**Catalogue of ancient ports & harbours in the Black Sea area
Catalogue des abris & ports antiques en Mer Noire**

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**Abstract –** A ‘harbour’ is a place where ships can seek shelter. The concept of ‘shelter’ has to include anchorages, landing places on beaches, and ports with infrastructure. Even though ancient seafarers could sail 50 to 100 nautical miles in a day, it was important to know where they could find safe shelter within two to three hours of navigation, i.e. only approx. 10 miles. For safe sailing, a total of approx. 300 shelters was hence required around the Black Sea and Azov Sea. This paper presents a list and map of over 400 known ancient ports and harbours in the Black Sea, Azov Sea, Marmara Sea and Bosphorus.

**Résumé** – Un ‘havre’ est un endroit où les bateaux peuvent trouver un abri. Dans le concept d’abri il faut inclure les mouillages, les plages sur lesquelles les bateaux peuvent être halés et les ports avec des infrastructures. Même si les marins de l’antiquité pouvaient parcourir 50 à 100 miles nautiques par jour, il était important de connaitre les abris sûrs dans un rayon de deux à trois heures de navigation ; c’est-à-dire environ 10 miles nautiques. Un total d’environ 300 abris était donc nécessaire pour une navigation sûre autour de la Mer Noire et de la Mer d’Azov. Cet article présente une liste et une carte de plus de 400 abris et ports antiques dans la région de la Mer Noire, de la Mer d’Azov, de la Mer Marmara et du Bosphore.

A ‘harbour’ is a place where ships can seek shelter. The concept of ‘shelter’ has to include anchorages, landing places on beaches, and ports including structures such as access channels, breakwaters, jetties, landing stages, quays, warehouses for storing commodities and equipment, shipsheds and slipways. Shelters of interest include all places which may have been used by seafarers sailing over long distances. This means that shelters for the likes of local fishermen, who may have landed their boats on the beach in front of their homes, are of less interest. In another limitation, only maritime harbours and some river ports that could be reached by deep-sea ships are considered.

Fig. 1 shows over 400 known ancient ports and harbours in the Black Sea area. Many of them are known from ancient authors such as Arrian, Pliny and Strabo. Other ports were identified in later centuries by modern archaeologists, and most of them are shown in the Barrington Atlas.

Ancient seafarers often used beaches to land their ships on. It may be noted that a 37 m military trireme with 170 ‘strong’ oarsmen could be hauled onto the beach if the slope was mild enough, say no more than 1:7 (about 15%), which was also a maximum for slipways (Blackman, 2013). This requires sand of a certain grain size (Komar, 1998): the very fine sands (or silts) found in large deltas yield a very flat slope which keeps ships far from land. Conversely, a shingle beach has a steep slope that is dangerous for landing ships on.

During military expeditions, 200 people had to be fed on board triremes. It was impossible for masters to fill their ships with tons of food. In the absence of ports, ship pilots had to find beaches with a degree of shelter where drinking water could be found, and river estuaries could provide both. The Stadiasmus is an example of a collection of such knowledge, and can be considered the ancestor of medieval portolans and modern nautical instructions.

Commercial ships obviously preferred sheltered creeks with clear landmarks on shore (such as a typical mountain). Many shelters were needed, as seafarers often followed the coast, using safe shelters to stop overnight and escape bad weather. Even though they could sail 50 to 100 nautical miles in a day, it was important to know where they could find safe shelter within two to three hours of navigation; i.e. only approx. 10 miles. With the length of the Black Sea and Azov Sea coast being approx. 5800 km (acc. to Black Sea NGO Network, [bsnn.org/black\_sea.html](file:///D%3A%5CArthur%5CArch%C3%A9ologie%5CArcheo%5CEtudes%5CBlackSeaPorts%5Cbsnn.org%5Cblack_sea.html)), i.e. a little over 3000 nautical miles, as an order of magnitude they would hence have required a total of 300 shelters around the Black Sea and Azov Sea, which is fairly close to the 273 places found so far.

Many of these sheltered creeks still exist today, but large changes have occurred in some places:

* ‘tectonic’ movements, which explain why some ancient ports are buried under modern ports;
* seismic events inducing tsunamis, which devastated adjacent coastal plains;
* a ‘eustatic’ sea level rise of 0.30 to 0.50 m over the past 2000 years (see Nic Flemming’s work and Morhange, 2014);
* river estuaries usually tend to silt up, as rivers carry most of the materials that create beaches, and this explains why some ancient ports are now so far from the sea or have simply filled up with sand;
* in some large cities the ‘old port’ has been reclaimed to create a new waterfront area;
* beaches are subject to sedimentation and erosion by wave action, and the latter explains why some ancient ports were lost to the sea.

Even though the total number of shelters is fairly close to a safe number of one every 10 nautical miles, it can be seen from Fig. 1 that many ancient harbours probably remain to be found on the northern coasts of the Black Sea and in the Azov Sea, in Ukraine and in Russia.

**BIO**

The author of the present paper has compiled a list of ancient ports and harbours with latitude/longitude positioning, based on 66 ancient authors and some modern authors, e.g. Karl Lehmann-Hartleben (1923), Honor Frost (1963), David Blackman (1982 & 2014), the Barrington Atlas (2000), Nic Flemming (2002), Getzel Cohen (1995 & 2006), Micha Tiverios (2008), Nicolas Carayon (2008), Helen Dawson (2013) and a few others.
This Catalogue of Ancient Ports contains over 3000 places. It can be viewed on:
[www.AncientPortsAntiques.com](http://www.AncientPortsAntiques.com) , and is bound to need further adjustment as some unknowns remain, such as ports that have disappeared and cities yet to be located precisely.