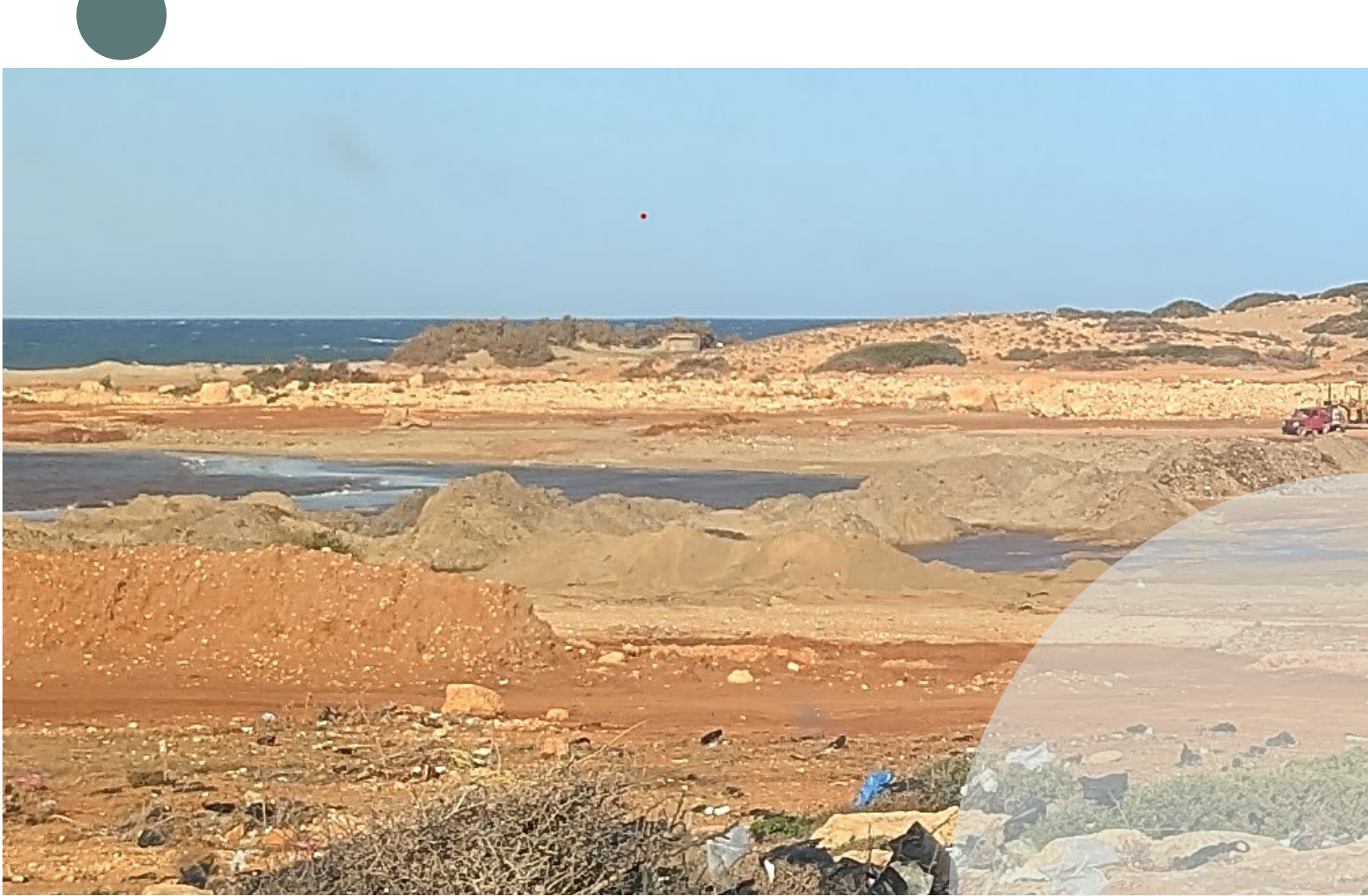




Anthropogenic Threats

MARITIME HERITAGE: ANTHROPOGENIC THREATS AND CHALLENGES

This section examines the primary threats and damages facing maritime heritage caused by human activity. Some of these threats directly impact maritime archaeological sites and are often highlighted in environmental impact assessments. However, indirect threats, which can be equally destructive to the maritime environment, often receive less attention.

We can broadly categorise anthropogenic threats into three groups, regardless of their physical proximity to archaeological sites:

1. Marine industry
2. General development
3. Exploration by non-specialists, including those involved in illegal activities like looting or recreational "explorers" drawn to treasure hunting.



As the number of people living along the coast grows, there is an increasing need to document, monitor, protect, and preserve coastal heritage sites. This demographic shift puts additional strain on efforts to maintain these important cultural and historical resources along coastlines.

The modern cornice of Alexandria in Egypt.

Frequently, a lack of, or outdated, legislation that protects underwater and coastal sites enables humans to access and damage this type of site. Furthermore, a rise in recreational diving activities, advances in diving gear and deep-sea diving equipment mean that sites are more accessible and more vulnerable to being disturbed and looted. These factors, combined with, oftentimes, limited in-country expertise and resources, contribute directly and indirectly to the deterioration of maritime cultural heritage.

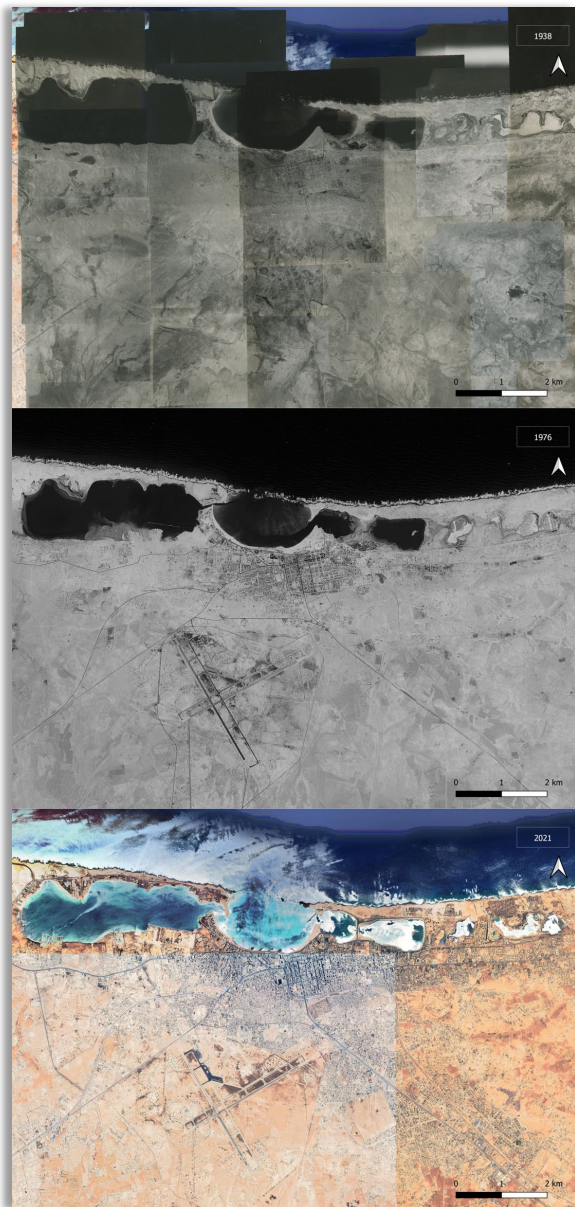
COASTAL AND OFFSHORE DEVELOPMENT

Maritime heritage appears to be a low priority in coastal and offshore development plans across the MENA region. This is evident in various projects, including harbor and marina construction, tourism initiatives (a major revenue source for the area), and land reclamation and dredging activities.

Although environmental impact and archaeological assessments sometimes precede coastal development, these projects still contribute to long-term challenges. While coastal development stimulates local economies and creates employment opportunities for nearby residents, it also attracts people from surrounding areas. This influx leads to population growth in already densely populated coastal regions, increasing demands for housing, industrial and tourism development, and economic investment opportunities.



Sur Ash Sharqiyah in Oman is a city with a deep & diverse maritime history with established links with East Africa (6th c.CE) and subsequently with India. Imagery from the 1960s and 2020 demonstrates extensive changes on the coastline & maritime cultural heritage of Sur (Top image Corona, bottom image Google Earth Pro).



Marsa Matruh on the aerial photograph from 1938 (Royal Air Force, sourced and digitised by the EAMENA project) and satellite imagery from 1976 (KH-9 satellite image, data available from the U.S. Geological Survey) and 2021, Marsa Matruh developed from a small settlement into a substantial town within a short period of time, with a large airport and extensive port developments clearly visible (Basemap: ©Digital Globe via Google Earth, Ray and Nikolaus 2022)

In addition to changing the coastal environment, population growth and urban expansion have resulted in the pollution and disturbance of the seabed's sedimentary, plant, and animal balance. Furthermore, this has made previously inaccessible areas vulnerable to amateur "explorers" and treasure hunters, who disturb crucial contexts necessary for archaeological analysis.

One example comes from the North-West coast of Egypt. Here the development of tourist complexes over the last two decades has changed the coastal landscape dramatically. Hotels, leisure complexes and the necessary infrastructure have turned this previously sparsely inhabited coastal strip into an almost continuous line of buildings and roads stretching from Alexandria towards Al Alamain and Marsa Matruh. Archaeological remains that have been there, are to a large extent, now lost.

Marsa Matruh itself once was a Ptolemaic and later Roman-period town with a big harbour within its natural lagoons. Now very little remains of Marsa Matruh's past, as the fast-growing town that is centred around tourism has swallowed up the majority of the remains from the past. The lagoon and harbour itself have been dredged, and new harbour installations have probably destroyed, or covered, what was left of the ancient harbour of Marsa Matruh.

OFFSHORE RENEWABLES, OIL & GAS, WINDFARMS

Underwater cultural heritage faces potential risks from the oil and gas sector as well as offshore renewable and windfarms. This is because of seabed exploration, drilling, and the construction or expansion of oil platforms and pipelines or other offshore renewable energy constructions. While oil and gas corporations are required to collaborate with qualified marine archaeologists to conduct comprehensive surveys prior to any invasive activities, the standard of work and adherence to underwater cultural heritage best practices vary significantly among different companies and nations.



*Bouri Oil rig off the coast of Libya, considered the largest producing oil field in the Mediterranean.
Image: © Wikimedia*

In 2023 there were 13 oil rigs of the coast of Libya. While no major incidence has happened yet, an oil spill could have terrible consequences for the coastal and submerged archaeological sites. Washed-up oil would, for instance, be soaked up by the porous stone, damage that would be impossible to repair and clean.

COMMERCIAL FISHING & TRAWLING

The balance of marine ecosystems has been disrupted by increased commercial fishing activities and the extraction of marine resources, which in turn has negatively impacted the conservation of underwater archaeological sites. These activities also indirectly influence coastal topography, leading to problems such as intensified shoreline erosion. While erosion is often perceived as a natural process, studies in coastal geomorphology indicate that human-induced effects are more significant and widespread than previously believed.

Commercial fishing and trawling practices have detrimental effects beyond disrupting the seabed's ecological balance; they also pose a threat to underwater archaeological sites. Evidence of this damage can be observed in the form of scars

on the ocean floor or at specific sites, dislodging artifacts and damaging shipwrecks.

CASE STUDY: ILLEGAL DYNAMITE FISHING

Dynamite fishing, or blast fishing, is an (often) illegal method of capturing fish by detonating explosives (TNT) in the water. Unfortunately, blast fishing is not an uncommon practice and the impacts on the environment are concerning. Not only does it kill all fish and other animals that might be there indiscriminately, but it can also cause damage to the seabed and any archaeological remains that may be there. Indeed, studies have shown that this method can increase the corrosion of shipwrecks.

LOOTING AND TREASURE HUNTING

Lastly, we must address the issues of looting and other disturbances to archaeological contexts. In many countries, beaches are considered public property, allowing casual explorers to interact with cultural artifacts in non-scientific ways. While some communities may view systematic archaeological research as disconnected from local interests, it's crucial to emphasize that professional excavations can reveal the most detailed chronological and stratigraphic information about a site. Additionally, it's essential to involve local communities in archaeological projects in ways that satisfy their curiosity about their heritage (such as viewing or handling old objects) while educating them about the importance of preserving archaeological contexts and narratives. This approach can help discourage treasure hunting activities and promote a better understanding of scientific archaeological practices.

Disclaimer: The materials and information presented in these lectures have been compiled from a range of academic sources, which are listed in the Bibliography and Further Reading section of this course.