

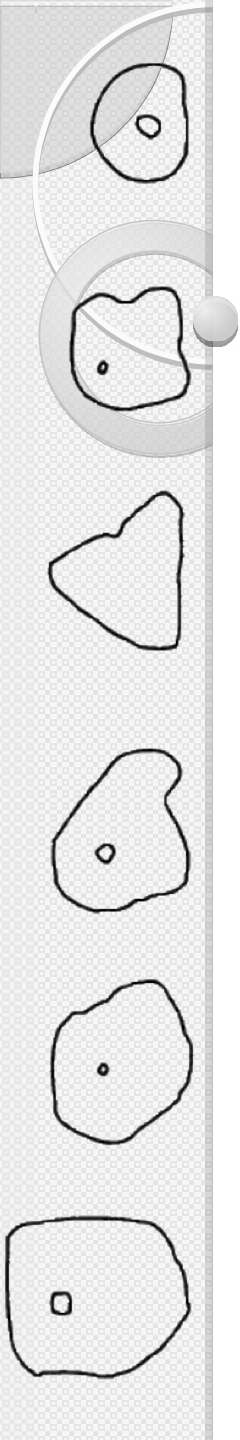
**HONOR FROST FOUNDATION**

Supporting Marine and Maritime Archaeology in the Eastern Mediterranean

# Moving Targets: Mapping the Shoreline of Cyprus

Georgia Marina Andreou, University of Edinburgh  
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CARTAGENA 2014  
**IKUWA V**



Top left: Mazotos; Top right: Kivisili; Bottom: Tochni

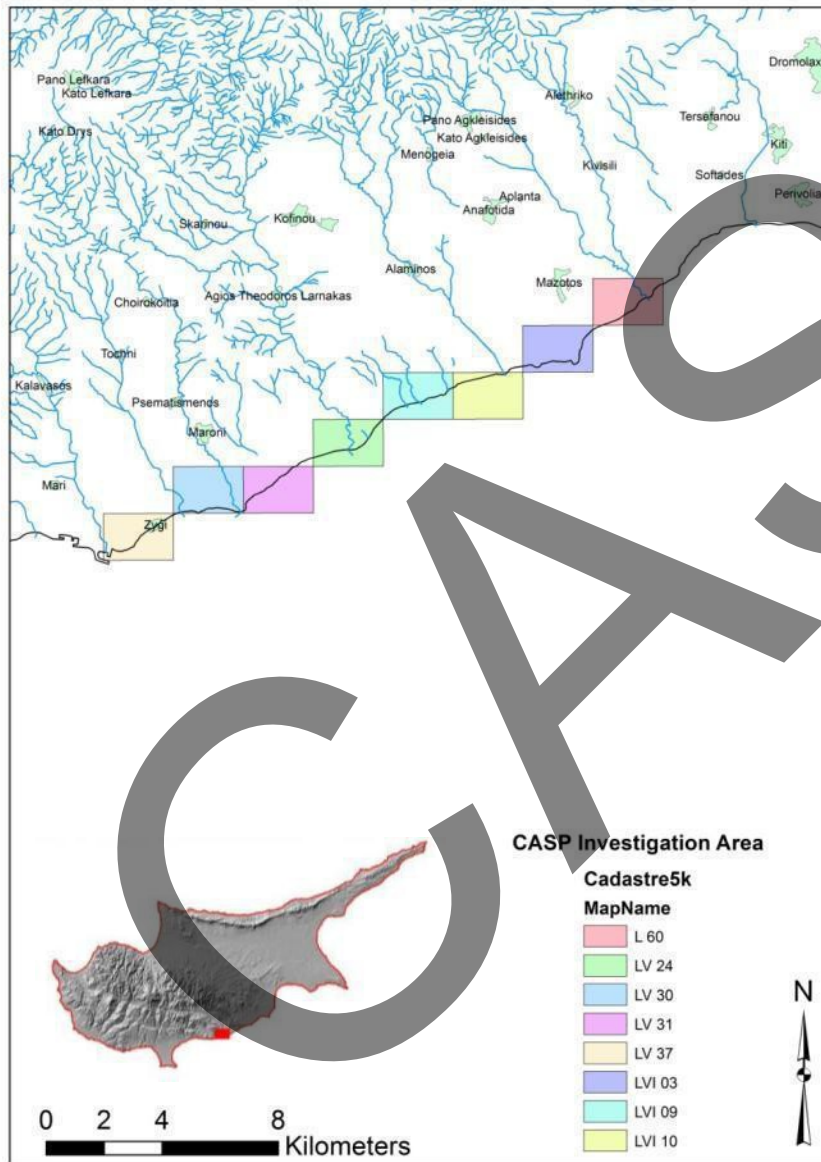


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Supporting Marine and Maritime Archaeology in the Eastern Mediterranean

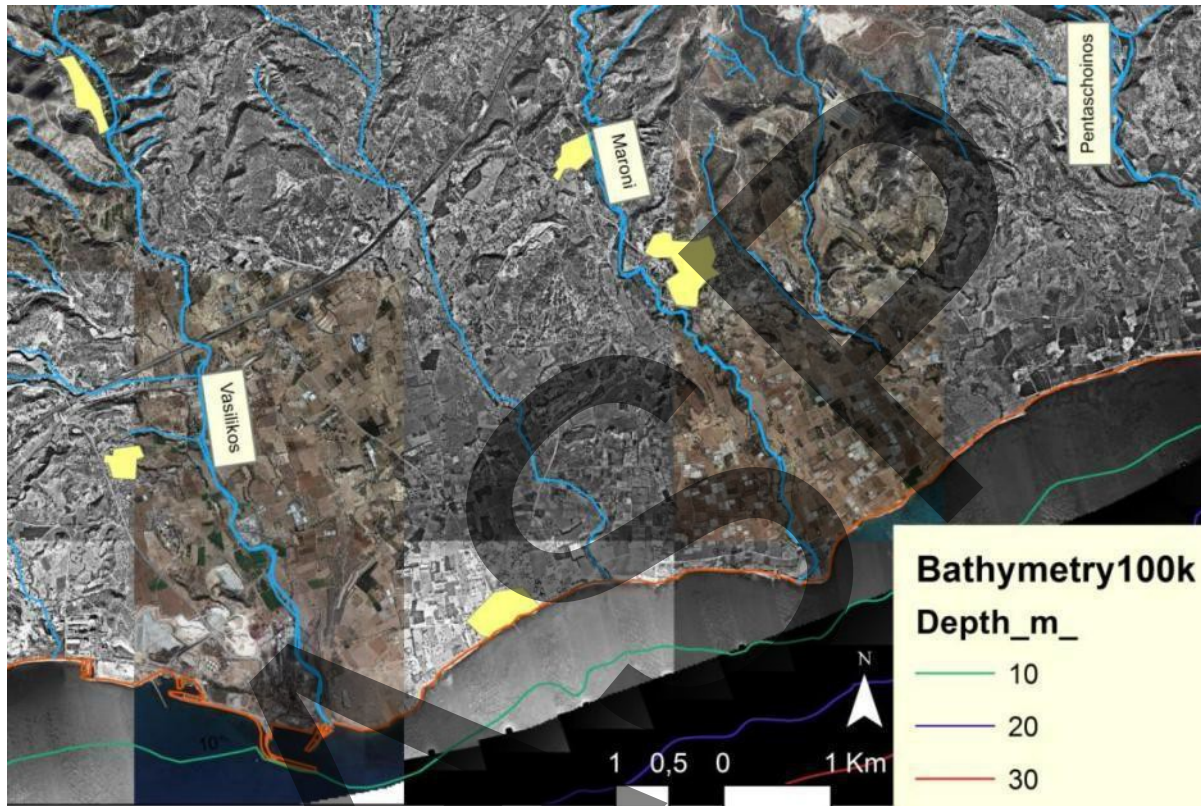
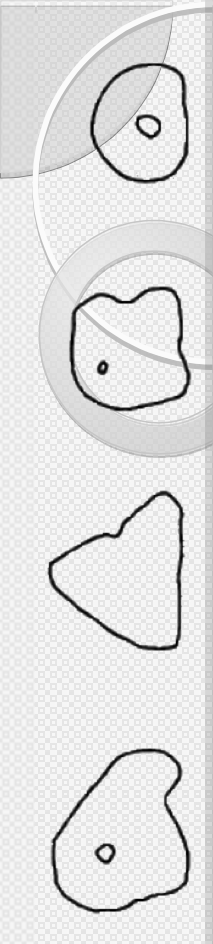
## Cyprus Ancient Shoreline Project

- Ascertain local drivers of erosion
- Assess the extent of land loss and its impact on cultural heritage
- Propose mitigation measures and legal frames to protect the Cypriot coastal heritage

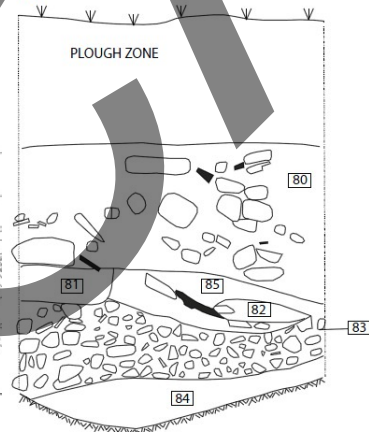


## Methodology

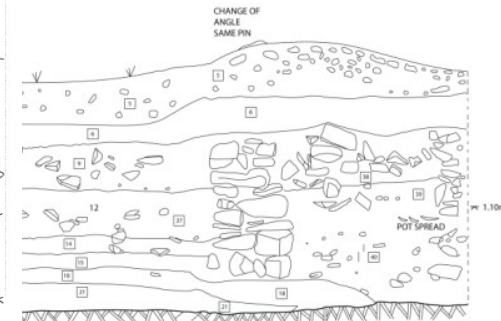
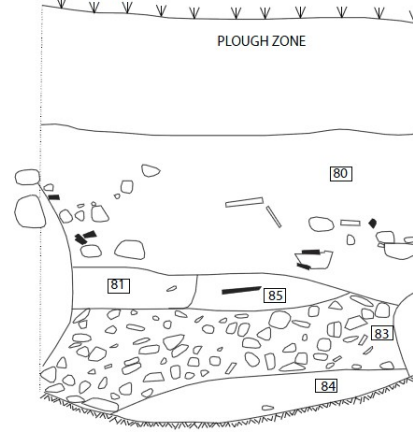
- Investigation of diachronic settlement patterns
- Examination of historical cartography

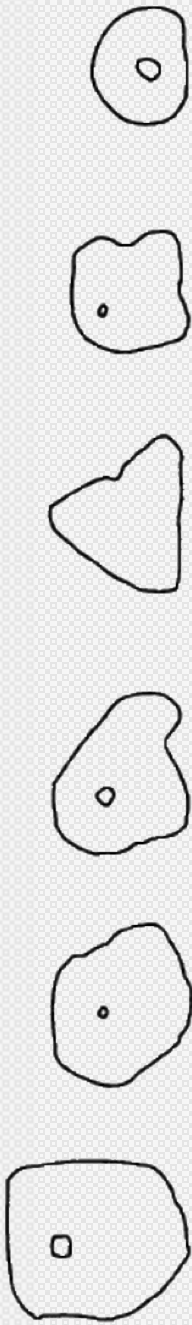


S.Facing Section of F.69  
GMA, 13/6/2013  
1:20

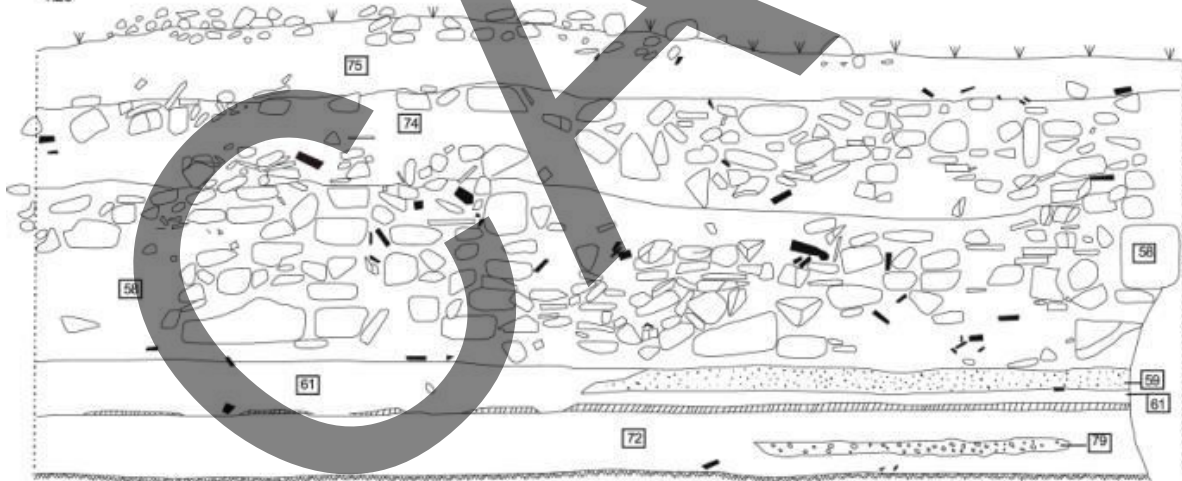


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GMA, 14/6/2013  
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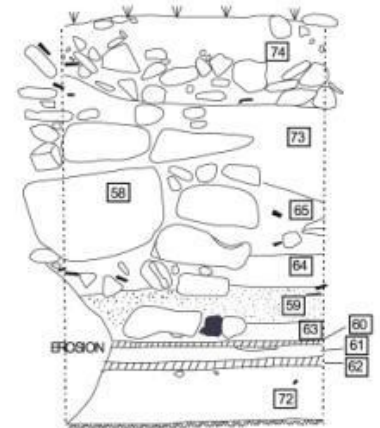


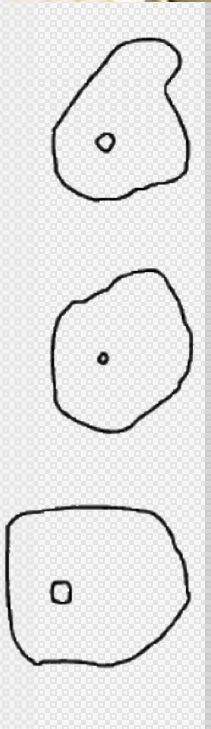
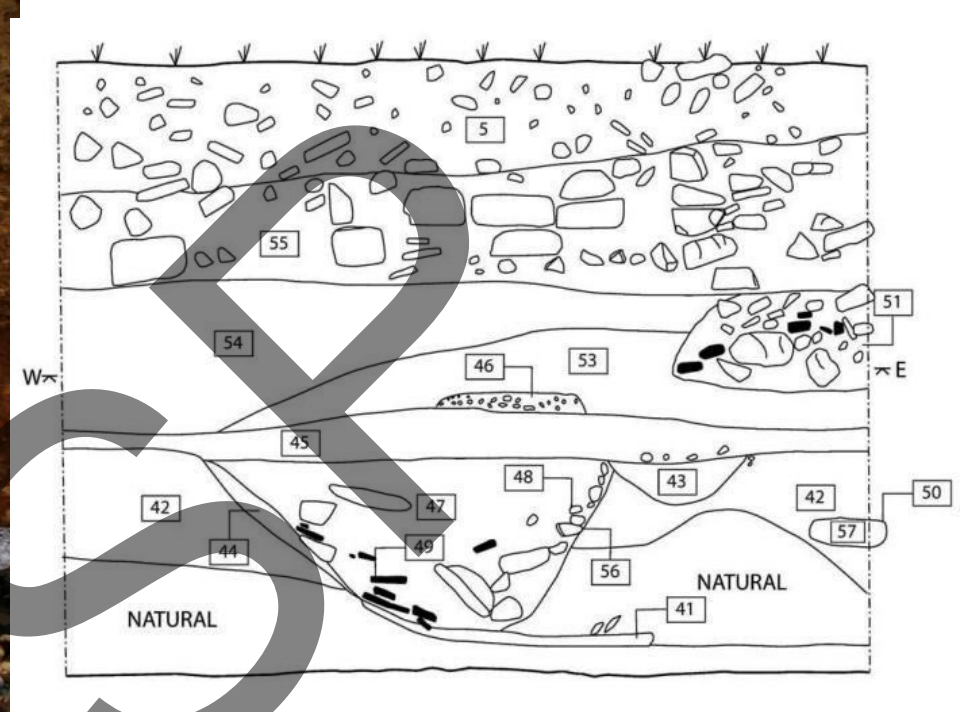


S. Facing Section of Wall 58  
GMA, 7/6/2013-11/6/2013  
1:20



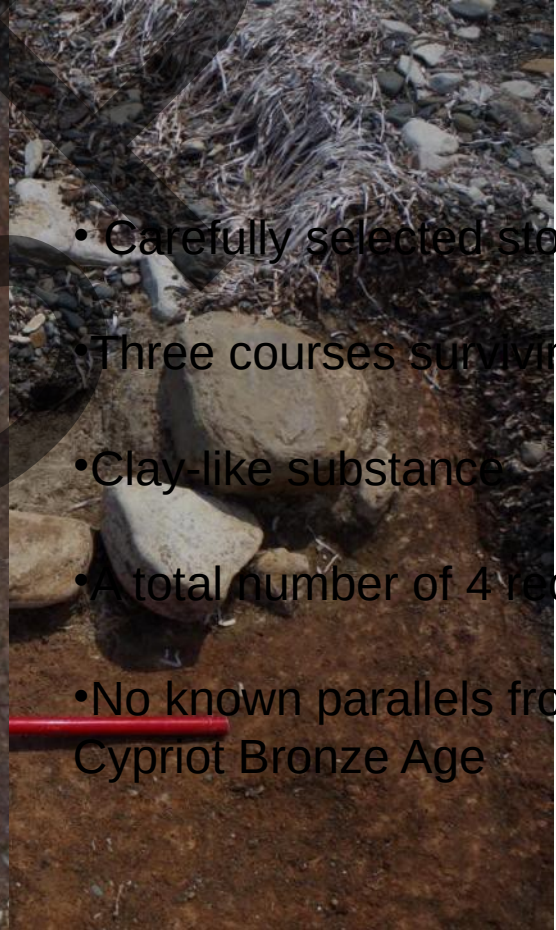
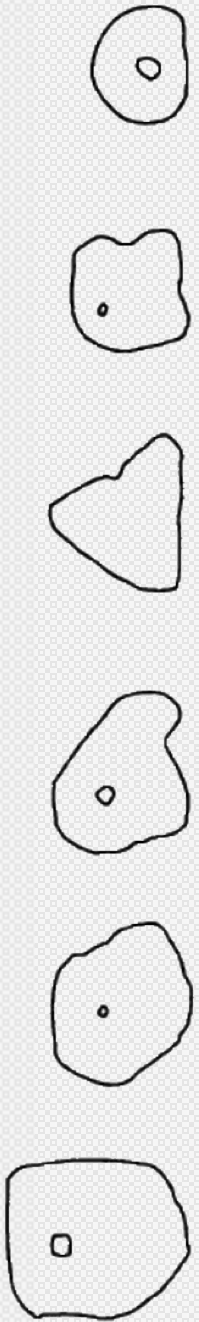
E. Facing Section of Wall 58  
GMA, 6/6/2013  
1:20



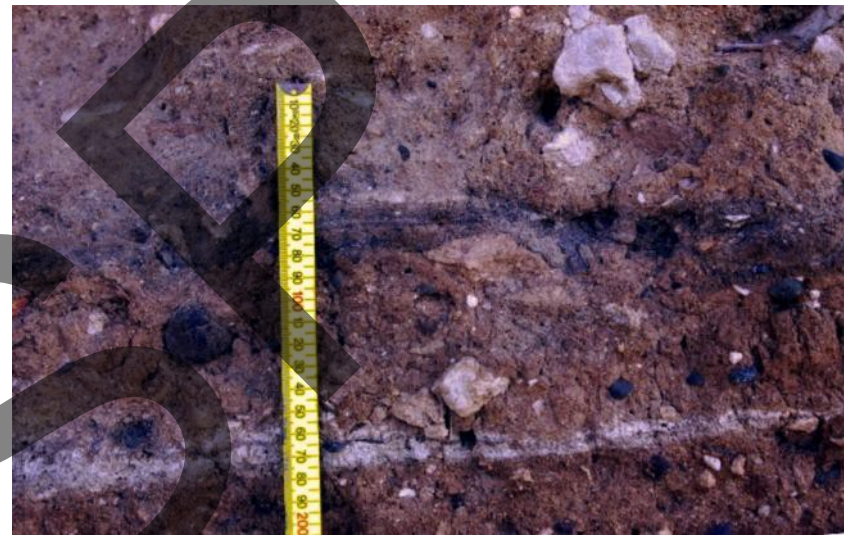
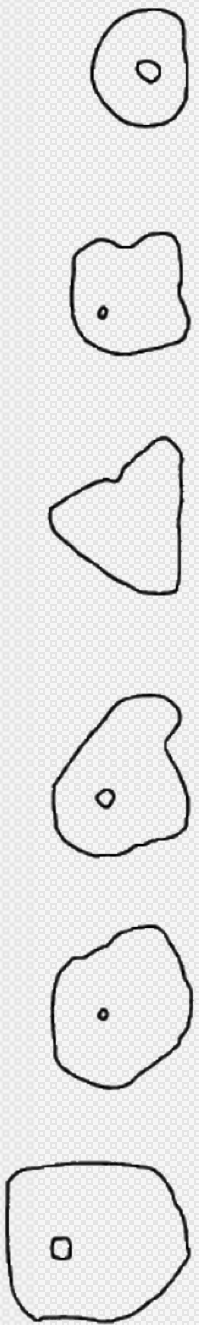


- Chamber cut on natural
- Burnt stones
- Pithos sherds
- Ash
- Burnt/Petrified Surface
- One pottery sherd adhered to that surface.



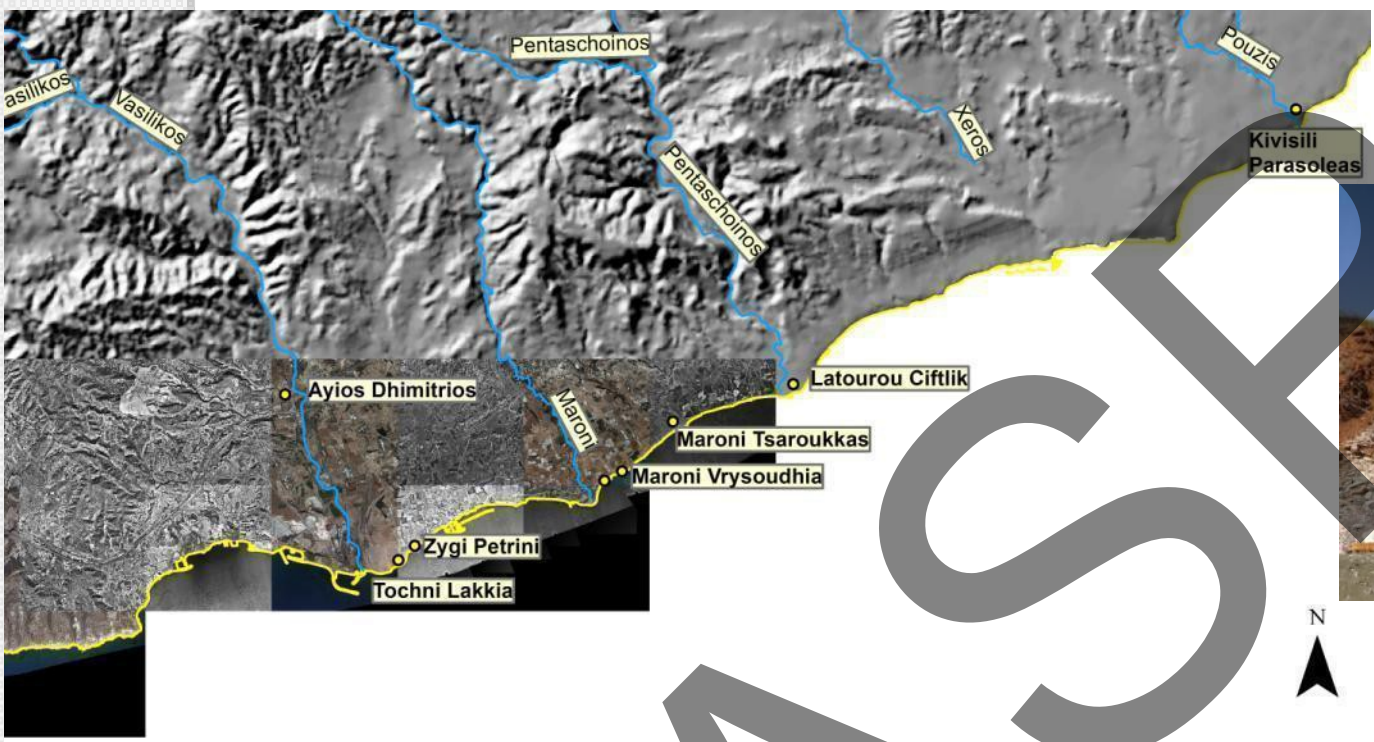


- Carefully selected stones
- Three courses surviving
- Clay-like substance
- A total number of 4 recorded
- No known parallels from the Cypriot Bronze Age

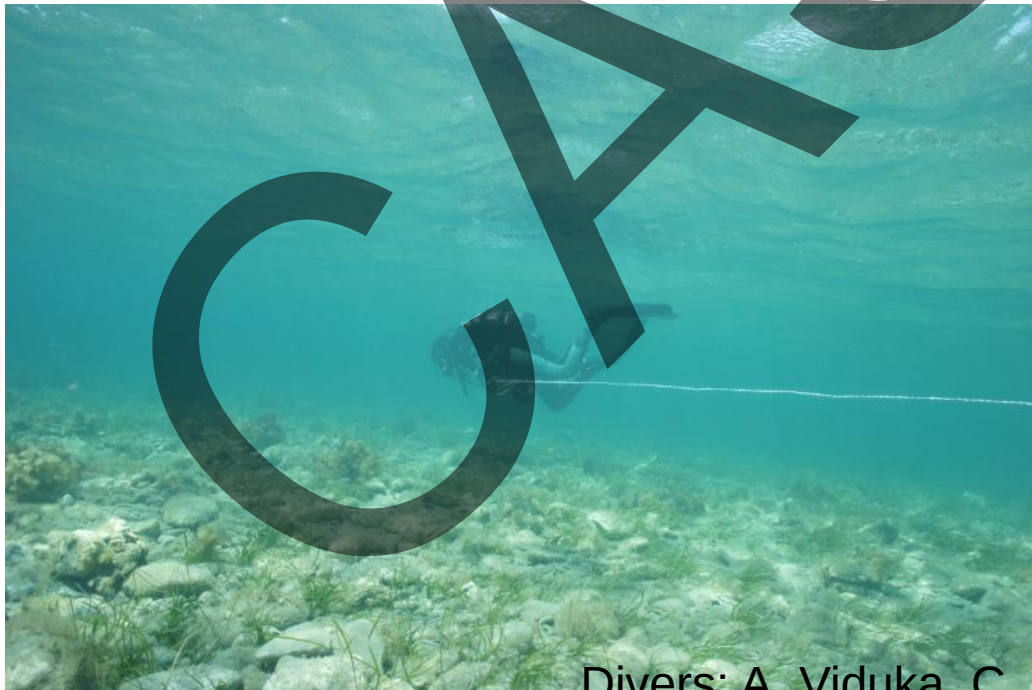


Tochni Lakkia actively eroding features; Top right: Note potential carbon









Divers: A. Viduka, C. Fulton, M. Michael, E. Karyda

# UNDERWATER SURVEY 2013-2014

Orange = Ceramics

Blue = Anchors in 2014

Red = Anchors not relocated in 2014


Green = Architectural blocks



### UWTochniSurvey

Records: 31 / 48 Total (Unsorted)




Layout: Dive Log | View As: [Table Icon] [List Icon] | Preview

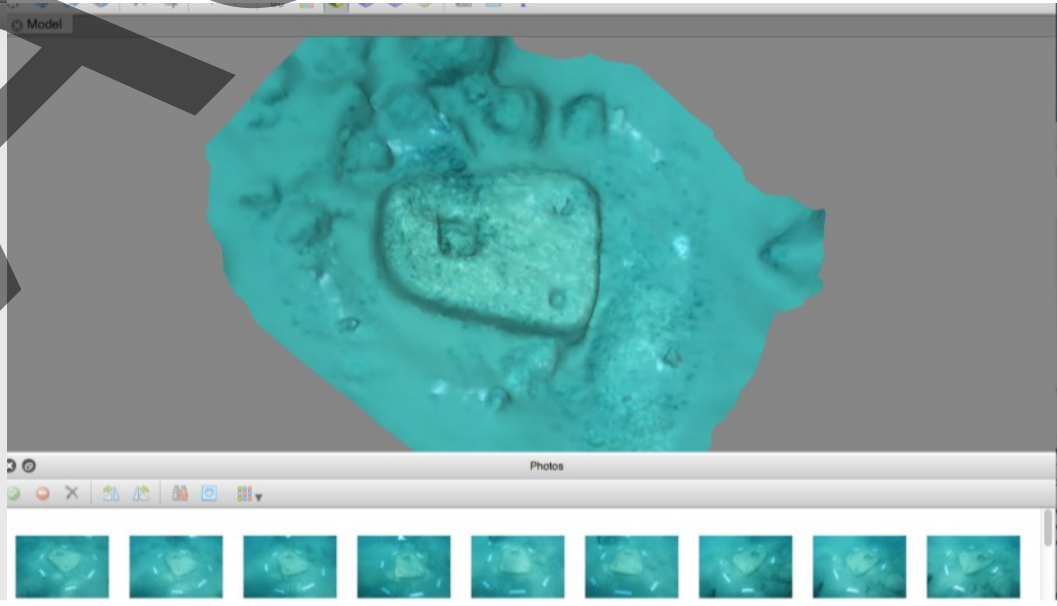
Dive Number	10	Divers	Andrew Viduka, Carrie Fulton
Date	6/15/2014	GPS track	Yes
Location		Offshore Distance	200m
Seafloor	predominantly sandy with occasional rocks and posidonia heads	Wind	0-1 knots SW
Max Depth	4m	Max Visibility	9m
Time In	8:50am	Current	1-2 knots westerly
Surface Time		Images	
Bottom Time	110 min	Images Collected	Yes
Purpose	systematic search for anchors	Dive Area	CASP 4
Sherds	2		
Notes	Two amphorae necks found in area west of the Russian's house; two anchors found and recorded (A3 and A4); strong westerly current made further survey difficult CASP14 Area 4 15 June		

### UW2014Anchors

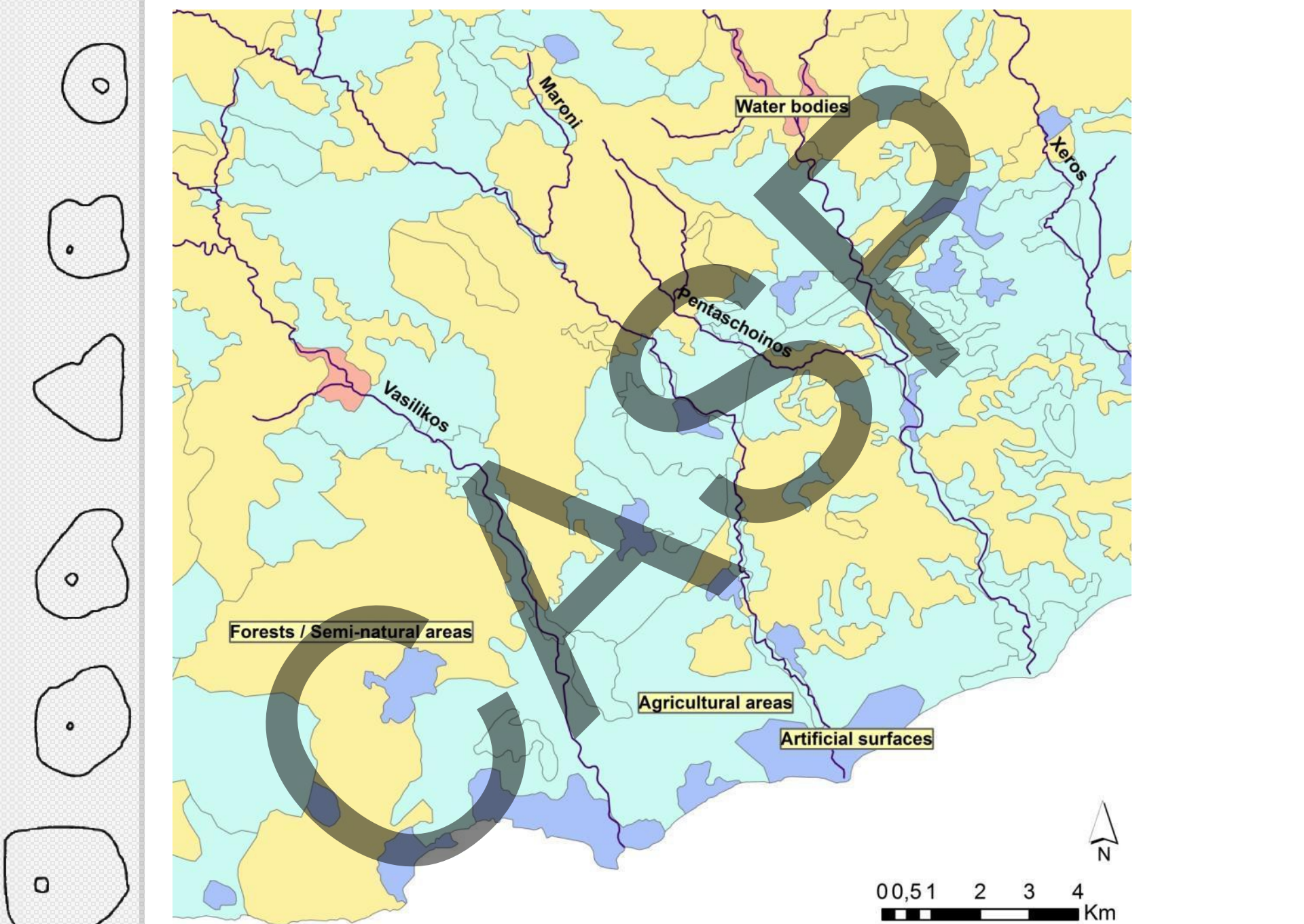
Records: 6 / 13 Found (Unsorted)

Layout: UW2014Anchors | View As: [Table Icon] [List Icon] | Preview

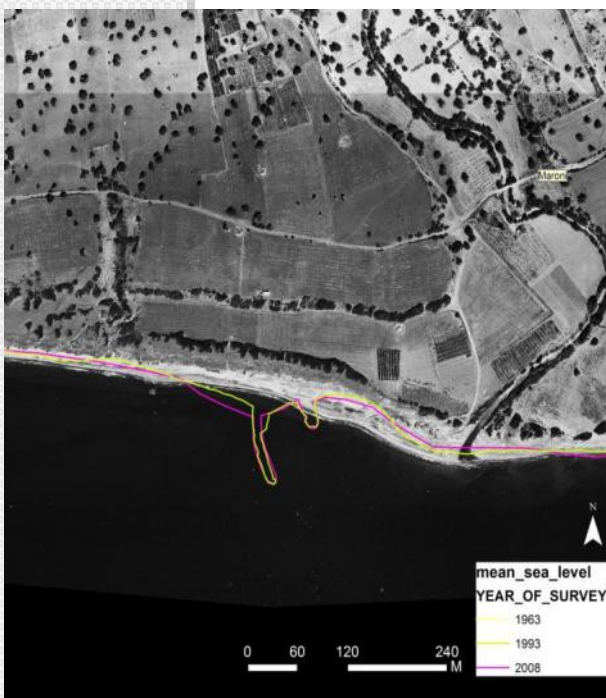
Anchor	6	Image	
GPS Waypoint	19	Sketch	
CASP Area	4	3D model	
Latitude (N)	34 44.296		
Longitude (E)	33 22.898		
Length in cm	47		
Width at hole in cm	24		
Width at base in cm	39		
Depth at base in cm	10		
Depth at top in cm	8		
Size of hole in cm	14 x 13		
Depth of Hole in cm	tru		
Depth of Anchor in m	4.5		
Substratum	sandy		
Hole	circular		



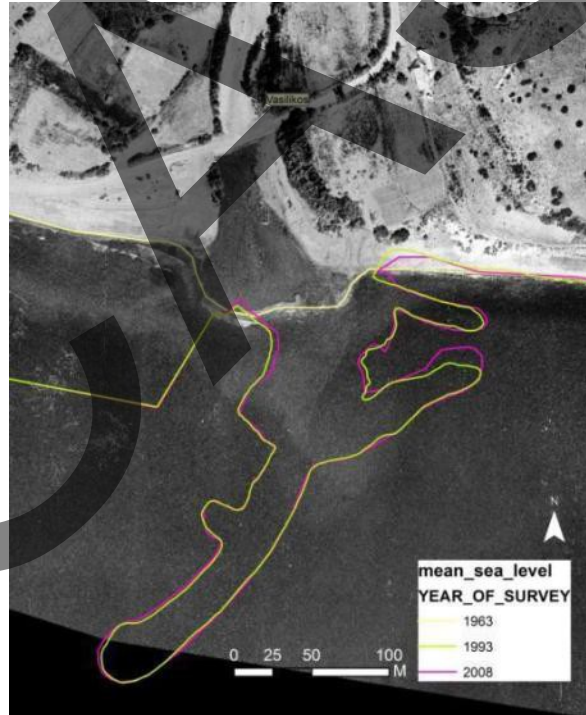
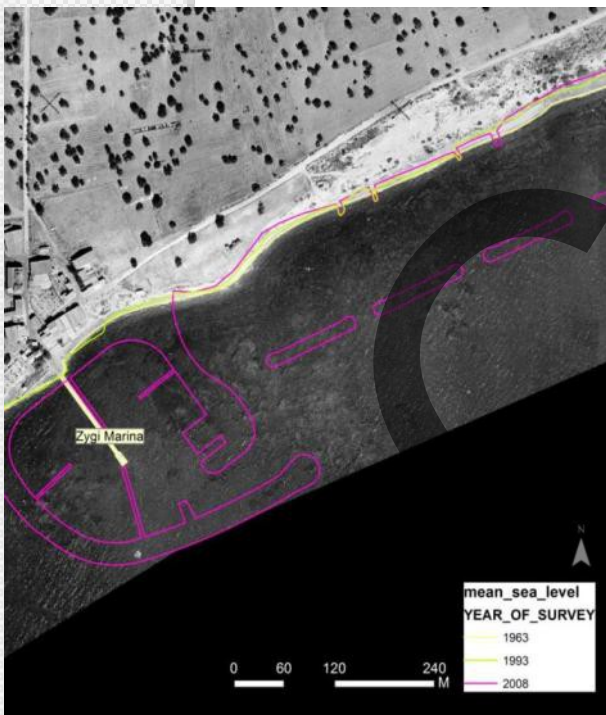
Produced and kindly provided by C. Fulton, June



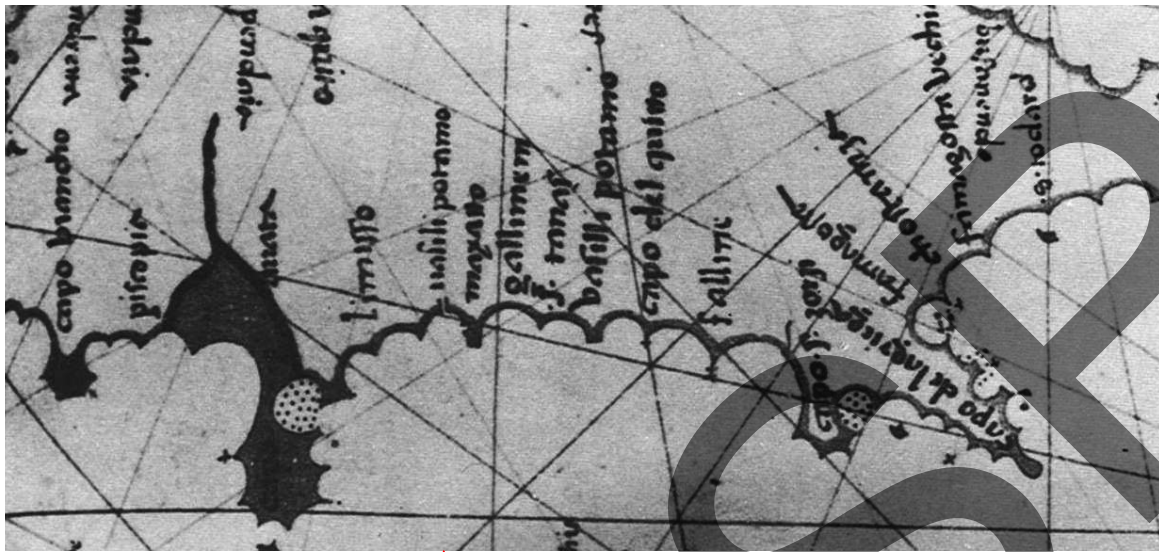
GIS Data kindly provided by the Department of Lands and Surveys, Republic of



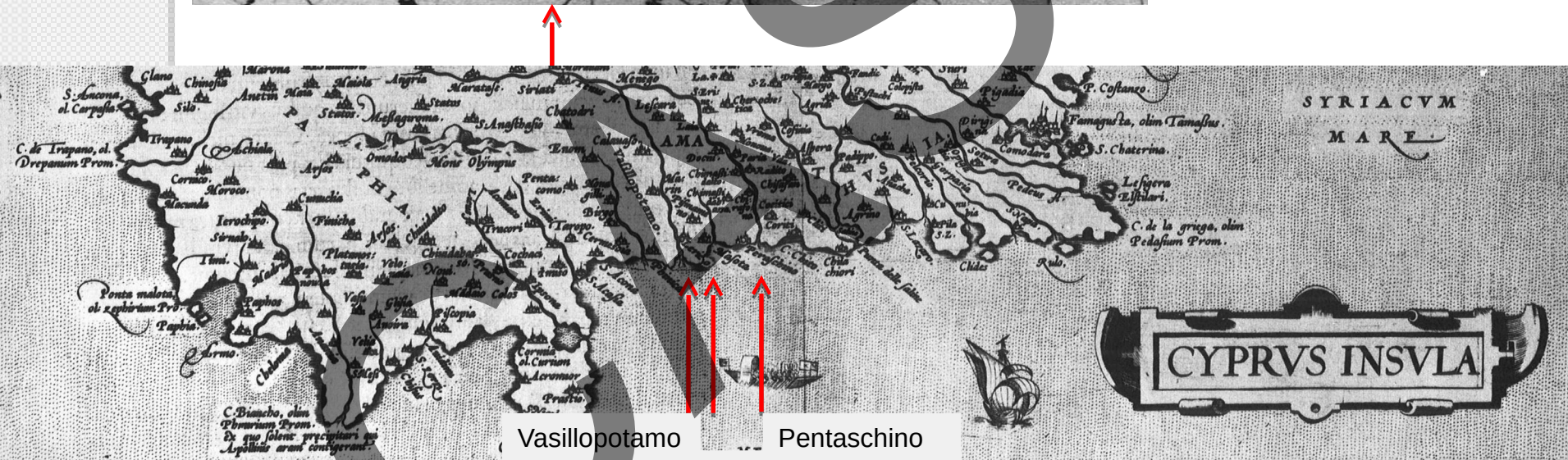
Name	Year	Status	Material	Quantity (m <sup>3</sup> )
Tilliria	1955-1965	Illegal	Sand	100000
Chrysochou Bay	1955-1970	Legal	Sand/gravel	300000
Akamas	1955-1965	Legal	Sand	10000
Pafos – N	1965-1990	Legal	Sand/gravel	1000000
Pafos – S	1965-1980	Legal	Sand/gravel	300000
Episkopi Bay	1975-1980	Illegal	Sand	10000
Cape Gata	?	Illegal	Sand/gravel	?
Limassol	1975	Legal	Sand	1000
Zygi-Kiti	1960-1980	Illegal	Sand/gravel	60000
Larnaca	1970-1980- today	Legal/illegal	Sand/gravel	20000



Special thanks to X. Loizides



**Βασιλοπόταμον**  
**Vasili Potamon**  
**Vasilopotamon**

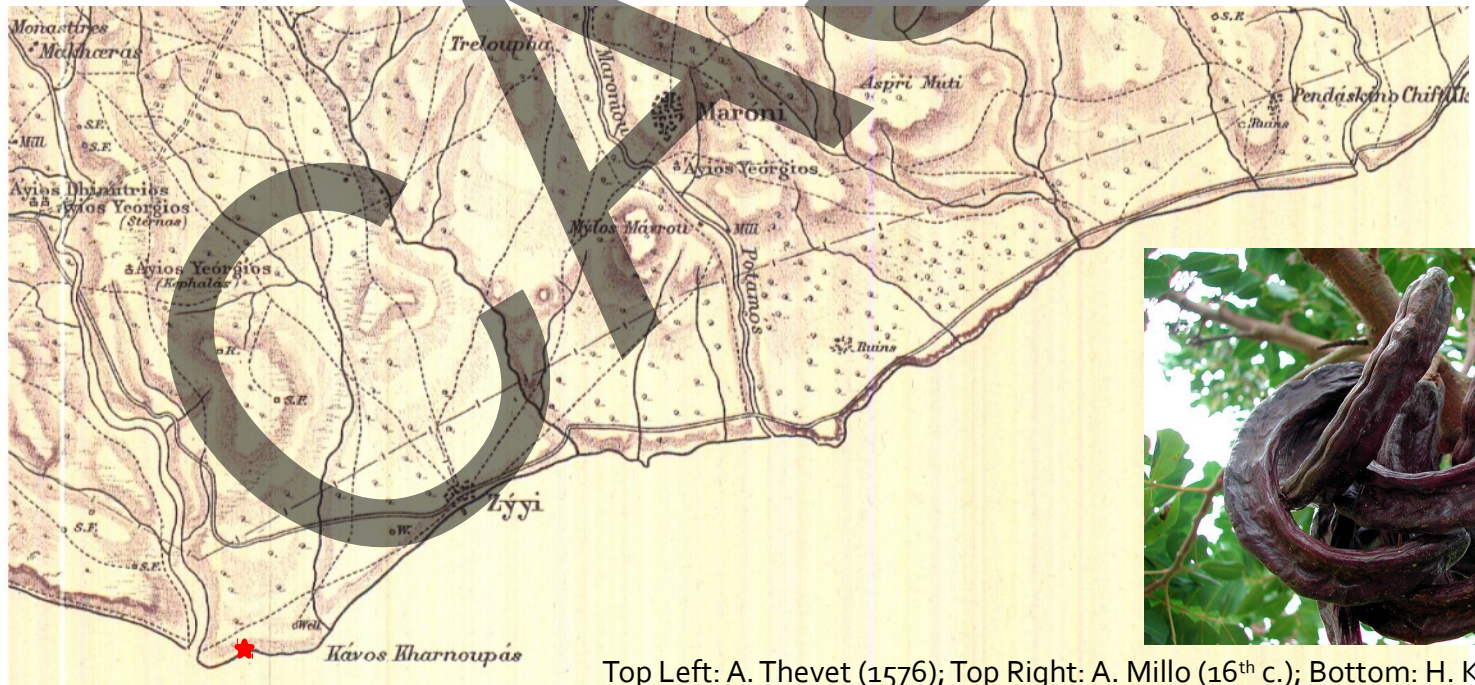
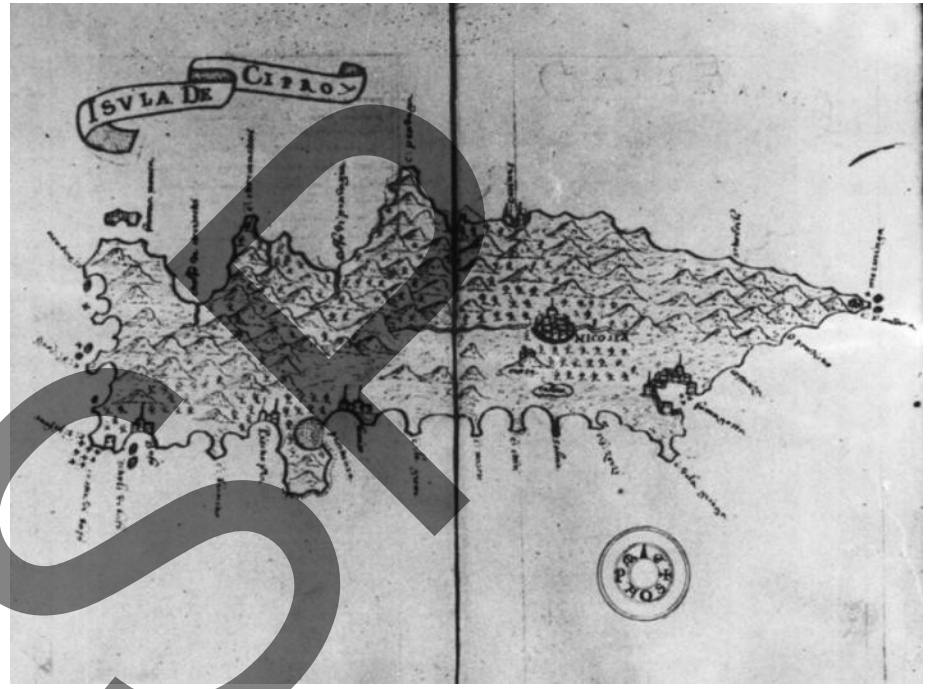
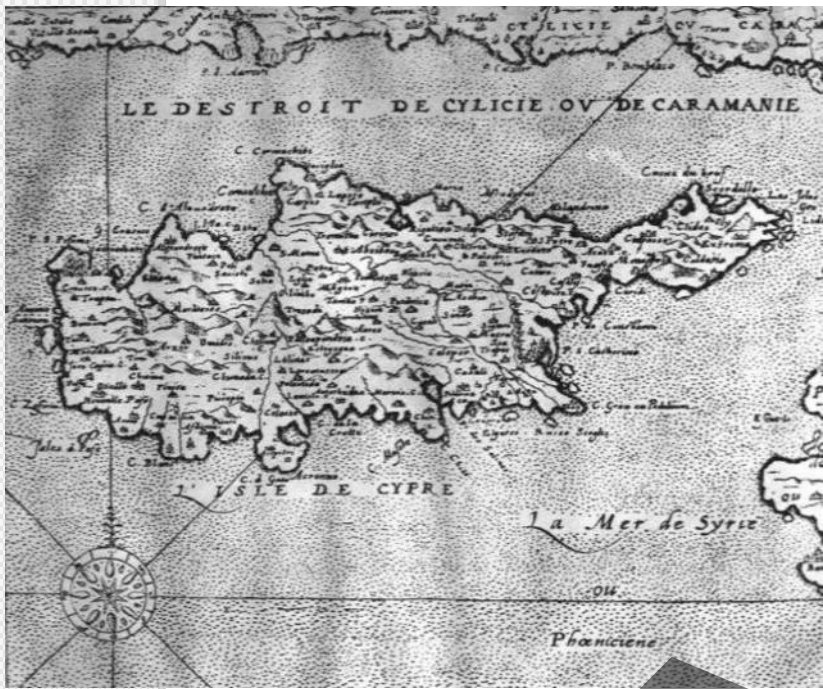


Vasillopotamo

Pentascino

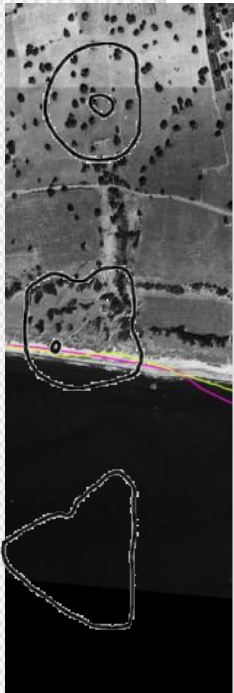
Pismasmenos  
 =  
 Psematismenos  
 (at Maroni river)

Top: Alvine Cexano (AD 1460); Bottom: Abraham Ortelius (16<sup>th</sup> century)



Top Left: A. Thevet (1576); Top Right: A. Millo (16<sup>th</sup> c.); Bottom: H. Kitchener (1885)





## What makes an antiquity worth protection?

- Excavated architecture is PROTECTED
- Known (recorded through survey) but unexcavated antiquities do not belong to the government
- Eroding antiquities contain architecture but they are NOT excavated. What is their status?

## What is a coast?

- Foreshore Protection Act = 100 yards from winter tide
- Town Planning and Housing Law = 100 metres from coastline
- WHAT IS COASTLINE?
- IS THE WINTER TIDE ESTIMATED?

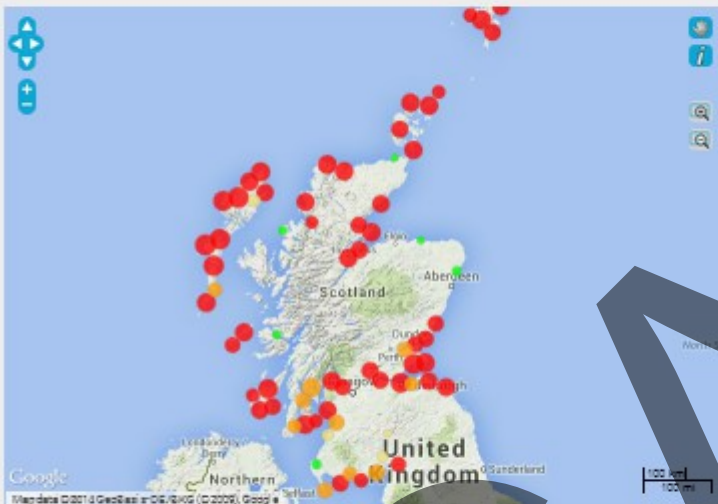
Land Archaeology → PROTECTED

Underwater Archaeology → PROTECTED

Eroding Coastal Archaeology → ???



### Sites at Risk



Map markers	Map controls
<span style="color: red;">●</span> high-priority site	pan around the map
<span style="color: orange;">●</span> medium-priority site	select a site and see further information
<span style="color: yellow;">●</span> low-priority site	zoom in; drag a box to define an area
<span style="color: green;">●</span> newly-recorded site	zoom out; drag a box to control extent

You can select a map view or an aerial photograph view - or both - in the Choose Map box.

If you know of a site that is not recorded or have found a potential new site whilst exploring the map, you can [add a new site](#).

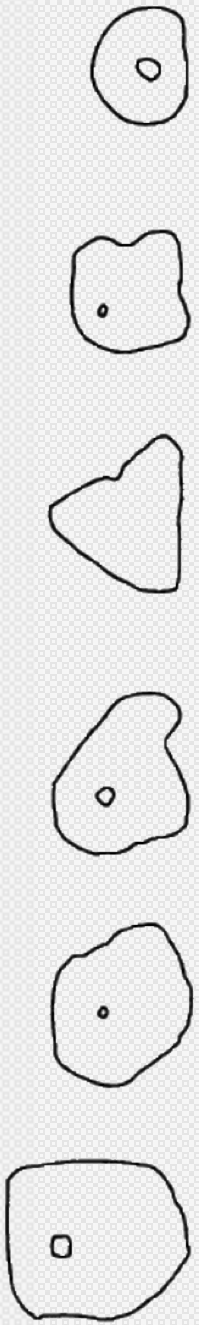
#### Choose map

- Google Physical
- Google Satellite
- Google Hybrid
- Bing Road Map
- Bing Satellite
- Bing Hybrid

#### Quick links

Submit Records









Geophysical survey by T. Urban



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S. Manning, C. Kearns, K. Fisher, T. Urban, A. Viduka



C. Fulton, A. Viduka, E. Karyda, M. Michael

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**IKUWA V**