

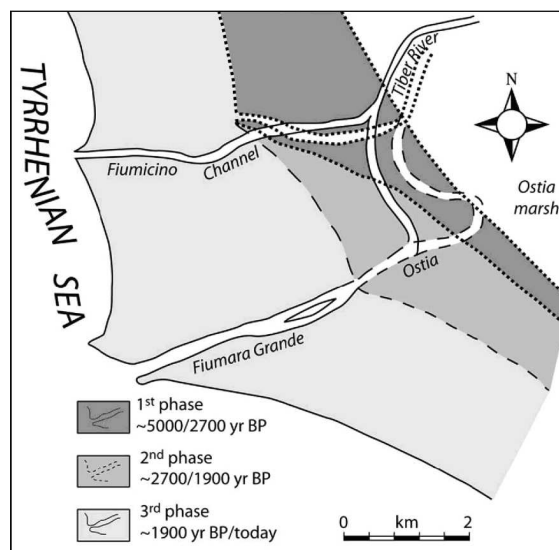
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Ostia & Portus

• The coastal belt of Roma

Four recent articles form a breakthrough in the knowledge of the Holocene history of the coastal area of Rome (Di Rita et al. 2010, Bellotti et al. 2011, Di Rita et al. 2011, Milli et al. 2013 ^{1*}). Data were mainly collected from drillings. The viewpoints are sedimentological and paleobotanical.

Several phases of coastline advance were distinguished.



*Main changes of the Tiber river mouth location during the strand-plain evolution (modified from Bellotti 2011; the transition between the phases 1 and 3 north of Trajan's channel has been shifted slightly westward, following the data in Arnoldus-Huyzendveld 2005 ^{*2}).*

Here follows an abstract of the parts relevant to Ostia Antica and to salt extraction.

- In the pollen diagram of the Lagoon of Ostia, an environment with marshy reeds and sedges with stagnant pools is recorded from about 3900 to 2600 years ago, a period characterized by geological and ecological instability associated with the migration of the cusp of the Tiber delta. Ceramic materials found in the area of Ostia Antica witness human presence in the delta area during the XIII-X centuries b.C.

- Around 3000 years ago, the former lake of the Stagno Maccarese is transformed rapidly in a marsh. There are no traces of human occupation in this period. But we know that salt extraction was already carried out by the Etruscans from 2600 years ago on. The presence of salt works is reflected by the presence of halophitic vegetation remains in the cores.

- In the Republican era, the Maccarese area became an integral part of the *Campus Salinarum Romanarum*, the system of salt winning localized in the area of the Tiber delta, active until the fifteenth century. A.D.

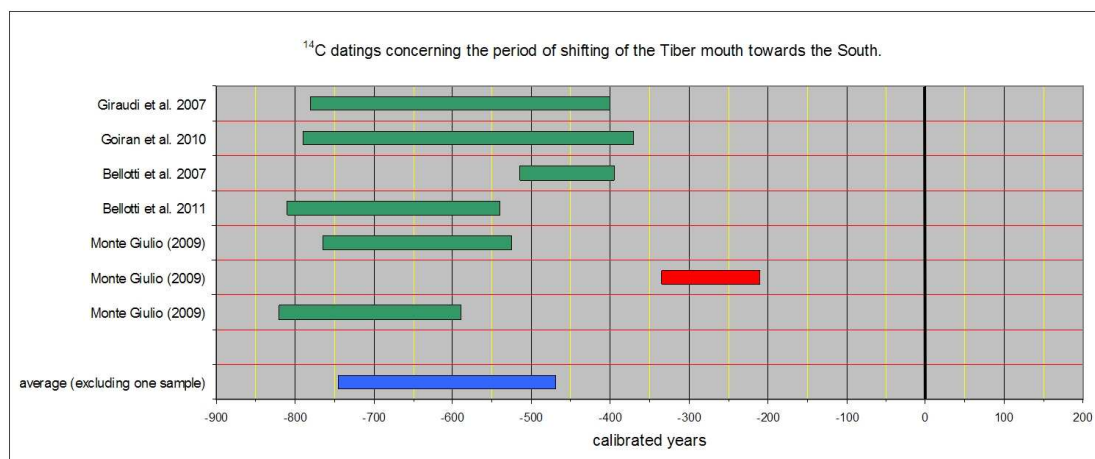
- Around 2600 years ago the Stagno Ostiense is affected by a sudden environmental change through the input of sea water, which transforms the basin from lacustrine to brackish. This transformation coincides chronologically with the foundation of Ostia. We don't know if the sudden change was natural or due to human influence. Anyway, the width of the dune belt was too small to accommodate a real city, as Ostia was later to become. The hypothesis is that, at the time, it was only an outpost.

- The cusped delta advanced seaward very quickly, at an estimated progradation rate of 5 – 6 m/year, so that by the V-IV century BC it was almost fully developed. By then, the dune belt was wide enough to allow the expansion of the city of Ostia.

- In the III century AD, the growth of the delta was interrupted by an erosive process, which occurred during a warm period, characterized by a decrease of the Tiber floods.

The possibility of a temporary presence of the Tiber outlet in the area of the future imperial harbours, before its migration to the present course alongside Ostia, is now generally accepted, and has found confirmation in several stratigraphic drilling data. It results also clearly from the study of the directions of the coastal barriers of Bellotti et al. 2011, fig. 3 (1*). By Milli et al. 2013 this event is considered as "abrupt", and probably the result of a strong flood. In the cores of the ports area, the abandonment is supposed to correspond to the transition from river sediments to those distinctly marine or lagoonal, whereas in the Stagno Ostiense the end of the peat formation is considered as an indicator of the Tiber arrival (Bellotti et al. 2011).

The time/period of the shift is only approximately known: based upon ^{14}C datings of drilling cores in the basin of Claudius, Giraudi et al. 2009 (3*) propose its occurrence between the eighth and fifth century BC (780 – 400 BC), Goiran et al. 2010 (3*) between 790 and 370 BC, Bellotti et al. 2007 (3*) between 515 and 395 years BC. Based upon a drilling near Ostia, Bellotti et al. 2011 (1*) propose a date range after 810 – 540 BC., and Arnoldus-Huyzendveld in preparation (*4), based upon three samples of the uppermost Tiber sediments from drillings in the Claudius basin near Monte Giulio: 765 – 525 BC, 335 – 210 BC and 820 – 590 BC (*5). If we accept an intrusion error of the second sample of the last group, this complex of data converges to a shifting of the Tiber outlet between the VIII and VI (V) century BC, with average extreme values between 745 and 470 years BC and an average central value around 600 BC (these data need to be processed in the program Oxcal).



^{14}C datings relative to the shift of the Tiber outlet from the ports area to the South.

For info on Ostia Antica, see the site www.ostia-antica.org and the Facebook page [Ostia L.](#)

• The harbour basin of Claudius

The extension and orientation of the Claudian harbour basin has long been subject to debate (see Morelli 2005).

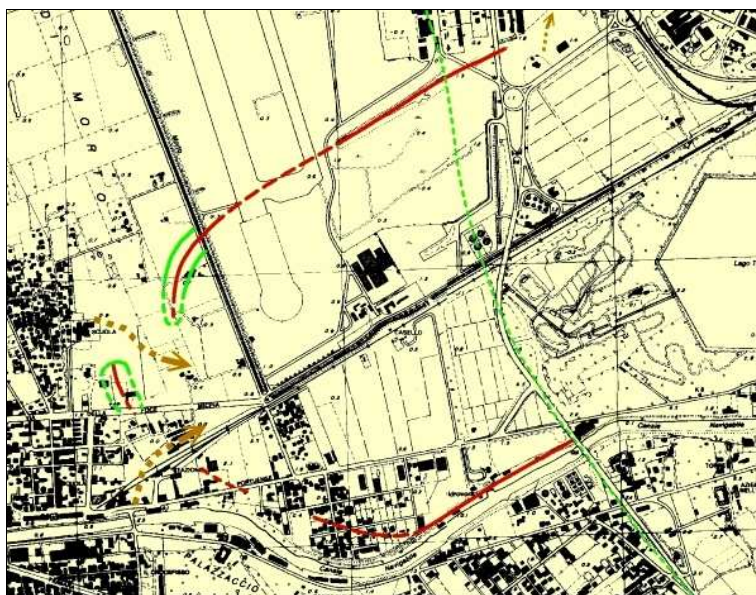
A series of 135 drillings executed between 2004 and 2007 has resolved this problem without any doubt : the basin is east-west oriented and sets out farther into the sea than ever suspected: the distance between Monte Giulio and the lighthouse island is more than 2 km. The various distances indicated by Antonio Labacco on a reconstructive map of the XVth century turned out to be approximately correct (Morelli al. 2011; 6*).

Remains of structures were encountered in the drillings only from a depth of several meters on, being covered by dune sand.



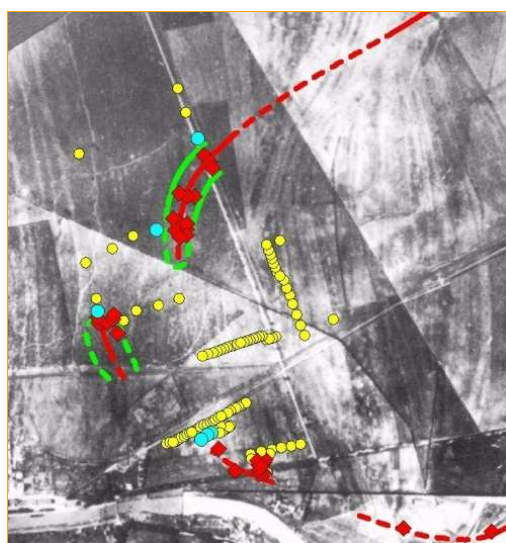
Position of the drillings, in red squares with remains of structures.

The reconstruction shows two protruding moles and a lighthouse island, separated by two evident entrances. A third narrower entrance (probably only a channel) was demonstrated to exist between the northern pier and Monte Giulio (7*).

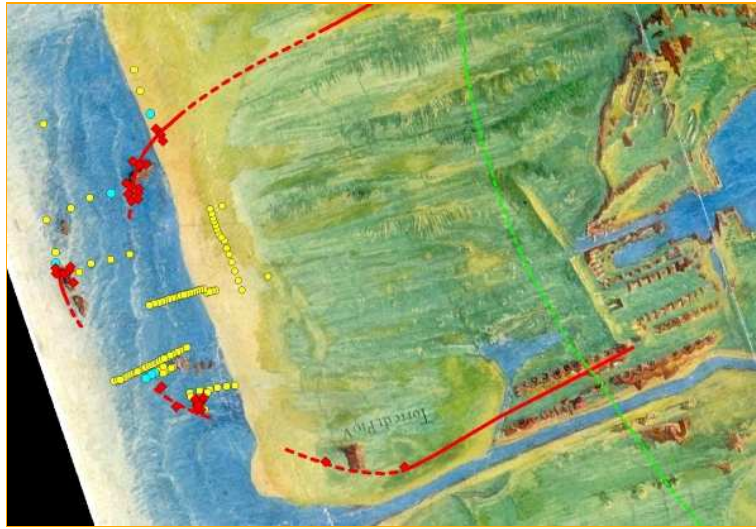


Reconstruction of the outline of the piers and lighthouse island and the entrances of the Claudian harbour, based upon the recent drilling data.

The same data have been overlain, as well as possible, on a photo mosaic of 1911, and on a stretched and overturned image of the fresco of A. Danti of 1582, which demonstrates first the reliability of this fresco and second the visibility, at the time, of the lighthouse relicts still in the sea, before their burial by the dune sands of the advancing coast.



The drilling data and interpretation overlain on a fotomosaic of 1911; red squares indicate structures encountered in the drillings.



In red lines the of the Claudian harbour overlain on a stretched and overturned image of the fresco of A. Danti of 1582.

According to contemporary writers, in the same period the remains of the lighthouse were still visible in the sea (Giuliani 1996 p. 41, 8*):

Biondo Flavio a questo proposito scrive (nel 1558): *“di questa torre ne veggiamo insino ad hoggi una buona parte in pie, se non che ne sono stati tolti i marmi, dei quali ella era incrustata”*. Ma è Pio II nei suoi Commentarii (1614; 9*) a darci la informazione più utile: *“ancora rimangono vestigi a della torre le quali si vedono là nel mare; tutti gli altri monumenti sono periti interamente”*.



One of the 24 images of the lighthouse known from Ostia and Portus (mosaic in statio 46 on the Square of the Corporations, Ostia); from ostia-antica.org.

For info on the Claudian lighthouse, see ostia-antica.org/portus.

Article: Andrea Locatelli's (1695 – 1741) [painting](#) of the salt pans of Ostia.

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2*)

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3*)

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4*)

In preparation: Arnoldus-Huyzendveld A. – "Le dinamiche evolutive dell'ambiente costiero e del Tevere".

5*)

Datings by the *Centre de Datation par le Radiocarbon*, courtesy of the CNRS – UMR 5133 – *Maison de l'Orient et de la Méditerranée*, Lyon, France.

6*)

- Morelli, C., 2005 – The Claudian Harbour in Light of New Investigations. In S. Keay, M. Millett, L. Paroli and K. Strutt (eds.), *Portus. An Archaeological Survey of the Port of Imperial Rome*. Archaeological Monographs of the British School at Rome 15: 241-68. London, BSR.

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8*)

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9*) Testo originale in Inglese: <http://www.ostia-antica.org/anctexts.htm>, Later Texts, Pius II.

Posted by Tonnie_Rocca at 14:47