

A detailed historical map of Malaga, Spain, showing the city's layout, the harbor, and surrounding terrain. The map is color-coded with various shades of red, orange, and yellow for different urban areas, and green for the surrounding landscape. The title 'Plano de la Ciudad y Puerto de Malaga' is visible at the bottom.

Workshop on

MANAGING COASTAL AREAS

Strengthening Ties between Scientists, Administration and Consultancies

BACKGROUND IMAGE

Map of the city and port of Málaga,

Onofre Rodríguez, 1805.

Municipal Archive of Málaga. Catalog nº 73.

Registration number R. - 70

<https://www.juntadeandalucia.es/institutodeestadisticaycartografia/jornadas/2016/andaluciartograficaMA/index.htm>

*Plano de la Ciudad y Puerto de Málaga,
anotado con edificios y nombres los sitios donde principian
las proximidades por donde se comunican
con el Collado de la Virgen de Victoria,
a la casa que están a la Puerta de San Pedro
* a la casa del Conde de la Puerta de San Pedro
* a la Puerta de San Pedro de San Pedro de San Pedro
* a la casa de San Pedro de San Pedro de San Pedro
* a la casa de San Pedro de San Pedro de San Pedro
* a la casa de San Pedro de San Pedro de San Pedro*

Long. 4° 45' 30" W. Lat. 36° 45' 30" N.
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Managing Coastal Areas.

The mythic phrase¹ of May 1968, that led the protest imperialism and the consume society, might be present during the worldwide coastal development in the subsequent decades. Several coastal Royal Decrees, Laws, and Regional Governmental Ordinances appeared to counter acts the huge and badly orchestrate coastal anthropogenic transformation due to sun and beach tourism frenzy.

Unlike what is observed in the map of Malaga of 1805, the recovery area of the beaches has been strongly reduced. Nowadays, the passage of a storm generates hundreds of incidents along the coastline of dozens of countries related to the destruction of coastal protection, beaches, and biodiversity, but also the flooding of promenades, coastal services, and homes. The costs of reconstruction, cleaning, replacement, and defense, which range from hundreds of thousands to several million euros per incident, cannot be assumed by private entities or local organizations. They are joined by the question of what will happen in the next storm, or in the incoming years by the sea level rise.

¹ Raise the cobblestones and you will see the beach!

The threat posed by climate change on the coast is taking on a relevant role today and on the agenda of politicians and coastal managers. The adverse effects produced by the storms on the already highly transformed coastal strip throughout the world are leading to a great extent to the lack of protection of the coast. This situation of discomfort of coastal communities grows as does vulnerability, danger, coastal risk, and the interest of managers due to its high and growing cost for local, regional, and national coffers. The pressures (of all kinds) due to the recurring and more frequent episodes of erosion and flooding are creating a breeding ground that can lead to urgent interventions supported by poorly informed decisions that will lead to even more expensive interventions in the future. This situation is aggravated if the legislative situation of each country on the coast is added to the equation.

The strategies that can be followed were documented in several manuscripts during decades. Those strategies can be the managed realignment, the hold the line, move seaward or limited intervention or do nothing. All of them were applied with adequacy in the past, but right now, data and methods allow new approximations to face on the issue.

The information about exponentially increases during the last few years and now researchers, consultancies and government have available data from climate observations, satellite imagery, global, European, and regional modelling, spatial data that contains soil uses, buildings, ports, dikes, population density, fish hatcheries or Posidonia meadows,

among many others. These data feed several local modellings that allow to quantify the affection or repercussion of any new soft or hard intervention in the coast.

| Workshop aims.

The workshop will create a working space where will be contextualized the efforts that researchers, consultancies and administrations made during the last decades to enable the activities and use of the coastal areas, saving the criteria of the green economy for the next century.

Several specific objectives are proposed to approach from different points of view:

- Contextualize the coastal erosion and the economics activities at the littoral.
- The legislation of the coasts and the environmental responsibility: managers, scope, protection, and administrations involved.
- Study cases determining the coastal erosion.
- Four work areas are established for:
 - Modeling coastal agents (from global to local drivers).
 - Modeling the seabed properties and morphology
 - Modeling coastal process from space.
 - Quantifying the risk for flooding a erosion.
- The role of the coastal managers

Open debates will be open at the end of every session with the objective of establishing a common framework that allows unifying the evaluation criteria of processes and thus strengthening the knowledge base of the management of coastal erosion and its planning.

| Contents of course.

The first day focus on a wide introduction to the context of European coastal erosion giving some clues about legislation, economic activities and administrations involved. During the afternoon, some current key projects (international, European, Spanish, and regional) will be exposed.

The second day is proposed the working areas. Four sessions that covered the full methodology applied in ICCOAST project will be presented. Attendants will be guided to understand and use the tools necessary to assess coastal erosion and flooding. This methodology is avant-garde, and it is the first time that has been applied for coastal modelling.

During the third day, policymakers, administrations, and consultancies will expose their experiences and opinions about the communication and relationships which each other's revealing the complex outlook of the coastal management.

| Program.

	First day		
08.30 – 09.00	Welcome		UNIA & GDFA
		Speaker	Institution
Morning session	The context of the coastal erosion		
09.00 – 09.45	Erosion problem at the European coasts	Michalis I. Voudoukas Scientific Officer	Joint European Research Center, Institute of Environment and Sustainability
09.45 – 10.30	Coastal flooding and its costs	Eduardo Martínez Gomáriz Innovation Project Manager & Researcher & Associate Lecturer	Aigües de Barcelona & UPC
10.30 – 11.00	Coffee break		
11.00 – 11.45	European and Spanish legislation in the coastal area	Asensio Navarro Ortega Associate Professor	University of Granada
11.45 – 12.30	Challenges in software design in maritime engineering	Pedro Magaña Redondo Post-doctoral Research	University of Granada
12.30 – 13.30	OPEN DEBATE WITH SPEAKERS		
14.00 – 15.30	Lunch		
Afternoon session	Study cases		
15.30 – 16.15	MITECO Project	Mauricio Gonzalez Full Professor	Hydraulic Institute of University of Cantabria
16.15 – 17.00	Nature-based solutions	José Antonio Álvarez Antolínez Assistant Professor	University of Delft
17.00 – 17.30	Coffee break		
17.30 – 18.15	CHAMFER Project	Andrés Payo Principal Scientist, Coasts & Estuaries Geohazards Research	British Geological Survey (United Kingdom)
18.15 – 19.00	ICCOAST Project	Manuel Cobos Post-doctoral Research	Environmental Fluid Dynamics group
19.00 – 19.45	OPEN DEBATE WITH SPEAKERS		
	Second day		
		Speaker	Institution
Morning session	Modeling coastal agents (maritime climate and seabed properties and morphology)		

Plano de la Ciudad y Puerto de Málaga, señalados con estrellas y numerados los sitios donde permanecieron las piraterías pasadas. Españoles: *en el campanario del Puerto cerca de San Juan; *en el cerro que miran a la Alameda de San Pedro; *en casa del Canónigo entre la Plaza Mayor; *en la Plaza de San Juan cerca de la Plaza Mayor; *en la casa de San Juan (cerca de la Plaza Mayor); *en el cerro de las Villalomas; *2.ª Plaza de Comercio.

Lat. N. 36° 45' 30"
Long. O. 4° 35' 30"

08.30 – 10.30	WS. Geological modelling. How to create a thickness model layer of the seabed?	Helen F. Burke, Dave Morgan, Gareth Jenkins, Helen Smith	British Geological Survey (United Kingdom)
10.30 – 11.00	<i>Coffee break</i>		
11.00 – 13.00	WS. Stochastic methods for simulate environmental timeseries.	Pedro Otiñar, Marcus Santana, Pedro Magaña	Environmental Fluid Dynamics group
14.00 – 15.30	<i>Lunch</i>		
Afternoon session	Modelling coastal processes		
15.00 – 17.00	WS. Stochastic measurements of flood and erosion.	Asunción Baquerizo, Marcus Santana, Pedro Magaña, Pedro Otiñar	Environmental Fluid Dynamics group
17.00 – 17.30	<i>Coffee break</i>		
17.30 – 19.30	WS. Satellite Imagery. Use of Google Earth Engine.	Mar Roca	Institute of Marine Sciences of Andalusia – Spanish National Research Council (ICMAN-CSIC).
	Third day		
Morning session	The coastal managing – roles		
09.00 – 09.45	The Regional actions over the coastal region	Juan José Alcántara Benjumea Coastal Service and Littoral Management (no confirmado)	SCGL – DGCACC Andalusian Government
09.45 – 10.30	Coordinated coastal interventions	Angel González Castiñeira Coastal Service and Littoral Management	Head of the Demarcation of Mediterranean Coasts (Malaga)
10.30 – 11.00	<i>Coffee break</i>		
11.00 – 11.45	The Council actions over the coastal region	Jorge Martín Vivas Head of Consultancy	Estudio 7
11.45 – 12.30	Consultancies and the coastal area	Mike Walkden Coastal hazard specialist – erosion and flood risk	Moffat & Nichols
12.30 – 13.30	OPEN DEBATE WITH SPEAKERS		
13.30 – 14.00	Closure		UNIA & GDFA



Dates and location.

The following plan will cover the topics. The WS last three days while the starting date will be the Monday, September 25th of 2023.

The International University of Andalusia and the Environmental Fluid Dynamics group wish you a fruitful and enjoyable experience.

The Workshop is included as part of the Second Edition of the International University of Andalusia-Digital Research Award of Research on the promotion of the digital transformation of our society, open to the different topics such as digitization of processes, activities, institutions, communication formats, data management and storage, companies, and industries, etc. Dr. Manuel Cobos Budia acknowledges the support and international scope and projection of the award.

<https://www.unia.es/noticias/manuel-cobos-budia-premio-unia-digital-de-investigacion-por-su-modelo-para-evaluar-la-calidad-de-agua-en-el-estuario-del-guadalquivir>

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