

## CV ARTHUR DE GRAAUW

Arthur de Graauw is a French/Dutch coastal engineer employed by a French Consulting firm, SOGREAH (now [ARTELIA](#)) until the end of 2015.

His main achievements are modelling and design of the sea bed protections and of the foundation layers of the Oosterschelde Storm Surge Barrier (1980), the reconstruction of Sogreah's Hydraulics Lab (1987), the initial project for offshore extension of Beirut Central District (1991), the extension of Port Revel (2009), the Catalogue of ancient ports (since 2011), the discovery of the southern Phoenician port of Tyre (2019).

He graduated from Delft University of Technology in 1976 in civil engineering of coastal structures and areas. He was employed by Delft Hydraulics Laboratory (now [DELTAES](#)) from 1976 to 1983 before joining SOGREAH. He used many hydraulic scale models and mathematical models in his work. He worked on numerous projects related to coastal erosion, industrial ports and marinas in the Mediterranean area including Lebanon, Gaza, Egypt, Libya, Tunisia and France.

From 2002 to 2015, he managed the [Port Revel](#) ship handling training centre using manned models where maritime pilots from all over the world come for training. This led him to work with the Panama Canal extension.

He has been active on ancient ports since 1998 and created a new catalogue of ancient ports encompassing nearly 6000 places. He is the webmaster of [www.AncientPortsAntiques.com](http://www.AncientPortsAntiques.com) focusing on many technical aspects of ancient ports. He became a Research Associate at Lyon 2 University in 2021.

### Project: **PALAEOPORTOLOGY**

#### **Ancient coastal settlements, ports and harbours, by Arthur de Graauw**

This project was started in 2010, aiming at collecting, identifying and locating ancient ports and harbours. It led to an extensive Catalogue including thousands of places. Much attention was also devoted from the onset to structural aspects as described by Vitruvius, and as resulting from modern coastal engineering such as design waves and harbour silting-up. Additional attention was devoted to ancient ships and sailing, as they define the harbour needs.

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 for this catalogue include all places which may have been used by seafarers sailing over long distances. This means that villae maritimae are of interest, but 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.

The project is based on a study of around **100 ancient authors** and **hundreds of modern authors**, incl. the Barrington Atlas. The considered area spans from Iceland to Sri Lanka. This list includes around 220 Neolithic places, 40 Etruscan ports, 130 Minoan ports, 200 Mycenaean ports, 350 Phoenician ports and thousands of Greek and Roman ports. Around 170 "potential ancient harbours" from a nautical point of view, have been added, based on nautical guides/pilots used by modern sailors.

The aim is to guide researchers interested in specific coastal areas with links to relevant and freely accessible publications, as well as links to pages on Pleiades, DARE, Trismegistos,

Topostext and Wikipedia (2 000 to 3 500 links to each of these websites). The database of nearly **6 000 ancient places** and is enriched almost daily by publications made available on Academia and Research Gate. It should be regarded as an unfinished collection, and the geolocation is sometimes a little speculative. Any further help is welcome: please do not hesitate to contact me with your comments or suggestions.

This work is reported in **4 volumes**, all available in [pdf versions](#), and most of it is reproduced on the web site ([www.AncientPortsAntiques.com](http://www.AncientPortsAntiques.com)) where the complete database can be downloaded as an xls spreadsheet containing a wealth of information on each site, as well as the kml files for viewing all the locations on Google Earth.

- **Volume I** gives the list of ports and a bibliography of ancient and modern authors. You can download the latest updated database as an [xls table](#).
- **Volume II** gives the French translations of the texts of the listed ancient authors.
- **Volume III** provides some notes on a few ancient ports, on ancient port structures, on potential ancient ports, on ancient ships and shipping, on ancient hubs and trade networks, and on ancient maps, ancient measures, ancient climate.
- **Volume IV** gives around twenty stories about ancient mariners.

### **Project publications on Ancient Ports**

(updated versions available on <http://www.ancientportsantiques.com/docs-pdf/> )

[Palaeoportology, Ancient Coastal Settlements, Ports and Harbours, Vol. I – List of ancient ports.](#)

A. de Graauw, 2024. This document is the base of the web site (EN, 343 p, 6 Mb).  
An Excel version of this list of ancient ports was published by Harvard's DARMC (June 2013). Download the latest updated [xls table](#).

[Palaeoportology, Ancient Coastal Settlements, Ports and Harbours, Vol. II – Citations of ancient authors on ancient ports.](#)

A. de Graauw, 2024. Texts on ports by around 100 ancient authors (FR, 837 p, 30 Mb).

[Palaeoportology, Ancient Coastal Settlements, Ports and Harbours, Vol. III – Ancient port structures.](#)

A. de Graauw, 2024. Some thoughts on the design of several ancient ports (Actium, Alexandria, Apollonia, the Bosphorus, Caesarea Maritima, Carthage, Centumcellae, Delos, El Hanieh, Leptis Magna, Marius' canal, Narbonne, the Nile Delta, Nirou Khani, Portus, Pisa, Puteoli, Sharm Yanbu-Charmothas, Thapsus, Tyre);

Some comments on ancient port structures, like Vitruvius' methods, failure of breakwaters and breakwater remains, design waves, reinforced concrete, pilae and arched breakwaters, pierced stones, defensive harbour chains, harbour silting-up, tombolos and salients;

A list of around 200 proposed locations for potential ancient harbours;

Some notes on ancient merchant ships and galleys, sailing techniques and Mediterranean sailing routes;

Some thoughts about ancient trade networks and intermodal hubs;

Some remarks on ancient maps, on ancient measures and ancient climate, including earthquakes and tsunamis. (EN, 508 p, 80 Mb).

[Palaeoportology, Ancient Coastal Settlements, Ports and Harbours, Vol. IV – Stories of ancient sailors.](#)

A. de Graauw, 2024. Twenty-four stories on ancient sailors (FR, 78 p, 3 Mb).

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L. Franco & A de Graauw, 2025. "The cradle of port engineering in [Ventotene Island](#)", 38<sup>th</sup> International Conference on Coastal Engineering, September 2024, Rome.

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G. Brocard, et al., 2024. "Double tombolo formation by regressive barrier widening and landside submergence: The case of Orbetello, Italy", [Marine Geology, Vol. 477, Elsevier, Nov. 2024](#).

F. Salomon, et al., 2024. "Reconstructing the plurisecular trajectory of an exemplary hybrid urban delta (Tarragona-Francolí system, Spain): Towards the end of a delta?", *Geomorphology*, Volume 462, Elsevier, published online on: <https://doi.org/10.1016/j.geomorph.2024.109344>, July 2024.

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