

## Ports Data Collection Instructions

This project studies the persistence of economic activity around the Mediterranean Sea. We have a list of locations of ancient ports, and we want to collect data on what continues to be in these locations.

Consider the file Ports\_Data.xlsx. Columns A-C contain information we currently have on these ancient ports:

portsid	Internal identifier number
latitude	Coordinate of port (latitude)
longitude	Coordinate of port (longitude)

To begin data collection:

- 1) Copy the coordinates and paste them into Google Maps (select both cells, copy, and paste into Google Maps location). Collapse the side panel, so you are just viewing the map itself (click on the arrow in the upper left). Note that you should select "satellite" as the viewing option. Please do not rely on any other sources than the image provided (such as other maps, other images, or alternative views like Google Street View).
- 2) Standardize the zoom in Google Maps around the coordinate location so you can see approximately 1000 meters in every direction from the coordinate location entered (to switch from feet to meters, click on the distance legend in the lower right). This zoom depends on the computer screen you use.
- 3) Save this Google Map image, showing the area 1000m in each direction: right-click the satellite image, click "Print," and then in the notes indicate the port number (e.g., "Port ###"). Print the image as a PDF and make the file name "p###.pdf" where ### refers to the portsid for those coordinates.
- 4) Collect the data, discussed below, adding the information to the Excel sheet "Ports\_Data." Note that you may need to zoom out to understand the general context of this coordinate, and zoom in to collect particular data, but we are requesting information on harbors and ports within 1000m of the coordinate point.

Natural Harbor?

Indicate either "Yes" or "No" for whether there is a natural harbor within 1000 meters of the coordinate input. A natural harbor is an area in which boats would be protected from the sea based on features of the coastline. If there are man-made structures supplementing the harbor, please focus on whether there would be a natural harbor without those man-made structures. The natural harbor could be a natural inlet on the coast or accessed off a natural river extending some distance inland.

Man-made harbor?

Indicate either "Yes" or "No" for whether there is currently a man-made harbor within 1000 meters of the coordinate input. This could be an entirely man-made harbor in which there would otherwise be no natural harbor OR this could be man-made extensions of a natural harbor (in which there is also a natural harbor recorded previously as "Yes" but these man-made extensions improve the harboring ability of the natural harbor).

As examples: man-made structures might involve something jutting out into the sea to provide protection for boats, or could reflect man-made protection against silting (a barrier on one or both sides of the harbor to keep sand from drifting across the opening to the harbor, or the construction of a canal/opening through the sand/land to keep a harbor accessible from the sea through that inlet).

- Silting protection? If there is a man-made harbor, indicate “Yes” if it reflects man-made protection against silting (a barrier on one or both sides of the harbor to keep sand from drifting across the opening to the harbor, or the construction of a canal/opening through the sand/land to keep a harbor accessible from the sea through that inlet) and indicate “No” if it reflects something jutting out into the sea to provide protection for boats.  
If there is no man-made harbor, leave blank.
- Silted river? Indicate if there is a silted river, using three options: “No” means that there is either no river or that the river does not look silted in a way that would impede boats; “Partially” means there is a river at this harbor location but it looks silted in a way that would impede boats (see Example 6 below); “Fully” means that there was once a river in this location, but it has fully silted up (see Example 7 below).
- Inland harbor? If there is a harbor (natural or manmade), indicate “Yes” if the harbor is inland from the coast, accessed from a river or canal. Indicate “No” if the harbor is on the coast.  
If there is no harbor (natural or manmade), leave blank.
- Coast/Sea/Land? If there is NO harbor (natural or man-made), please report if the coordinate point is within 1000m of the coast (“Coast”), if it is more than 1000m out to sea (“Sea”), or if it is more than 1000m inland (“Land”). Ancient shipping locations may be replaced by land in some sandy areas or river deltas, such that the ancient location will now show up as being far inland, and some shipping locations may now be out to sea if they have been washed away or sunken.  
If there is a harbor (natural or man-made), leave blank.
- Port now? Indicate either “Yes” or “No” for whether there is currently a port within 1000 meters of the coordinate input. A “Port” is defined as a man-made structure that allows for the docking of boats for transferring cargo. Note that a port is distinct from man-made structures that create or extend the harbor, though these man-made structures to create or extend the harbor might also be constructed to create a port.
- Commercial port structures? Indicate “Yes” or “No” for whether there are larger-scale commercial port structures, such as facilities for loading and unloading commercial cargo or a shipyard or large warehouse. There could be a large ship/tanker docked to the port, but there may not be a large ship/tanker docked currently. Note that these

“commercial” structures would not include port structures that are built up only for what appear to be recreational boats or other recreation-focused activity.

If there are no port structures, leave blank.

Basic or Developed port?

If there is a port, then indicate whether the port structures are “basic” or “developed.” Basic port structures would reflect a simple straight pier extending into the water, or built along the edge of the water. Developed port structures could reflect more intricate port structures that enable and support larger-scale activities.

If there are no port structures, leave blank.

Boats visible?

Indicate whether there are no boats visible in the water within the harbor and/or docked at the port (“None”) or else give the approximate number of boats floating within the harbor and/or docked at the port. Give a rough number if there are fewer than 10 boats, approximate to the nearest multiple of 10 for larger numbers, and indicate 100+ if there are more boats. Note that we are referring to boats in the water/port, and not boats on the land/beach. Boats passing by in the water, but not within the harbor and/or docked at the port, should not be included in this total.

If there is no harbor (natural or man-made) and no port, then leave blank.

Sea routes?

Indicate whether there are no “sea routes” marked that hit land within 1000m of the coordinate (“None”) or else record the number of sea routes indicated (“#”). See examples below for visible “sea routes.”

If there is no harbor (natural or man-made) and no port, then leave blank.

Comments

Leave any comments that might be useful, particularly if there is something unusual or it raised questions about what to do.

Example 1

Sacrum Prom

Praia de Beliche, Belixe, near Sagres, near Cape Sao Vicente, San Vincente, seems the first landing place in this area, it also features Roman ruins. Portugal

INPUTS:

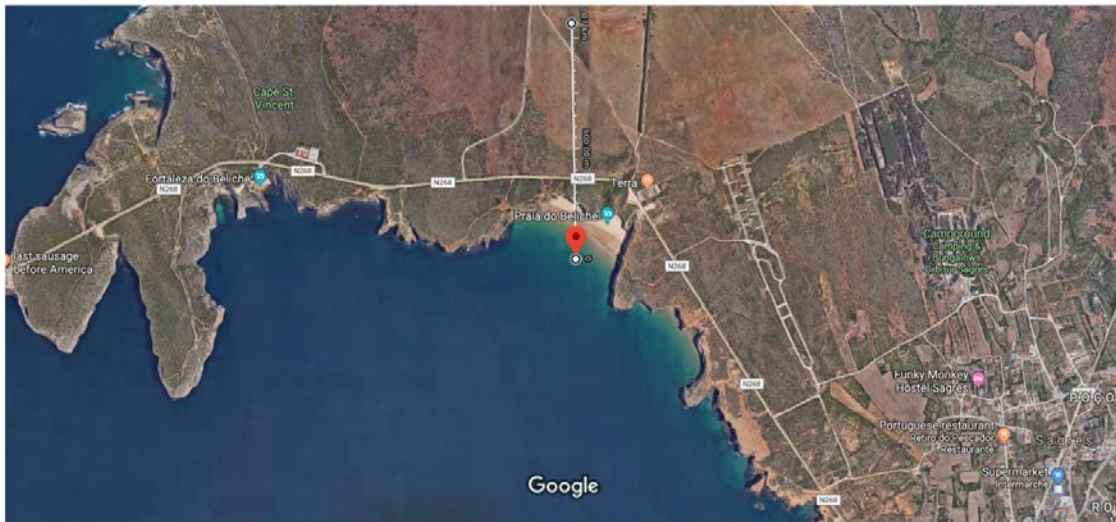
portid ???

37.0242 -8.96575

OUTPUTS:

Screenshot

Google Maps 37°01'27.1"N 8°57'56.7"W



Imagery ©2019 Google, Map data ©2019 Google 200 m

Measure distance  
Total distance: 1.07 km (3,498.26 ft)

Natural harbor?

Yes

Manmade harbor?

No

Silting protection?

No

Silted river?

No

Inland harbor?

No

Coast/sea/land?

(BLANK)

Port now?

No

Commercial port structures?

(BLANK)

Basic or developed?

(BLANK)

Boats visible

0

Sea routes

0

Comments

(BLANK)

Example 2 – shipping routes visible

Note all the dashed white lines leaving the port. These are the visible shipping routes we want you to count in the case that there are any.

INPUTS:

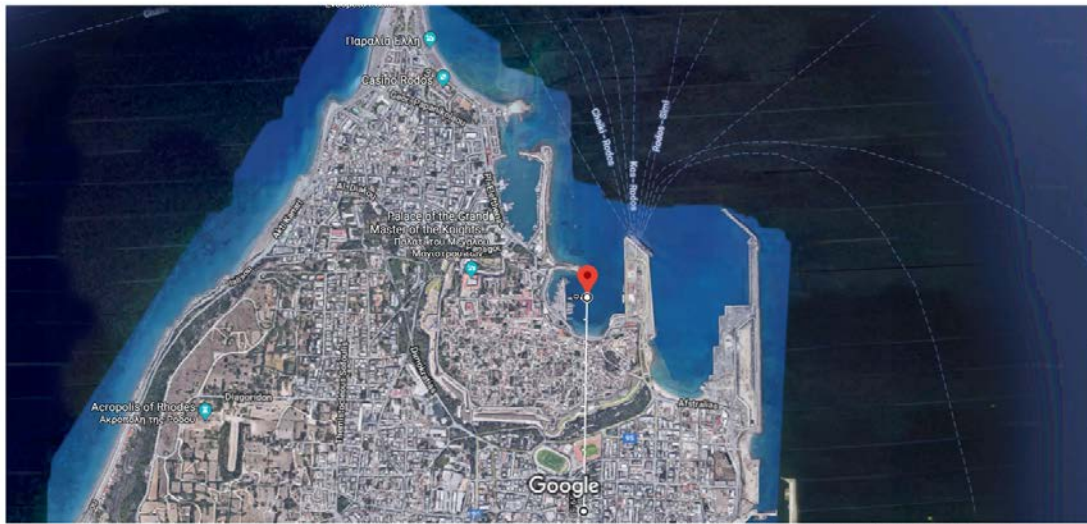
portid 1225

36.44496155 28.23008919

OUTPUTS:

Screenshot

Google Maps 36°26'41.9"N 28°13'48.3"E



Imagery ©2019 Google, Data SIO, NOAA, U.S. Navy, NGA, GEBCO, TerraMetrics, Map data ©2019 Google 200 m

Measure distance  
Total distance: 989.59 m (3,246.68 ft)

Natural harbor?

Yes

Manmade harbor?

Yes

Silting protection?

No

Silted river?

No

Inland harbor?

No

Coast/sea/land?

(BLANK)

Port now?

Yes

Commercial structures?

Yes

Basic or developed port?

Developed

Boats visible

100+

Sea routes

10

Comments

(BLANK)

Example 3:

Silting protection can include a manmade barrier against which sand is blown. This will require judgement in many cases. The port below looks like sand is blown against the barrier, creating a more pronounced harbor, so it can be classified as silting protection.

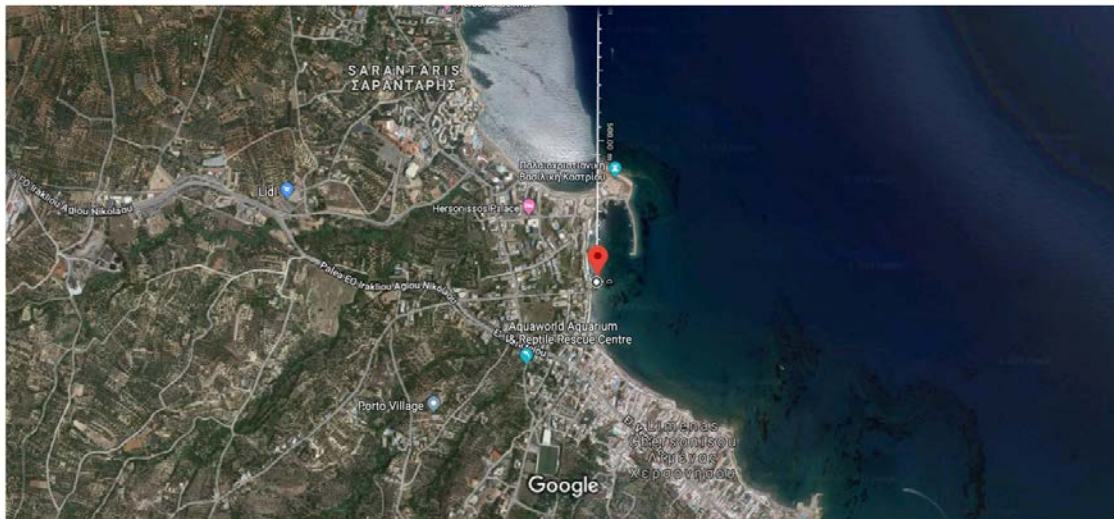
INPUT:

portid 902  
35.32001114 25.39204025

OUTPUT:

Screenshot

Google Maps 35°19'12.0"N 25°23'31.4"E



Imagery ©2019 Google, TerraMetrics, Data SIO, NOAA, U.S. Navy, NGA, GEBCO, Map data ©2019 Google 200 m

Measure distance  
Total distance: 1.01 km (3,314.12 ft)

- Natural harbor?  
Yes
- Manmade harbor?  
Yes
- Silting protection?  
No
- Silted river?  
No
- Inland harbor?  
No
- Coast/sea/land?  
(BLANK)
- Port now?  
Yes
- Commercial port structures?  
No
- Basic or developed?  
Basic
- Boats visible  
20
- Sea routes  
0
- Comments  
(BLANK)

Example 4:

There are different ways that a natural harbor can be extended with manmade structures. The image below looks like it is a naturally occurring harbor (e.g. the natural coastline near the mouth of the harbor). There are also two types of manmade extensions to the harbor: One is at the mouth, where there is a structure built straight into the water. There is also a manmade region to the south of the coordinate that has very straight edges, indicating that this part of the harbor was manmade.

INPUT:

portid 3525  
42.519562 3.1083601

OUTPUT:

Screenshot

Google Maps 42°31'10.4"N 3°06'30.1"E  
Port 3525



- Natural harbor?  
Yes
- Manmade harbor?  
Yes
- Silting protection?  
No
- Silted river?  
No
- Inland harbor?  
No
- Coast/sea/land?  
(BLANK)
- Port now?  
Yes
- Commercial port structures?  
No
- Basic or developed?  
Basic
- Boats visible  
100+
- Sea routes

0  
Comments  
(BLANK)



Example 5:

Inland harbors, like the one below, include rivers (which are natural) and canals (which are manmade.) The coordinate below also includes docked along the banks of the river – these count as “basic” port structures.

INPUT:

portid 3696

43.314331 3.46843

OUTPUT:

Screenshot

Google Maps 43°18'51.6"N 3°28'06.4"E  
Port 3696



Natural harbor?

Yes

Manmade harbor?

No

Silting protection?

No

Silted river?

No

Inland harbor?

Yes

Coast/sea/land?

(BLANK)

Port now?

Yes

Commercial port structures?

No

Basic or developed?

Basic

Boats visible

60

Sea routes

0

Comments

(BLANK)

### Example 6

The river that appears north of the coordinate in this example is a partially silted river. Although some of the river still has water, there are sandy patches that appear along the river. However, since there is enough water in the river to be visible in the image, we still count it as a harbor since it should be wide enough for a boat to pass through.

INPUT:

42.70881 2.94526

OUTPUT:

Screenshot

Google Maps 42°42'31.7"N 2°56'42.9"E



Imagery ©2019 Google, Map data ©2019 Google 100 m

Natural harbor?

Yes

Manmade harbor?

Yes

Silting protection?

No

Silted river?

Partially

Inland harbor?

Yes

Coast/sea/land?

(BLANK)

Port now?

No

Commercial port structures?

(BLANK)

Basic or developed?

(BLANK)

Boats visible

0

Sea routes

0

Comments

(BLANK)

Example 7

The area below used to have a lake, but the majority of the lake has been fully silted over such that a boat would not be able to travel here and the lake can no longer serve as a harbor.

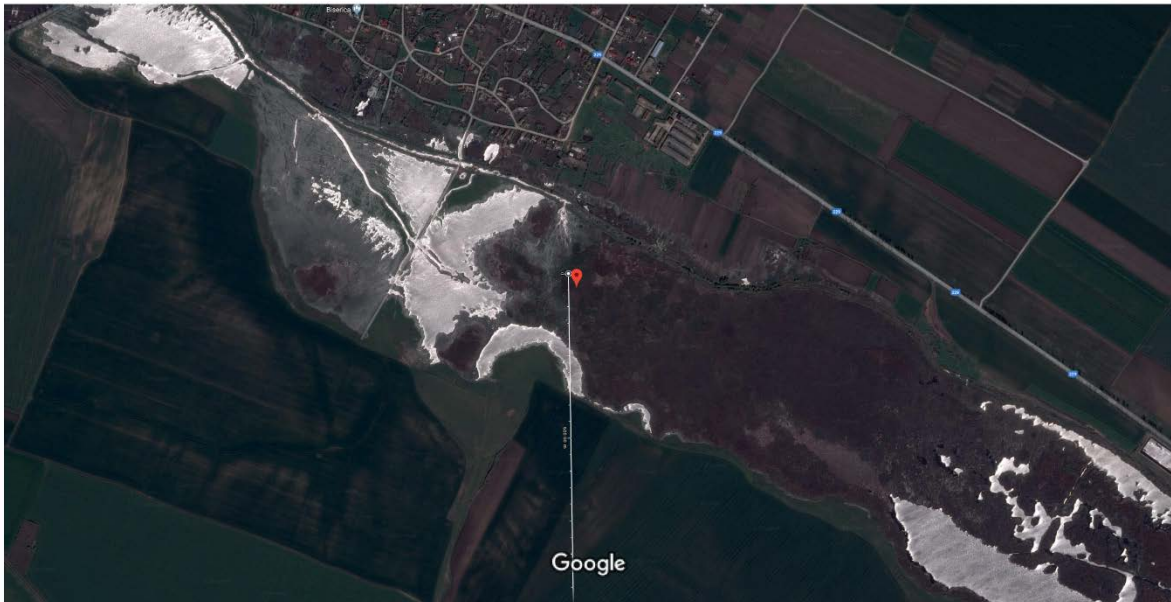
INPUT:

44.94811 28.68712

OUTPUT:

Screenshot

Google Maps 44°56'53.2"N 28°41'13.6"E



Imagery ©2019 CNES / Airbus, Map data ©2019 Google 100 m

Natural harbor?

No

Manmade harbor?

No

Silting protection?

No

Silted river?

Fully

Inland harbor?

(BLANK)

Coast/sea/land?

Land

Port now?

No

Commercial port structures?

(BLANK)

Basic or developed?

(BLANK)

Boats visible

0

Sea routes

0

Comments

(BLANK)

