

Byblos & the Sea - an HFF funded Research Project
Summary report: Geophysical Tomography Survey / Mission 5 - March 2015
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On the bases of previous results (Geophysical Survey Oct. 2013 & Auger Coring campaign Jan. 2014) which have confirmed the existence of a silted-in basin buried under the so-called “Armenian Orphanage” lot, *Byblos & the Sea* carried out a second geophysical survey on that same lot in March 2015 (Fig.1), under the scientific direction of geophysicists Vivien Mathé (La Rochelle University, La Rochelle, Poitou-Charentes, France).



Figure 1. The lower Armenian Orphanage lot covering a silted-in harbor basin located via geophysical prospection and auger coring drills (©Byblos & the Sea, 2015, Martine Francis-Allouche)

The objective of this mission was to survey the areas located on the paleo-shoreline (blue dotted line on Fig.1) of the silted-in located harbor basin to:

- a) Fine-tune results obtained by the previous geophysical resistivity survey
- b) Spot possible man-made structures such as a mole, a dock or other harbor buildings.

This tomography survey performed thirteen parallel NE-SW and NW-SE pseudo-sections across the land (Fig. 2-3), giving results in section and elevation, whereas former resistivity results (2013) gave two dimensional in-plan images. Both these highly efficient and complementary techniques were used

to optimize results by cross-referencing them, eventually obtaining a three dimensional image of the harbor basin (Fig. 4).

Results are published in the Bulletin d'Archéologie et d'Architecture Libanaises (Francis-Allouche, M. and Grimal, N. *et al.* 2017. "Byblos maritime : une installation portuaire au piémont sud de la ville antique", BAAL 17, p. 133-196).



Figure 2. Example of a tomography pseudo-section across the lower Armenian Orphanage lot covering the buried harbor basin at the southern foot of the antique city of Byblos, (©Byblos & the Sea, 2015, Martine Francis-Allouche).

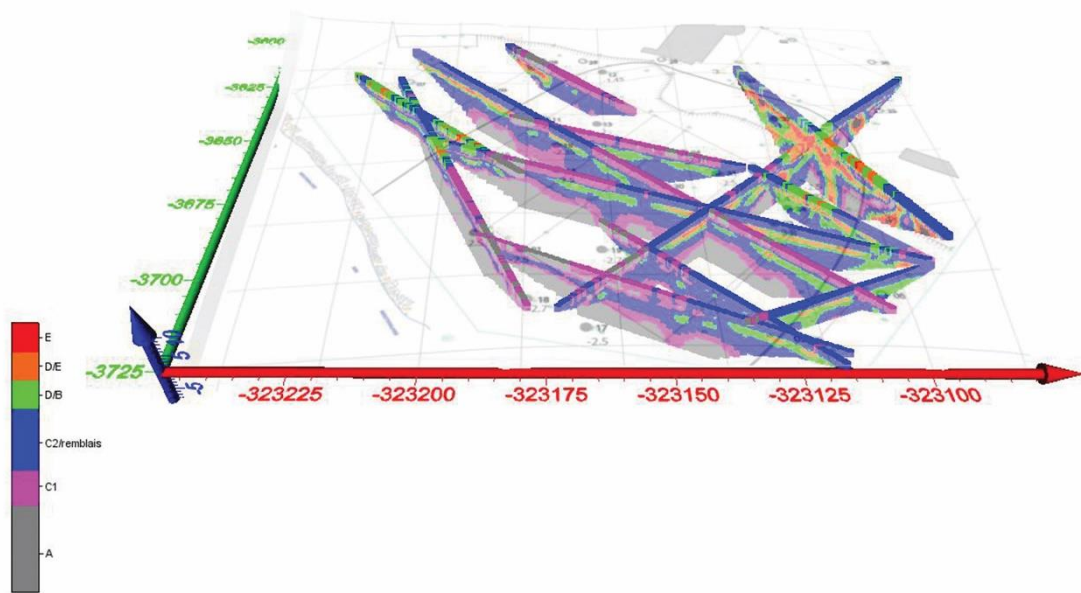


Figure 3. Thirteen parallel NE-SW and NW-SE pseudo-sections resulting in a 3D north-southern view of the basin: the gray color represents the bedrock; the magenta and the bleu represent the buried basin, the red and orange tones represent possible structures (©Byblos & the Sea, 2015, Vivien Mathé).

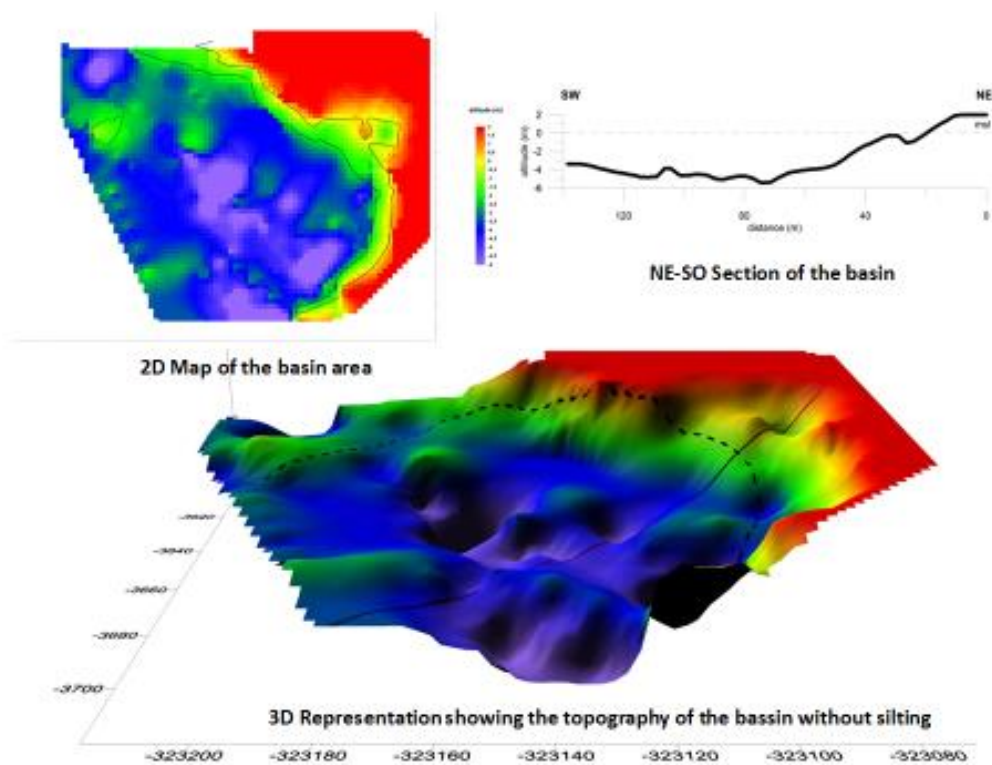


Figure 4. Based on results obtained by two complementary geophysical surveys and an auger coring campaign, the topography of the silted-in basin could be hypothetically reconstituted (©Byblos & the Sea, 2015, Vivien Mathé).