

### Méditerranée

Revue géographique des pays méditerranéens / Journal of Mediterranean geography

104 | 2005

Environnements littoraux méditerranéens, héritages et mobilité

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#### Electronic version

URL: https://journals.openedition.org/mediterranee/2002 DOI: 10.4000/mediterranee.2002 ISSN: 1760-8538

## Publisher

Presses Universitaires de Provence

#### Printed version

Date of publication: 1 April 2005 Number of pages: 129-131 ISSN: 0025-8296

Brought to you by Aix-Marseille Université (AMU)



#### Electronic reference

Nick Marriner and Christophe Morhange, "Save Tyre", *Méditerranée* [Online], 104 | 2005, Online since 02 February 2009, connection on 10 December 2022. URL: http://journals.openedition.org/mediterranee/2002; DOI: https://doi.org/10.4000/mediterranee.2002

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Méditerranée N° 1.2 - 2005

## **Save Tyre**

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Nick MARRINER\*
Christophe MORHANGE\*

Research commissioned by CEDRE, CPM UNESCO and the AIST has yielded extensive datasets for the evolution of Tyre's palaeoenvironments during the past 6000 years (MARRINER et al., 2004a; MARRINER et al., accepted; MARRINER et al., in press BAAL; MARRINER and MORHANGE, in press JCH). The work reveals a rich cultural heritage and in this short note we combine these geoarchaeological data to propose a map of the most sensitive archaeological sites to be protected. The geomorphology of the Tyrian coastline has changed

significantly since the Bronze Age, and many of the most important maritime areas are presently buried beneath thick tracts of sediment. Figures 1 and 2 outline the sectors to be urgently protected.

#### 1. Tyre's ancient harbour areas

# 1.1. The southern or so-called «Egyptian» harbour

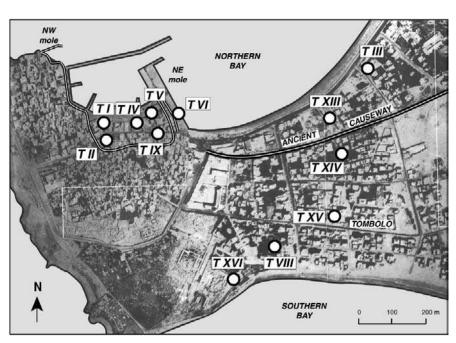


FIG. 1 - MAXIMUM EXTENSION OF TYRE'S MBA NORTHERN HARBOUR (base from 1950s aerial photograph).

Diving surveys undertaken by EL AMOURI et al. (in press) reveal that Poidebard's Egyptian harbour is in fact a drowned sector of the ancient city, ca. 3 meters below present sea-level. The zone comprises numerous submerged walls, partially identified by POIDEBARD (1939) and later FROST (1971), which appear completely out of context and inconsistent with a harbour basin. Sunken quarries attest to a relative sea-level rise of ca. 2.5-3.5 m since antiquity. Town planners must therefore take into consideration the likely existence of archaeological structures down to a depth of at least 5 m all around the Tyrian coast.

<sup>\*</sup> IUF, CEREGE, Université Aix-Marseille. nick.marriner@wanadoo.fr; morhange@cerege.fr

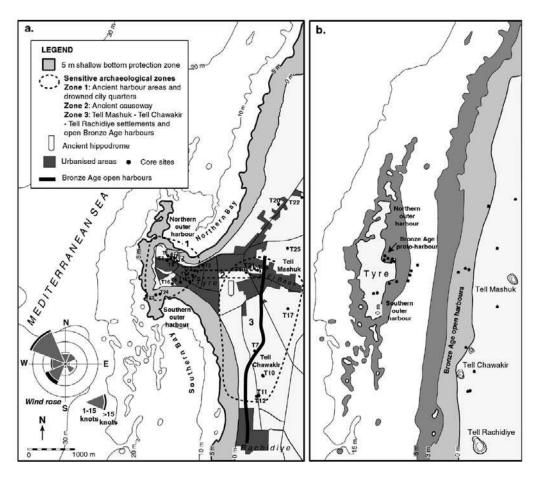


FIG. 2 - (A) ARCHAEOLOGICAL ZONES TO PROTECT; (B) RECONSTRUCTED PALAEOBATHYMETRY OF TYRE AROUND 6000 YEARS BP.

# 1.2. The northern or so-called «Sidonian» harbour

Geoarchaeological work in the Sidonian harbour reveals a former basin approximately twice as large as present (MARRINER *et al.*, 2004b). The Medieval and Modern city centres are actually built upon the heart of the ancient harbour, and we recommend this zone be protected, notably from underground foundation works which risk damaging historical remains. The soft sediment fill means that archaeological vestiges, principally harbourworks and wrecks, are particularly rich in this area. Underwater surveys undertaken by NOUREDDINE and HELOU (in press) north of the Sidonian harbour, have reconfirmed the existence of a mole, initially discovered by POIDEBARD (1939).

#### 1.3. Eastern harbour

Reinterpretation of the southern harbour as urban quarters has pushed us to investigate the eastern fringe of Tyre island as a possible location for the city's Egyptian harbour. Two cores from this area have allowed us to broadly reconstruct the island's physiography in antiquity. Core T-XVI, to the south of the Roman columns, reveals ancient infill aimed at extending the island into the sea, and is an early example of a polder. We found 7.5 m of ceramic rich fill overlying shallow bottom marine sediments. Although the existence of a protected artificial harbour in this sector is yet to be unequivocally demonstrated, high-resolution laboratory analyses of core

T-VIII have revealed beds of fine-grained sands consistent with a sheltered zone south-east of Tyre island during antiquity. Archaeological efforts to rediscover Tyre's lost second harbour should therefore concentrate on this well-protected flank.

#### 1.4. Outer harbour

Diving surveys around the northern and southern outer harbours have yet to yield evidence for archaeological structures such as quarries and harbourworks as on Zire island, Sidon. The work has shown that Poidebard's moles (sectors O-P1-P2 and Q-R-S-T) are in fact natural reefs (EL AMOURI *et al.*, in press). We suggest these areas be classed as a natural reserve, as ancient wrecks are almost certain to be found in proximity.

#### 2. Tyre's tombolo (Hamra Street)

Research has revealed great archaeological diversity on the tombolo, notably between El Bass and the ancient island, an ancient axis which superposes roadways from different periods in antiquity (Hellenistic, Roman, Byzantine and Islamic). Cores drilled in this area reveal thick deposits of antique infill and human settlement layers rich in ceramics. A policy of protection in this area should seek to integrate ancient ruins into the present day

urban fabric of Tyre, linking the current archaeological sites of El-Bass and the ancient island.

# 3. Tell Mashuk – Tell Chawakir – Tell Rachidiye's open Bronze Age harbours

Coring and subsequent laboratory analyses of sediments around Tell Mashuk, Tell Chawakir and Tell Rachidiye have facilitated the reconstruction of Tyre's coastline before the formation of the tombolo. El Bass, the seaward littoral strip at the base of Tell Mashuk, evolved rapidly from a lagoon environment to a marsh at the end of the post-glacial sea-level rise around 6000 BP. It later infilled with dune sediments and formed a proto-tombolo or salient which prograded towards Tyre island.

Geoarchaeological work in the area around Tell Chawakir reveals a long history of human occupation between the Bronze Age to Byzantine periods. During the Bronze Age, the stratigraphy is concomitant with long beaches which served as hauling zones for the settlers of Palaeo-Tyre. Boats were pulled onto the beach faces, and the area holds exceptional possibilities for the discovery of well-preserved wrecks. Fundamental to our understanding of Bronze Age Tyre, this non-urbanised zone is presently under threat from tourist development and must be protected.

#### Conclusion

Tyre is a uniquely rich archaeological city, which should imperatively avoid the mistakes made at other sites around the circum Mediterranean coastline. The ancient harbour areas hold rich archaeological potential and should urgently be preserved and protected by Tyre's policy makers. We suggest that a 500 m protective perimeter be established around these ancient basins. To further ensure the protection of Tyre's maritime archaeology, we also strongly advocate a protective belt be instigated on shallow marine bottoms (<5 m) along the coastline between Tell Rachidiye to the south and Abassiye in the north. This should include the interdiction of boats, whose anchors can damage drowned archaeological structures and facilitate the looting of ancient finds. Politicians and town planners should focus on promoting durable cultural tourism around Tyre's historical heritage. Current geoarchaeological work and UNESCO/AIST funded radiocarbon dating is looking to further deepen our knowledge and chronology of the zones to be protected (MORHANGE, in press).

**Acknowledgements**: The authors wish to thank the AIST (M. CHALABI) for generously funding the radiocarbon dates. The team would also like to thank the DGA. N. MARRINER benefited from an Entente Cordiale student scholarship (2004 5052).

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