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The Alexandria International Conference on Maritime and Underwater Archaeology

Celebrating the 20th Anniversary of the Central Department of Underwater Antiquities (CDUA)

31 October–2 November 2016

Bibliotheca Alexandrina Conference Center, Lecture Hall
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The ancient port of Marea-Philoxenite, at Lake Mareotis in Alexandria.

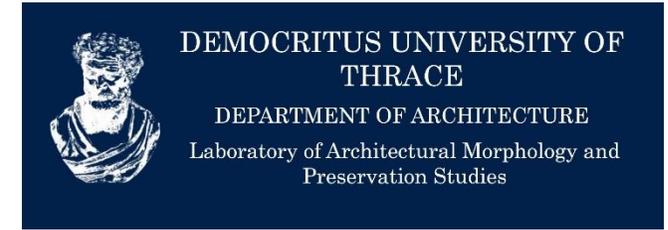


DEMOCRITUS UNIVERSITY OF
THRACE

DEPARTMENT OF ARCHITECTURE

Laboratory of Architectural Morphology and
Preservation Studies

Nikolaos A. Lianos
Prof. Arch. DUTH-GR



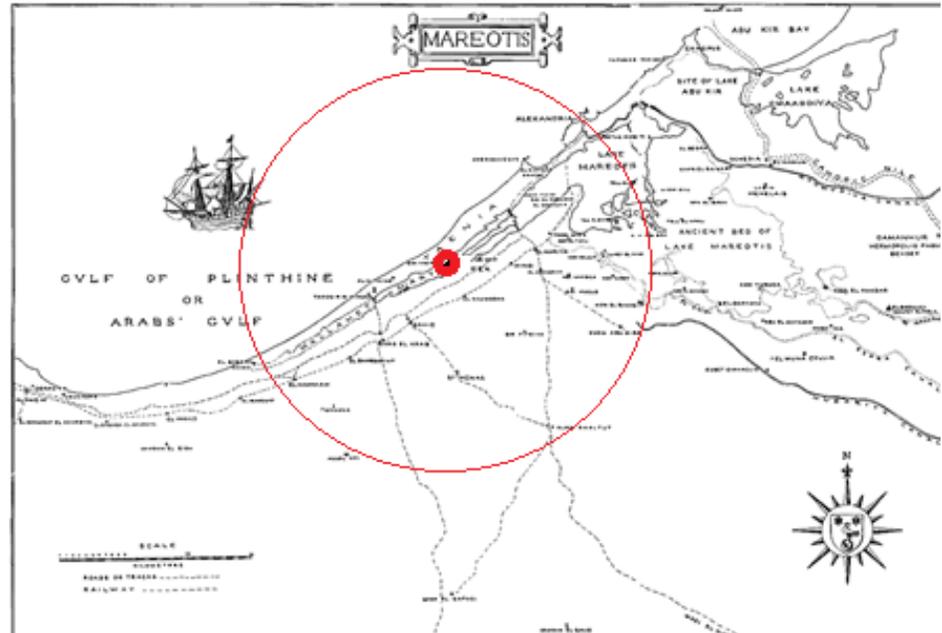
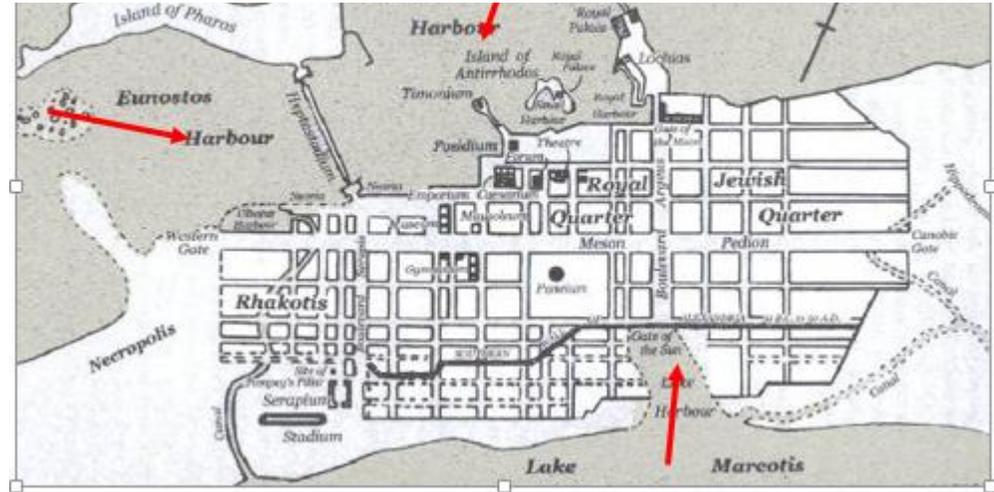
- During the years 2001 and 2002, a Greek-Egyptian archaeological mission was conducted in the area of the ancient port of Marea-Philoxenite, at Lake Mareotis in Alexandria.
 - It was a collaboration of the Democritus Un. GR and the Underwater Antiquities Department of Egypt (Alexandria)
 - Members of the team were:
 - Mohamed Mustafa Abdel Maguid,
 - Ibrahim Metually,
 - Abd El-Hamid Abd El-Magid,
 - Chrysiis Samiou and
 - Nikolaos Lianos,
- under the supervision of the director of the SDUA, Dr. Ibrahim Darwish.*

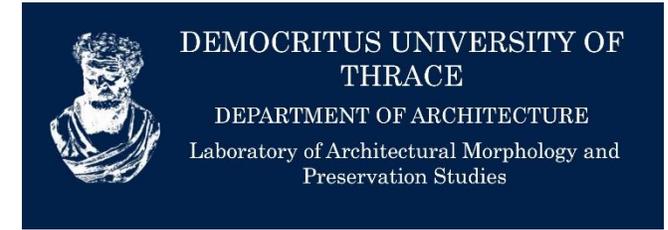


The permit was granted by the Supreme Archaeological Council of the Ministry of Culture-Egypt.

Lake Mariout, the historical background:

- Much of Alexandria's wealth and prosperity, were generated by trade through its important and complex harbor system, which included, not only the ports on the sea, **but also on Lake Mareotis**, to the south of the city.
- The city of Marea on the lake, once it was the regional capitol before Alexander founded Alexandria and the lake served as a source of food, a means of transportation, a place of pleasure and the town **was ideally positioned** as a way-stop for travelers going towards west and vice versa.
- Moreover, the shores of Lake Mareotis embraced major production centers for different industrial and agricultural products, such as glass, pottery, wine and oil, which contributed significantly to the economy of Alexandria and of Egypt as a whole.





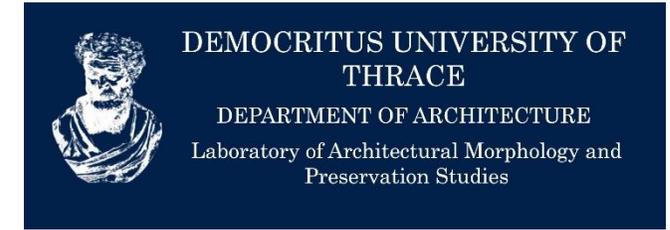
Lake Mariout, the historical background:

The name of Marea may be derived from the Pharaonic word *Per-Merit*, “the country by the lake”.

- Among the ancient writers, lake Mariut, is a very common subject. Her name was always referred in relation with the city of Alexandria, fact that demonstrate the importance of the the lake and the multiple activities around their shores.
- Herodotus, state that **“Marea was a post of Egyptian soldiers guarding the Libyan border”** during the time of King Psammetichus of the 26th Dynasty. Here, probably, was also the **main garrison town** in north-west Egypt in the time of the Pharaoh Apries and possibly later.
- Strabo states that **“...the [Alexandria’s] harbor on the lake [Mareotis] was richer than that on the sea”**. In Strabo, the name of the lake is given as Mareotis or Mareia limne.
- Pliny states that **“Lake Mareotis, which lies on the south side of the city, carries traffic from the interior by means of a canal from the Canopic mouth of the Nile”**.

Lake Mariout, the historical background:

- Philo (1st b.C) states that: “the best men from every quarter emigrate, as if to a **“colony of the Therapeutæ's”** fatherland, to a certain very **suitable spot**, which lies **above the lake Maria** upon a **low hill**, excellently situated on account of its security and the mildness of the atmosphere.”
- Philo mention that: “the most virtuous of the Hebrews assembled from all parts of the world, and settled in a tract of country situated **on a hill near Lake Mareotis**, for the purpose of living as philosophers.
- Athanasius (select works and letters): “ The letter [against Arius], is signed by the sixteen presbyters of Alexandria, and the twenty-four deacons, as well as by **eighteen presbyters and twenty deacons of the Mareotis**.
- Liberius (4rd c.), mention that: **“of all those who sailed to Mareotis”**, at a conference between Liberius, Pope of Rome, and the Emperor Constantius (The Ecclesiastical History of Theodoret).



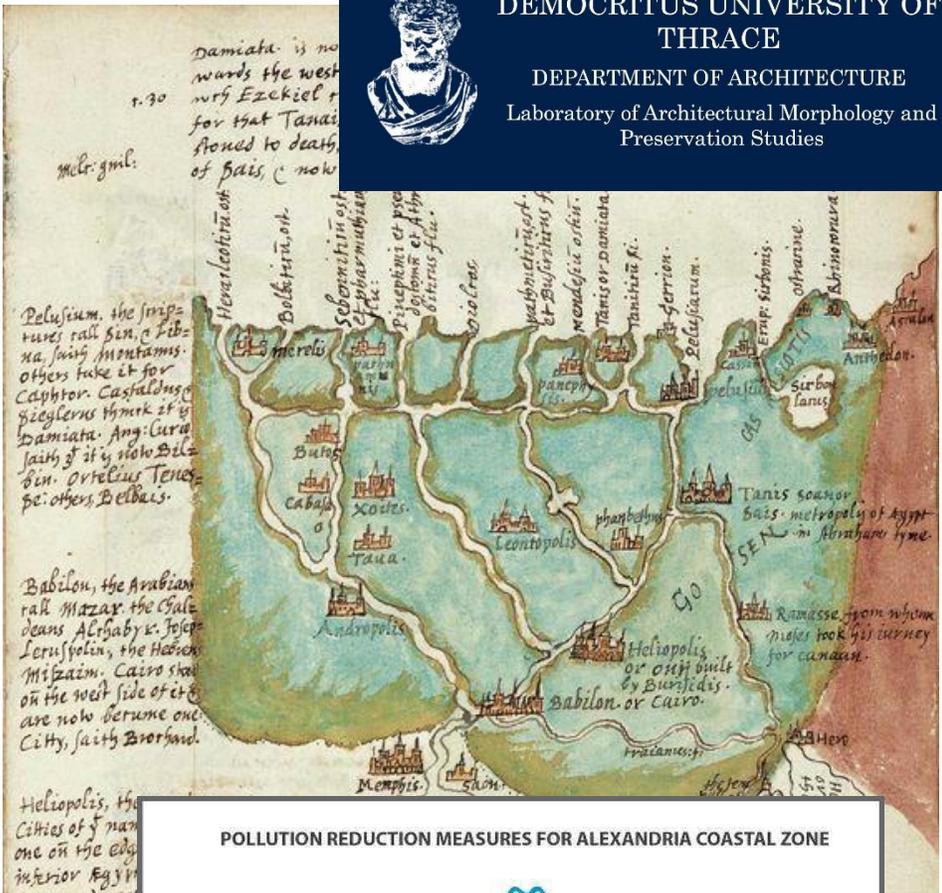
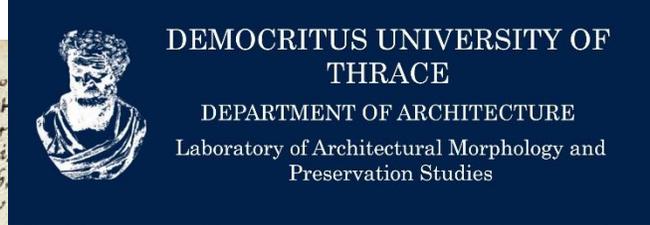
Lake Mariout, the environmental background:

Lake Mariout is different from the other Northern lakes in that it is a “closed” lake.

It is also in a unique region characterized by the presence of limestone barriers, so the lake, is impounded between one of those barriers and the Nile delta.

Lake Mariout was fed by the Canopic branch, as was Lake Edku to the east of it, but in the 12th century that branch filled with silt and the connection of the Lake with the Nile was cut.





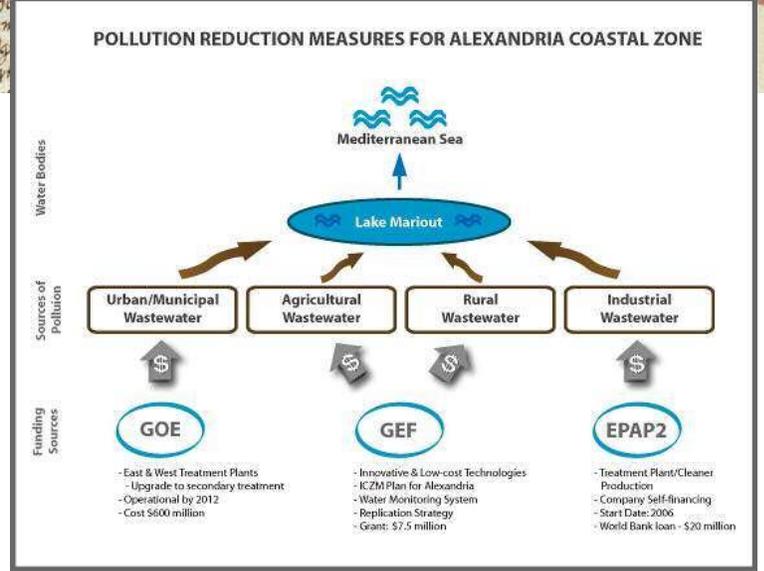
Lake Mariout, the environment background.

Moreover, Lake Mariout has been subject to major modifications, most of which are either direct human interventions or indirectly result from such interventions.

Human activities have put the lake to a wide variety of uses, some of which are benign, including fishing.

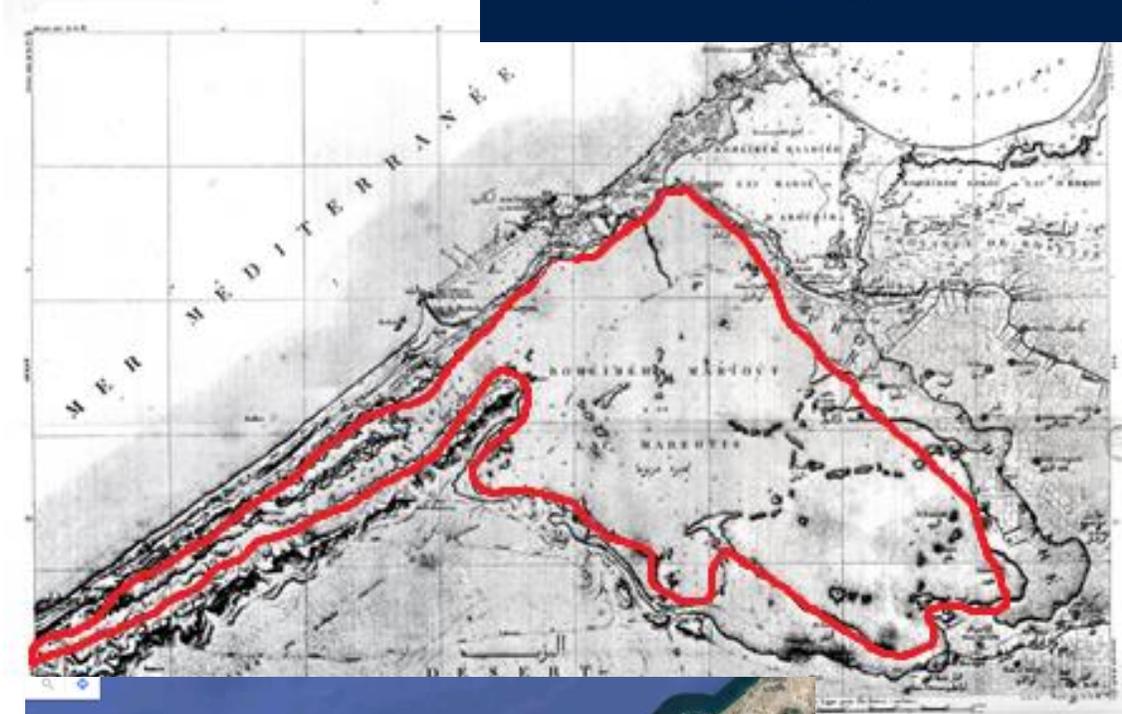
However, these uses are not always consistent as the Lake has also been used for discharging of primary treated sewage and industrial wastes.

The lake environment was continuously subjected to quality Degradation, due to human pressure as well as **land reclamation** reducing the area of the Lake.



Lake Mariout, the environment background:

- In 1801, the original area was probably in excess of 700 km²,
- At the beginning of the 20th century, the lake area covered 200 km²,
- At the beginning of the 21st century it covers only about 50 km².



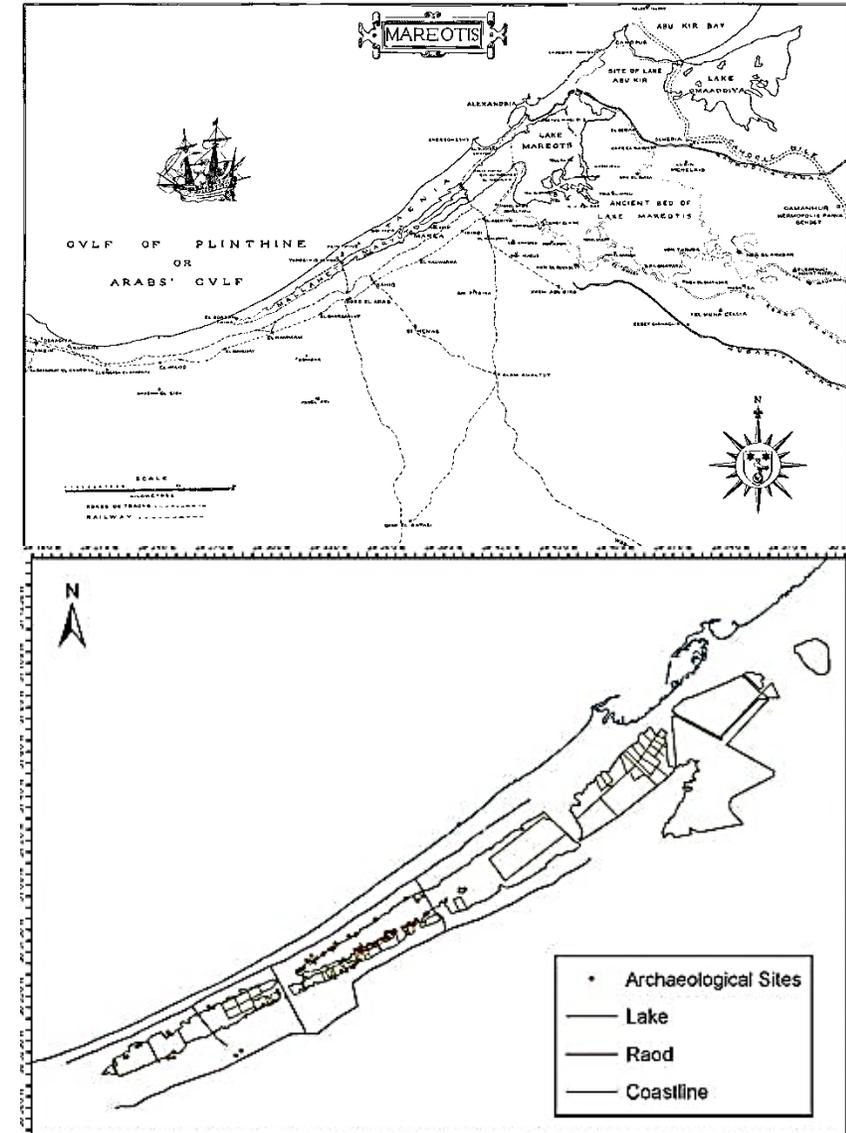
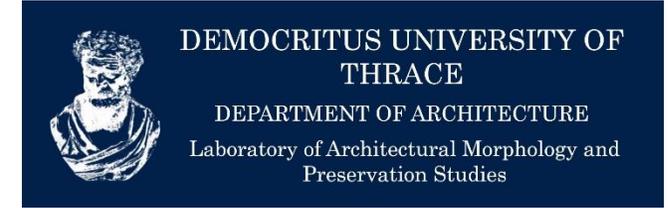


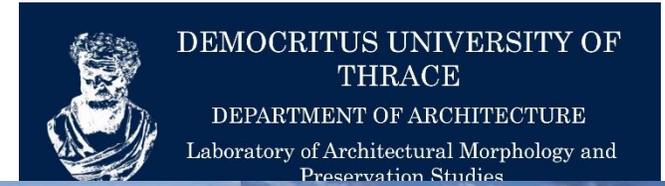
Lake Mariout, the archaeological background:

In spite of that, towards **west**, we can suggest that the lake reflects its **original shape**, which runs parallel to the “tainia” shaped part of land that separates the lake from the Mediterranean sea.

Archaeological and geological surveys at the western area of Mareotis, has been ongoing for the last decades; Some of them were focused to a specific area, like Marea or Toposiris Magna, and others referred to an holistic large scale documentation of the area.

In both cases, several activities were identified, in which, all mankind products were included (agriculture, industry, etc.). Among them, vinicultura, wine production, amphora kiln structures, granaries, oil press, water irrigation systems, bath constructions, maritime structures, such as ports, moles and quays, in addition to what appear to be water-front warehouses and storage facilities.

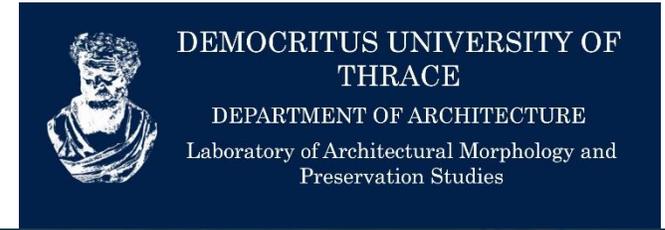
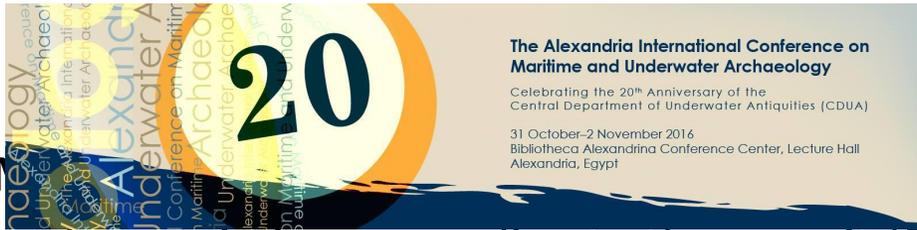




• The Ports of Lake Mareotis.

- Due to the particular inland water conditions, there are several types of anchorage and ports around the coasts of Marea.
- Two of them, the ports of Marea and Taposiris Magna, although of a different period and function, are the most complete and important.
- Both of them, are associated with local human settlements and that characterized them as ports.
- According to the historical and archaeological evidence that we have until now, these two port cities, where the most important in antiquity, along the shores of Lake Mareotis.





- The aim of our mission, according to the permit (SCA), was the survey, the excavation and the study of this unique inland waters, port facilities.
- The site of Marea or Philoxenites, is located about 45 km West of Alexandria and 15 km East of Taposiris Magna, on the southern shore of the lake.
- El-Falaki first equated the settlement and associated the entire complex (city and port), as the town of Marea, the capital of the Mareotic region.
- Recent excavation demonstrate the existence of structures from the 1st and 2nd c. AD., but Marea's great development is dated during the Byzantine period, when St. Mena's monastery was considered center of healing and was extremely popular destination for both foreign and Egyptian pilgrims.



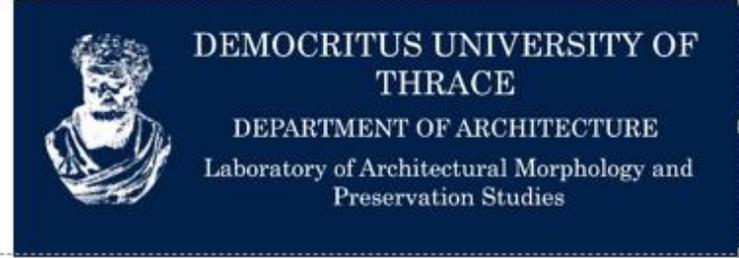
The Marea/Philoxenites and its port facilities.

The most impressive archaeological remains in area, that characterize as a trade mark the hole city-port, are the artificial moles, that mainly belongs to a system of artificial port, without breakwaters.

The existing port facilities at Marea, is a different type of the lake port of Alexandria's southern port of Kybotos, which according to Strabo's description was an "*oriktòs limen*". The biggest moles are extend towards North and divide the waterfront area into three main basins: the eastern, the central and western.

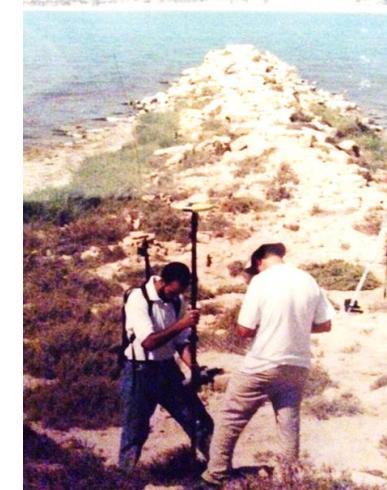
A smaller one is located southern of the "island" and several other facilities, were found all around the area, like slipway ramps for boats, docs facilities etc.





The Marea/Philoxenites and its port facilities.

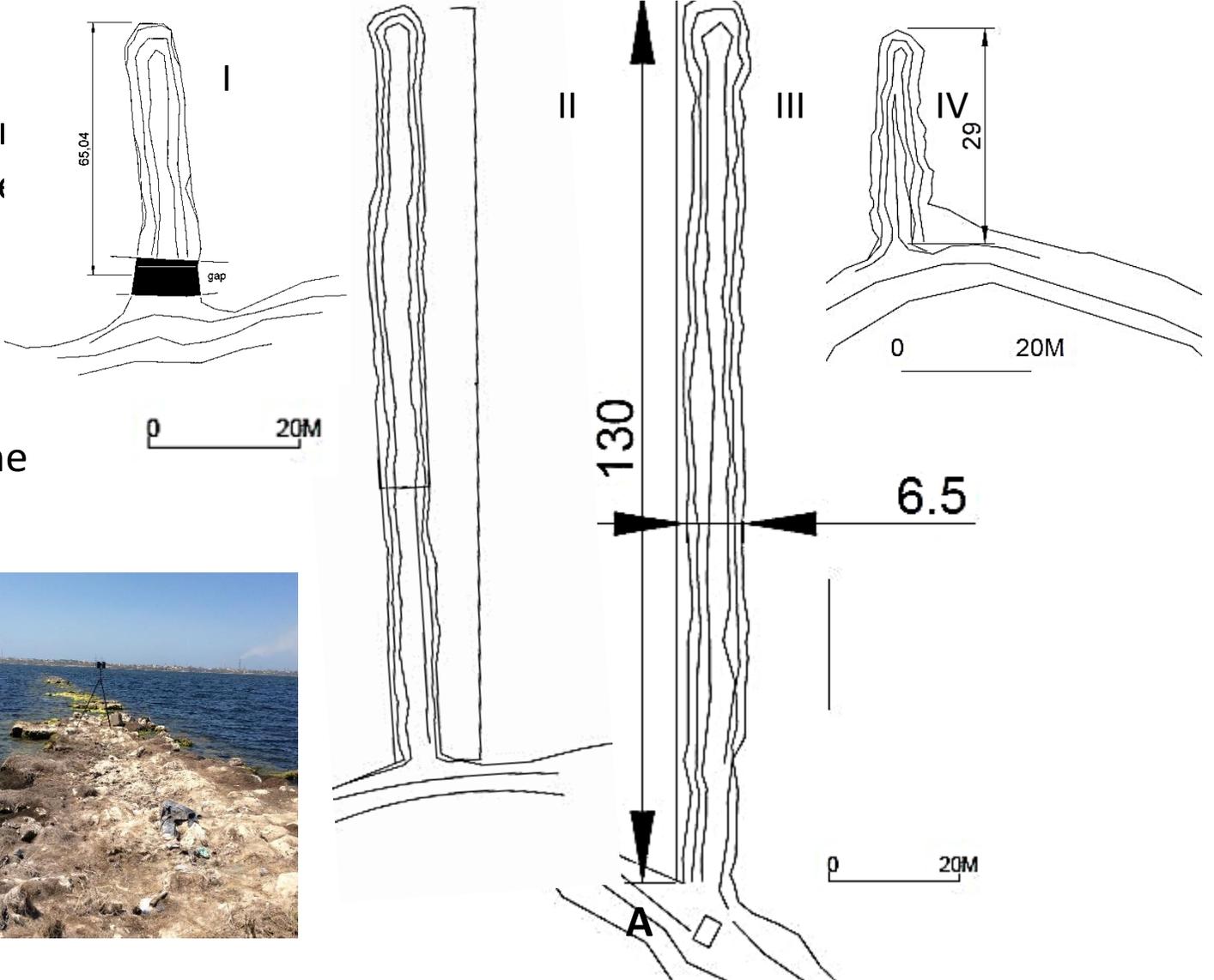
- The primary aim of our research during the **first campaign** was to establish an accurate **topographical map** of the whole area, plus to execute a detailed recognition and a photographic documentation of the whole port area.
- The four moles are extending respectively: mole I, 64 meters, mole II, 109 meters, mole III, 150 meters, and mole IV, 29 meters.
- Two of the moles (I and II), are starting from the coast, one from the promontory (mole III) and one (mole IV), from the northern tip of the island.
- The distances between the moles are respectively: mole I to mole II 289 meters, mole II to mole III 400 meters, mole III to mole IV 438 meters.
- In relation to moles I and II there are inland facilities like roads (with partially preserved pavement), shops, remains of houses, public baths, etc,. All of them are traced according to the orthocanonic system, like Alexandria.



The Marea/Philoxenites and its port facilities.

The impressive length of the moles I, II, and III can be justified not only by the need to accommodate the crowded port, but also to insure the landing of the ships even when the water level was low.

The mole IV is the smaller one, ~40 meters long and 4.5m wide. Starts from the northern tip of the Island and probably were used for local needs of the island.



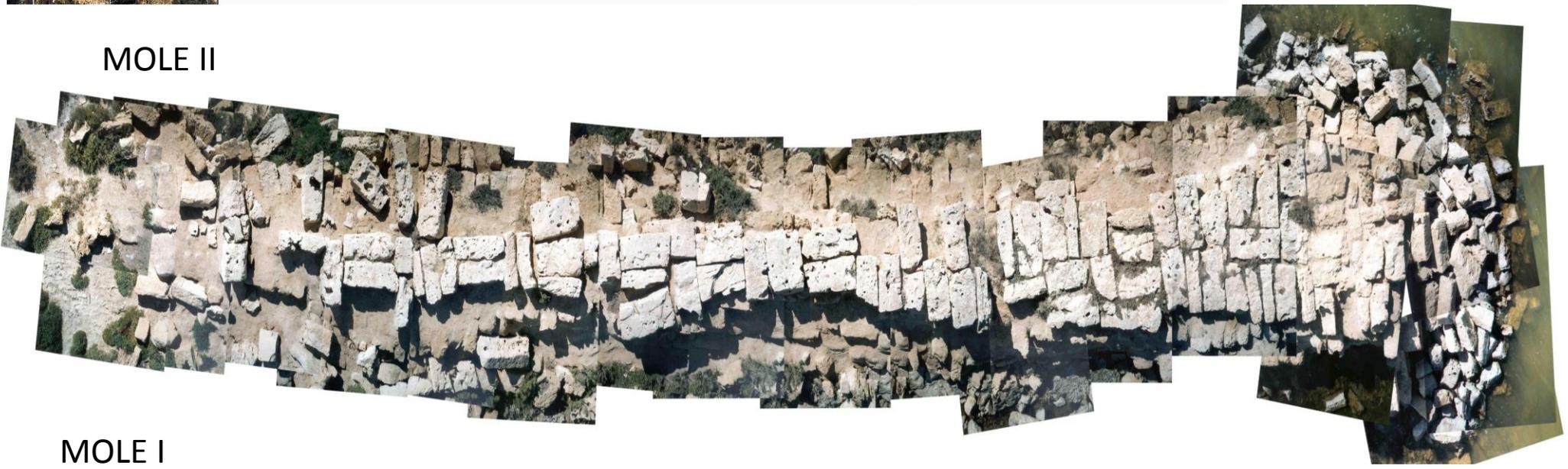
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MOLE II



MOLE I

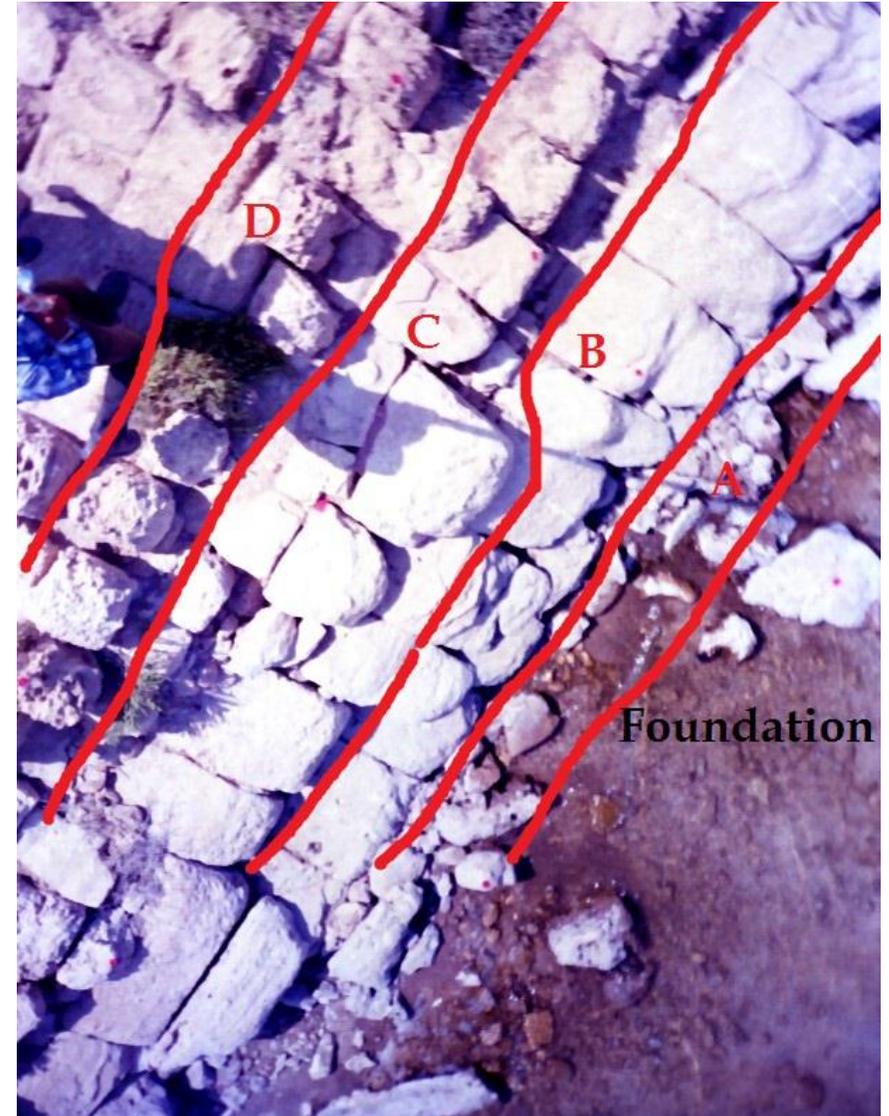
The moles were constructed with square blocks of local soft limestone, but in the most of them, the foundations are from granite.

The width of the moles is defined by the outer blocks, which were placed as headers and define the outline of the moles. The upper courses between them, was filled with smaller stones (p.e, mole III) and the characteristic Byzantine red mortar. In certain areas, we found also in mortar, ceramic pieces and coins!

The upper level was covered with square limestone blocks, which form the final level of the mole.

Most of the upper level blocks collapsed into the water and the original final level, can be visible only in the central parts of the moles.

Almost six courses of stones can be distinguish, although the missing parts (MOLE I).



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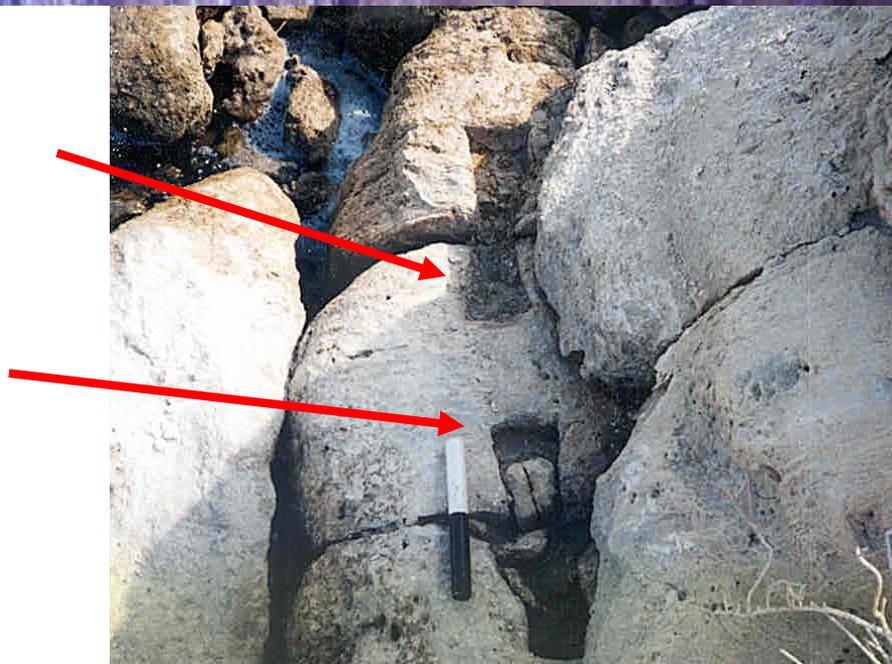
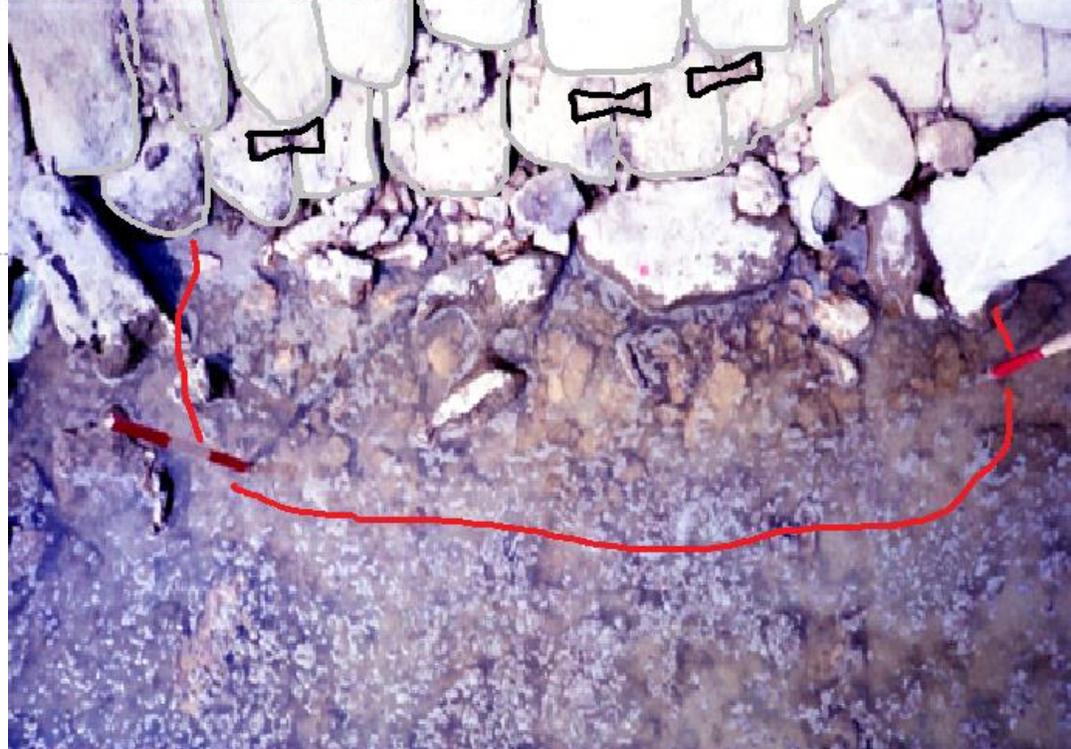
mortars





The Marea/Philoxenites exvavation campaign.

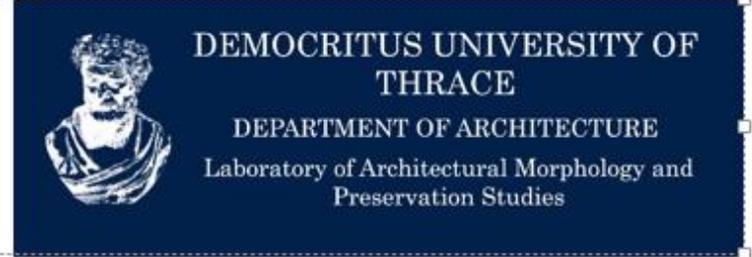
- During the second campaign 2002, contemporaneously with the survey, we started the **excavation trenches**, along the sides of the mole III.
- The aim was to establish an exact date of the construction of the moles and probably, to establish an earlier chronology for the entire area.
- Two trenches were decided to start at the area of mole III, next to the site where the metal swallowtail clamps were used occasionally to bond the ashlar together.
- Most of the sherds that was found, belongs to the early Byzantine period





Excavation trenches mole III





Near the area of the promontory and before mole III, a causeway begins connecting the island to the mainland. The foundations of a solid gate, which probably guarded the entrance from the mole, were still visible in 2002 but not during the Laser Scanner of the area in 2016.



Basement of a superstructure on the mole (light house?)





Facilities mooring of ships in dock.



Lighthouse basement?



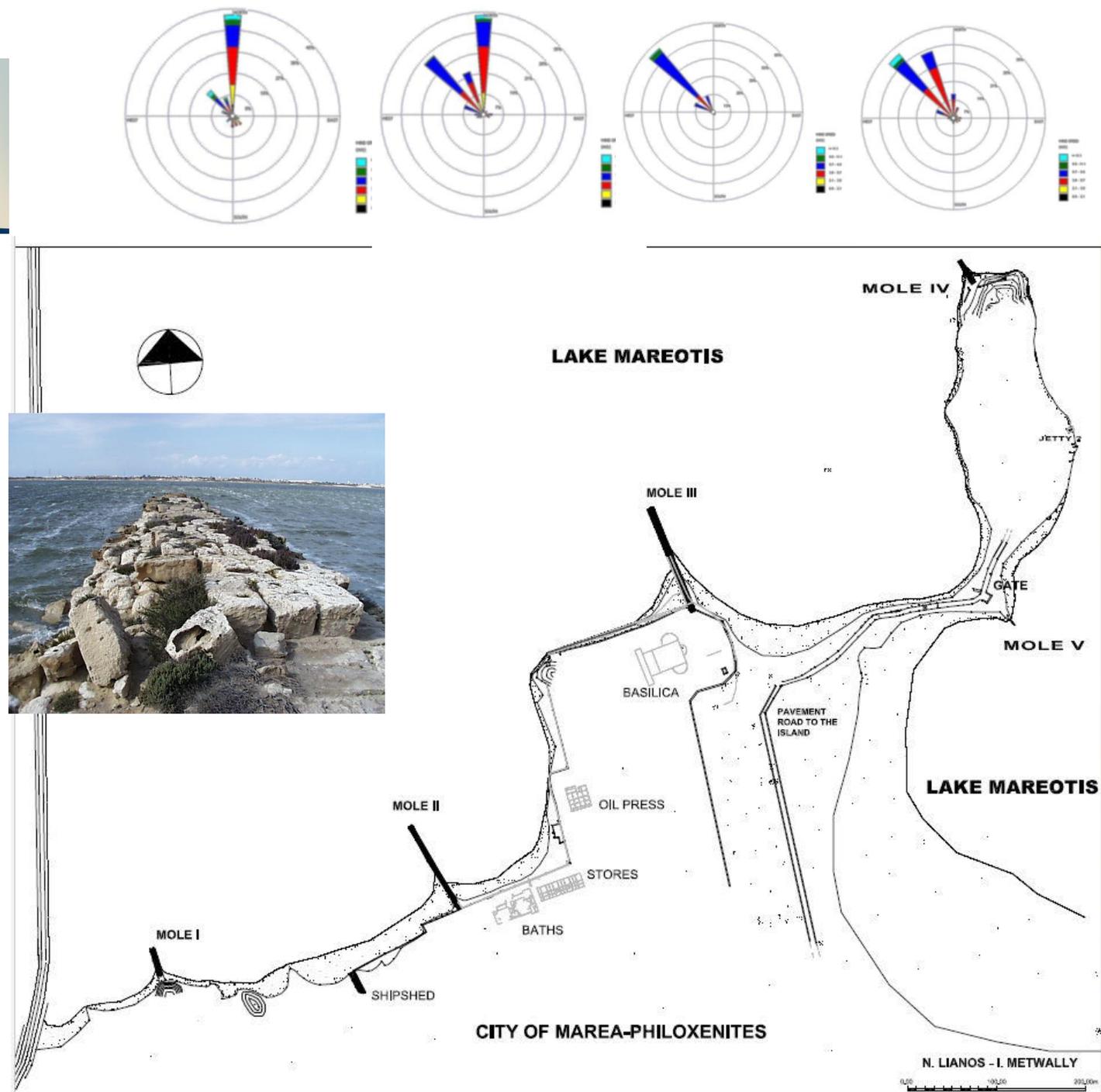
CONCLUSIONS

The best-preserved port on Lake Mareotis is a unique example of an extensive land water port construction.

In order to understand the design principles of this port, we should also take in consideration the prevailing winds in the area: the moles were constructed to face directly the N and NW dominant winds in the area.

These winds and low ripple of the lake, assist in navigation from and to Alexandria as well as a safe anchorage at the moles of Marea.

For that reasons no breakwater needed.



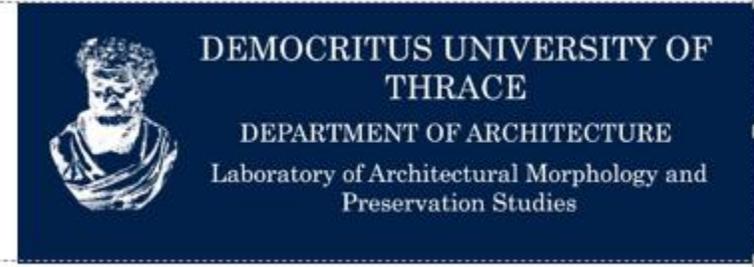


Marea 2004

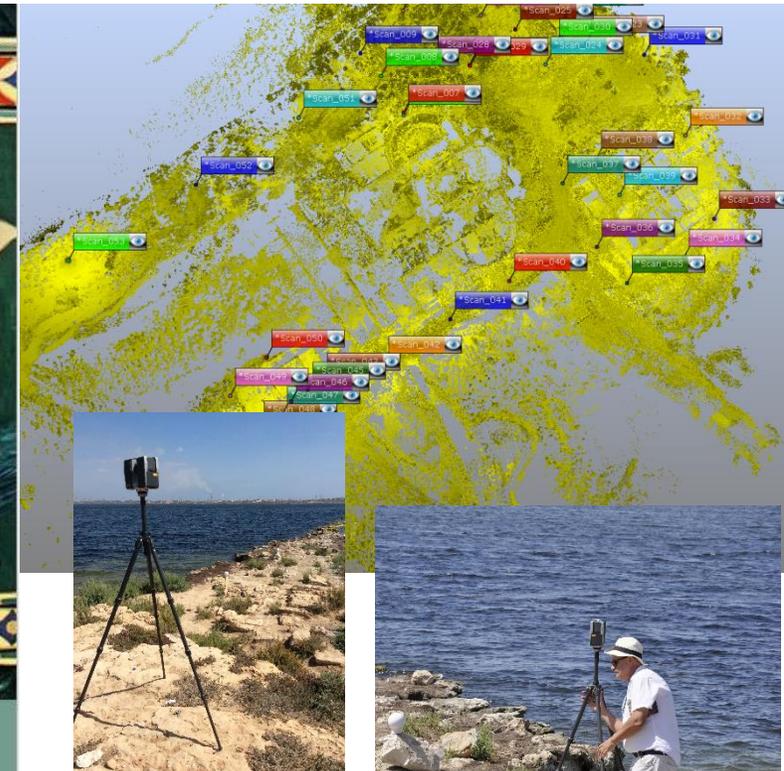


Marea 2016

Marea 2016



- According to our survey, the different construction phases of the moles and the several construction techniques applied, demonstrate the use of the port, probably from the Late-Roman periods up to 17th c.
- Our next aim is to combine all the data of our 2001-2 survey with the recent 3D TLS survey that we did through the TEMPUS-Vircult program and to established a 3D reconstruction of the port





Ψηφιδωτό opus sectile v. 16 από πίσω.

