORIO, SEZIONE TURISMO

 **Teatro Pubblico Pugliese**

 **Consorzio Regionale per le Arti e la Cultura**

 **PiiiL CULTURA Puglia**

Underwater wonderland: apps

UCH Research and enhancement : ESAC



ESAC is the systematization of all the previous actions carried out in Puglia for the coastal and submerged heritage. The governance of the Center stems from an agreement between the Region, the 3 Universities and the National Superintendence for Underwater Heritage in a participatory process of knowledge and enhancement of the heritage through concrete projects and measures.



**PUGLIA Regione
Euro-Mediterranean Center
for the Seascapes Archeology**

Research
Cataloguing

Conservation
Restoration

Education
Training

Dissemination
Communication

fundraising
Tranborder
cooperation

Enhancement
Tourist enjoyment

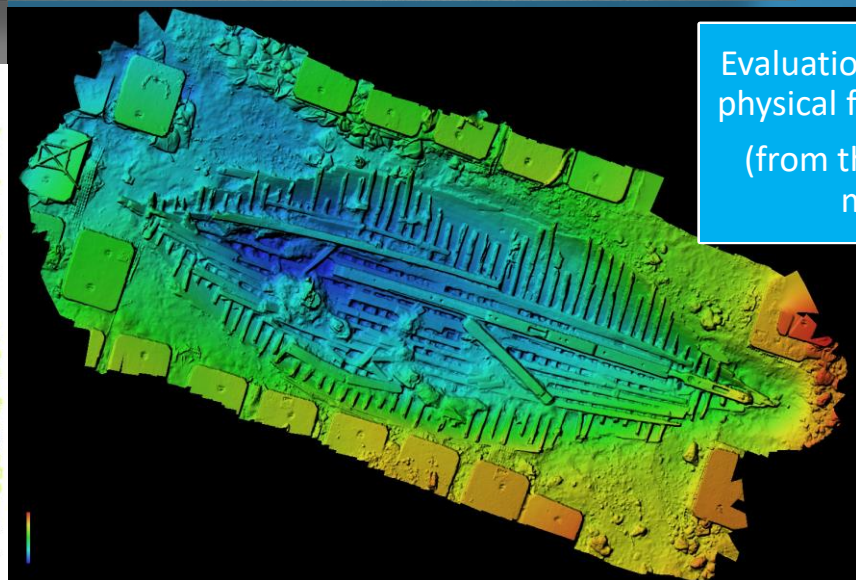
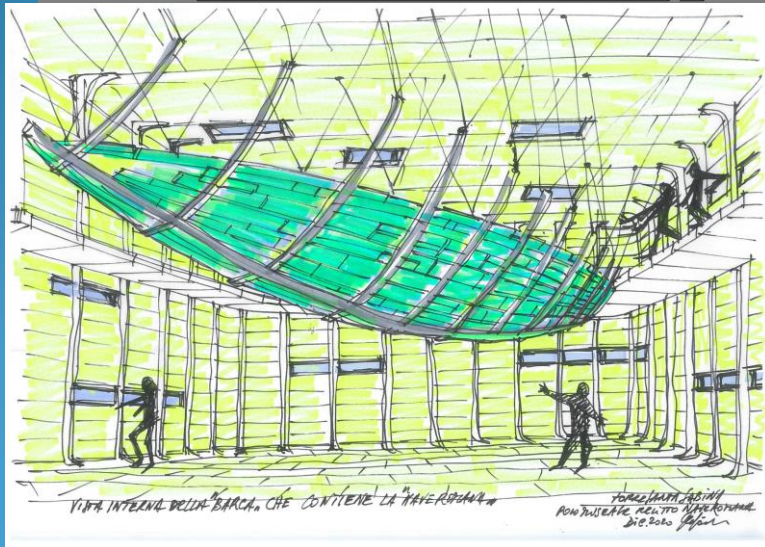
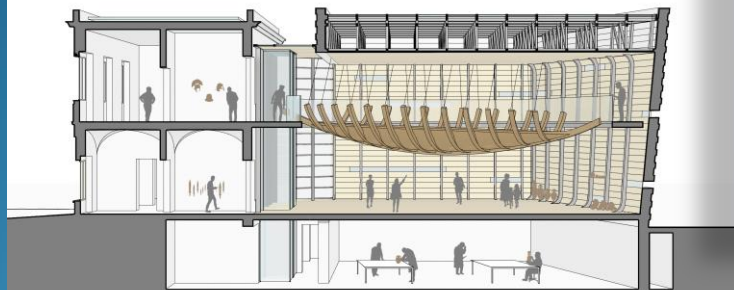
UCH Research and enhancement : ESAC action planning

a feasibility study for Torre S. Sabina



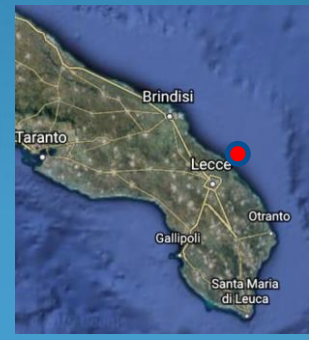
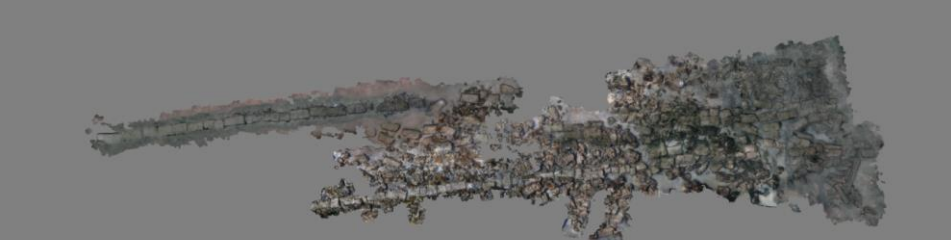
Design of the waterfront maritime museum connected to the archaeological park/blue trails

Evaluation of the TSS1 ship recovery and restoration (open lab)



Evaluation of TSS1 ship physical floating replica (from the virtual 3D model)

UCH Research and enhancement : ESAC recent projects

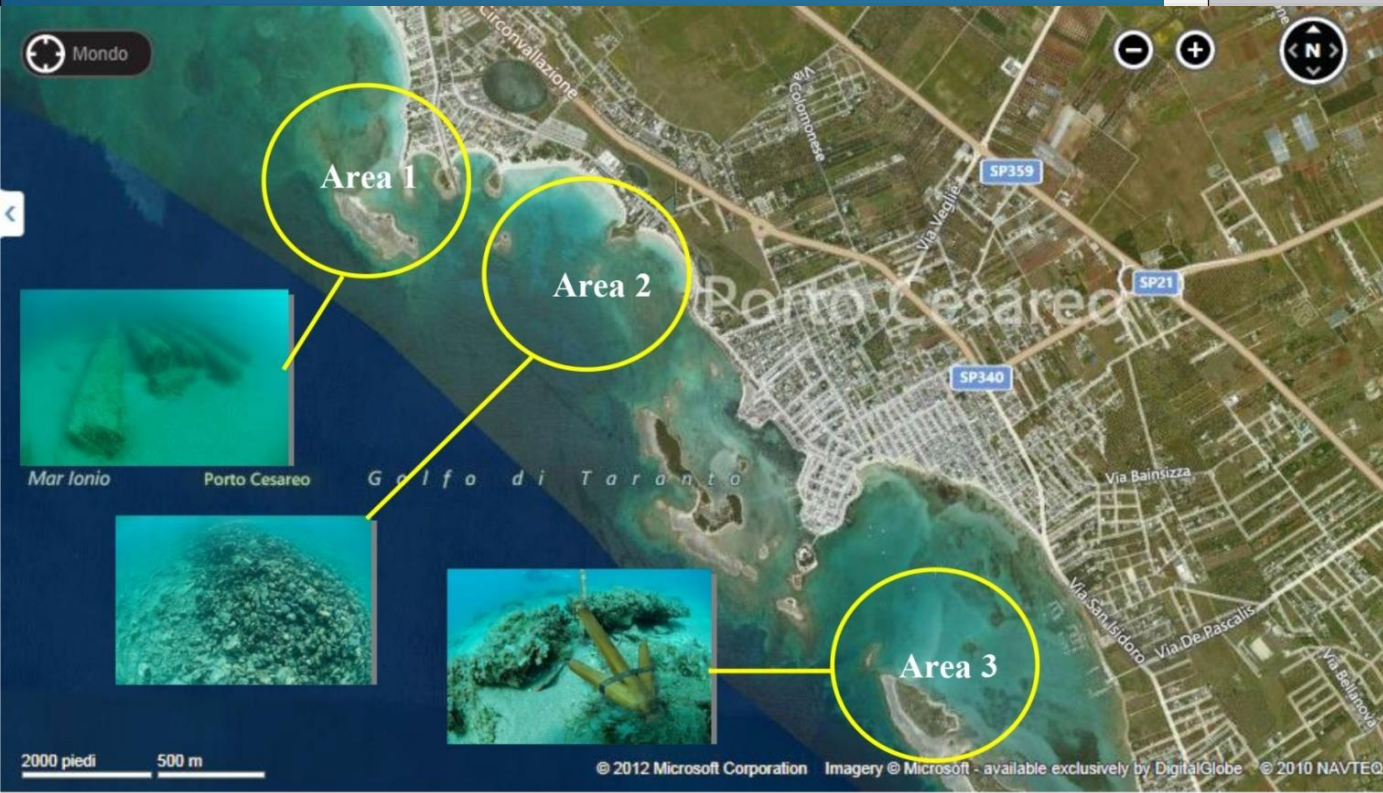
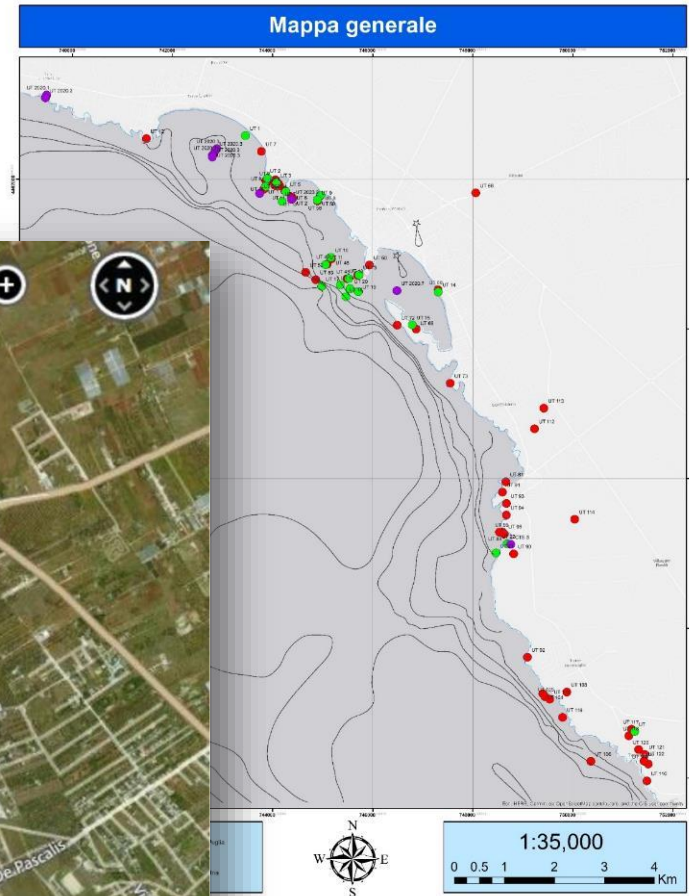


Le Cesine - San Giovanni:
the big port complex of *Lupiae*/Lecce

UCH Research and enhancement : ESAC recent projects



UNIVERSITÀ
DEL SALENTO



PORTO CESAREO

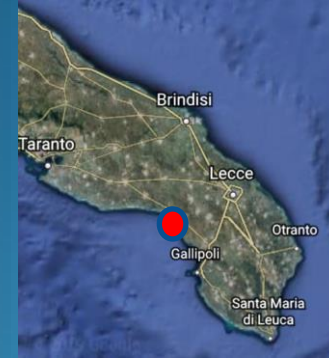
Coastal and Underwater Archaeological Park Project in MPA

Company Internal

UCH Research and enhancement : ESAC recent projects



UNIVERSITÀ
DEL SALENTO



*...submerged
steles and tombs...*



coastal and partially submerged settlements, necropolises...

PORTO CESAREO

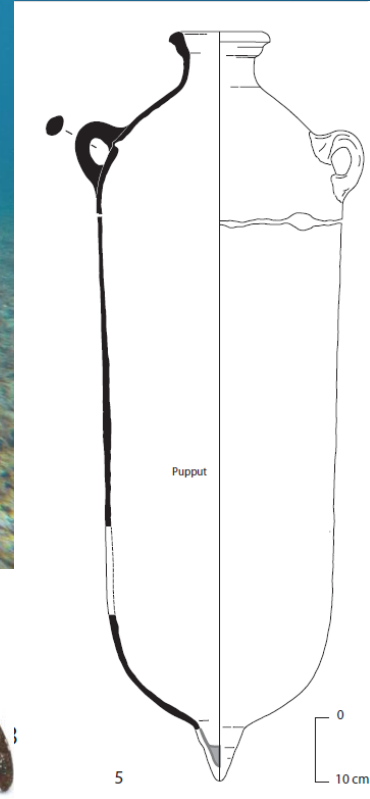
Coastal and Underwater Archaeological Park Project in MPA

Company Internal

UCH Research and enhancement : ESAC recent projects



UNIVERSITÀ
DEL SALENTO



*.....the cargo of Tripolitanian amphoras,
transformed in gigantic concretions that rise
on the seabed*

PORTO CESAREO

Coastal and Underwater Archaeological Park Project in MPA

Company Internal

UCH Research and enhancement : ESAC recent projects



UNIVERSITÀ
DEL SALENTO



EMILIANO PELUSO

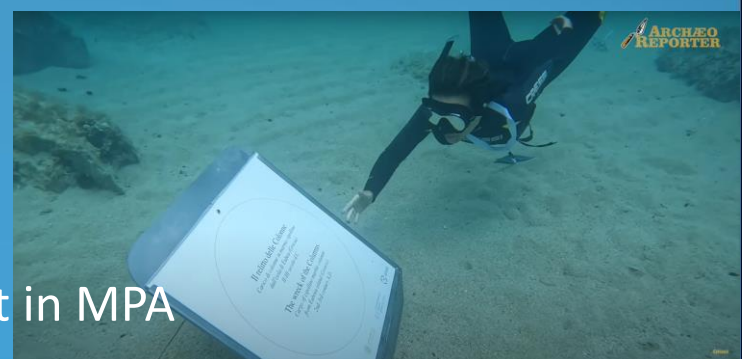


PORTO CESAREO

Coastal and Underwater Archaeological Park Project in MPA



EMILIANO PELUSO



ARCHEO
REPORTER

UCH Research and enhancement : ESAC recent projects



UNIVERSITÀ
DEL SALENTO



Dry-diving in Torre Chianca



PORTO CESAREO

Coastal and Underwater Archaeological Park Project in MPA

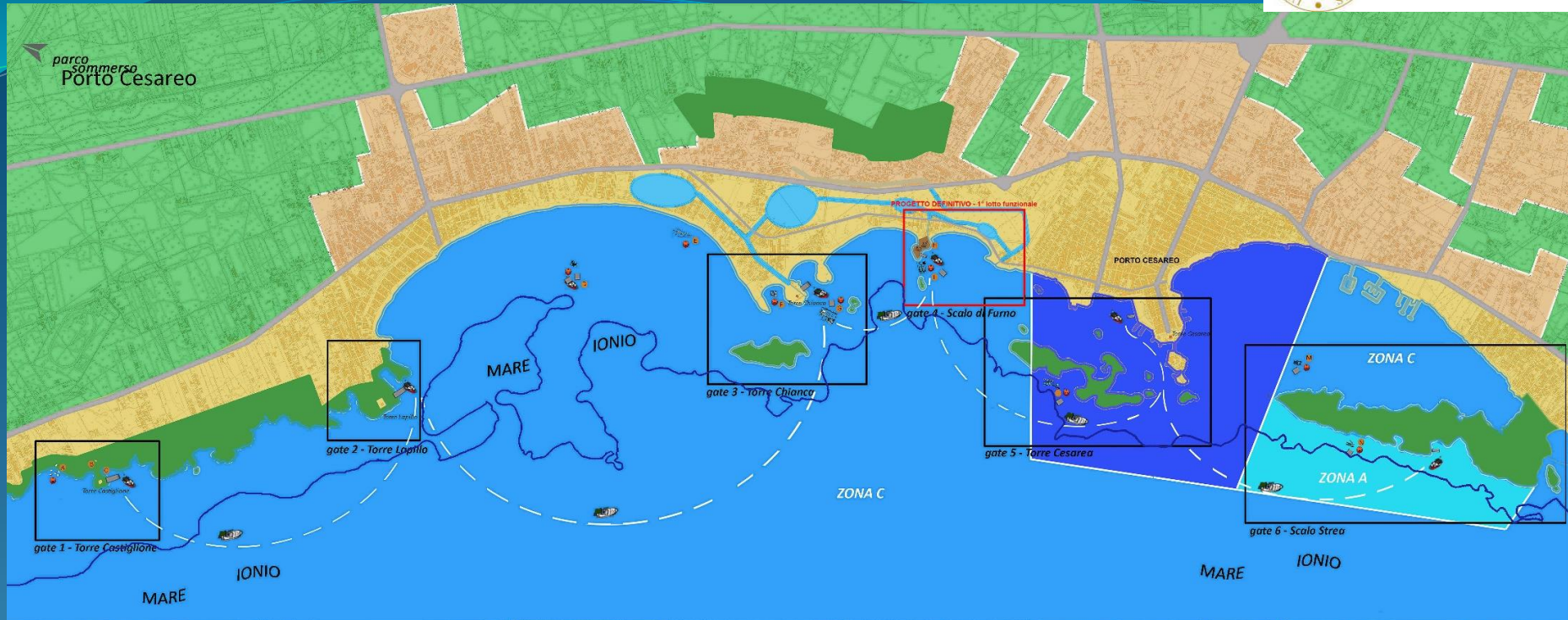
© 2020 All rights reserved

Company Internal

UCH Research and enhancement : ESAC recent projects



UNIVERSITÀ
DEL SALENTO



PORTO CESAREO Coastal and Underwater Archaeological Park Project in MPA
Feasibility study and establishment of a technical table

UCH Research and protection : ESAC recent projects



UNIVERSITÀ
DEL SALENTO

BRINDISI, P. Penne
*Artillery's recovery from
a beached wreck*

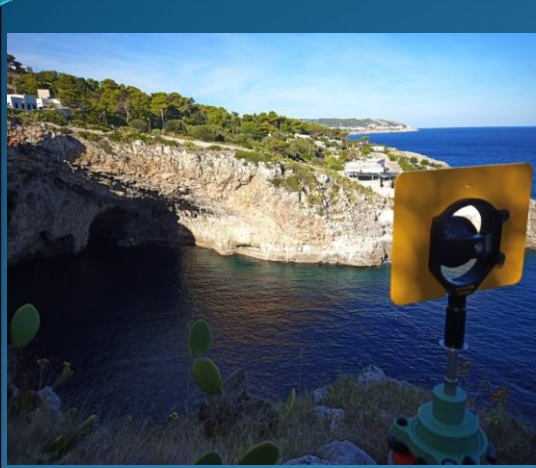


UCH Research and enhancement : ESAC recent projects



UNIVERSITÀ
DEL SALENTO

The Sea and the Sacred project



Grotta Zinzulusa, Castro, Lecce: the sacred cave.
An innovative tool for the 3D model: SLAM Laser scanner



Convention on the Value of Cultural Heritage for Society (Faro Convention, 2005)

'Cultural heritage': "a set of resources inherited from the past that the populations identify, regardless of who owns them, as a reflection and expression of their values, beliefs, knowledge and traditions, in constant evolution" (art. 2a)

'Heritage community': "a group of people who attach value to specific aspects of cultural heritage, and who wish, as part of a public action, to support them and pass them on to future generations"

www.facebook.com/Project-UnderwaterMuse-106106884192806/

Archeologia Subacquea – Università del Salento

www.unisalento.it/scheda-utente/-

[/people/rita.auriemma/didattica/1182442019/scheda](http://people.rita.auriemma/didattica/1182442019/scheda)

<https://www.facebook.com/ArcheoSubUniSalento/>

ESAC – Euromediterranean Seascapes Archaeology Center

<https://www.facebook.com/esacpuglia/>

e-mail: esacpuglia@regione.puglia.it

UnderwaterMuse

www.italy-croatia.eu/web/underwatermuseum



**UNIVERSITÀ
DEL SALENTO**

The two seas University