

Program

BioHydrology 7



BIOHYDROLOGY

2023 GANDIA

BioH₂O
2023 **7**

VNIVERSITAT (C N)
DE VALÈNCIA (C ↑)
Departament de Geografia

UV **gàndia**
VNIVERSITAT DE VALÈNCIA

 **SEDER**
soil erosion and degradation research group

 **TERRA**
ENVISION

Wednesday, October 18th 2023

Morning: visit to the city of Valencia

9.00. Meeting at the University of València. Faculty of Geography and History. Department of Geography.

10.00 Meeting point at the Valencia train station "Estació del nord"

10.30 The hydrology and geomorphology of the city of Valencia with Artemi Cerdà

14.00 Faculty of Geography and History.

Afternoon: Scientific talks at the Faculty of Geography and History

(AVE. Blasco Ibàñez, 28, 46010-Valencia)

16:00. The past and present of the Biohydrology as a scientific society and the future of the biohydrology as a community. Open discussion

18.00 Saskia Visser. The key to sustainable use of the bio-hydrological system: systemic transformation

19.00 Fernando Valladares. The fate of humans today. Climate change, the problem and the solutions.

20.00h. Closure of the day.

Thursday, October 19th 2023

Scientific sessions at Gandia International campus (2-minute walk from Gandia train station). address: carrer Tossal 8, 46702 Gandia

Before 9.00h	Welcome and registration	
10.00h	opening by Artemi Cerdà and Francisco Escriva-Saneugenio	Carmen Melo (Director of the Centre Internacional de Gandia), Ana Camarasa (Head of the Department of Geography) and Josep Montesino (Dean of the Faculty of Geography and History)
	Session water	chair: Dara Park
10.15	Isabella Hill	Impact of Water on Visual and Digital Color Assessment of South Carolina USA Soils.
10:30h.	Jesús Barrena-González	Extreme Precipitation in Chile: Exploring Latitudinal and Altitudinal Variations
10:45h.	Francisco Escriva-Saneugenio	The loss of hydraulic heritage in the Valencian orchard.
11:00h.	Francisco Rubén Badenes-Pérez	Effect of water stress combined with high photosynthetic active radiation on glucosinolate content variation in <i>Barbarea</i> spp. (Brassicaceae)
11:15h.	Jesús Barrena-González	Assessing water quality for livestock management in mediterranean rangelands
11.30	Discussion on water	
11:45h.	Break	
	Session soils	chair: Antonio Giménez Morera
12.15	Masha Bokar	Potential Use of Biochar as a Soil Amendment to Sorb Terbutylazine and 2-Methyl-4-Chlorophenoxyacetic Acid
12:30h.	Payton Davis	The Role of Soil Health Management Practices on Soil Hydrophobicity in Agroecosystems: A Review.
12:45h.	Sachaly Rosario Rivera	Soil Phosphorus Availability from Oat and Legume Cover Crops to a Wheat Crop in Southern Spain.
13:00h.	Dara M. Park	Rootzone Soil Volumetric Water Content and Crop Yield from Contrasting Tillage and Cover Crop Strategies in South Carolina, USA
13:45h.	Saskia Keesstra	The road towards climate-smart and sustainable management of agricultural soils in Europe: knowledge needs and research approaches
14:00h	discussion Soils	
14.15	Break	
	Session Biota and agriculture	chair: Saskia Keesstra

16:15h.	Dara M. Park	FLORECE! Review and Opportunities for Growing Undergraduate Experiential Learning in Sustainable Agriculture
16:30h.	Jesus Rodrigo-Comino	Assessment of erodibility in a vineyard in Granada through rainfall simulation and mini-disk infiltration experiments
16:45h.	Payton Davis	Cover Crops and Climate Impact Temperature and Volumetric Water Content in Southern Piedmont Soils in South Carolina, USA
17:00h.	Jesus Rodrigo-Comino	Designing of a novel methodological approach with remote sensing web platform Apps and UAVs for precision agriculture monitoring surveys of Mediterranean woody crops
17:15h.	Saskia Keesstra	The potential role of fire management in the Green Deal
17:30h	Artemi Cerdà	Soil and water losses in citrus plantations. Drip versus flood irrigation.
17:45h	Break	
17:45h.	Francisco Escriva-Saneugenio	The disappearance of the small wetlands on the coast of Daimús-Marenys de Rafalcaid (València, Spain)
17:45h.	Luca Salvati	Water scarcity, soil quality, peri-urban agriculture, forest fires and desertification under the lens of economic crisis
18:00h.	Ana Pérez Albarracín	Soil and water losses in citrus plantations. Drip versus flood irrigation.
18:15h.	Antonio Giménez Morera	The role of extreme rainfall events on soil erosion on plots under tillage and plant covered treated management. A 7-year assessment under Mediterranean climatic conditions
18:30h.	Artemi Cerdà	The importance of flood irrigation in Mediterranean-type ecosystems
19:00h.	Discussion open	next discussion Biota and agriculture meeting and closure
19:30h.	Discussion open	next biohydrology meeting and closure
20:30.	Closure	Thanks to the University of Valencia, Department of Geography (Ana Camarasa), Faculty of Geography and History (Josep Montesinos), Centre International of Gandia (Carme Melo). We thank Joan del Alcazar for the contribution to the success of this meeting.



Friday, October 20th 2023

Visit to the Marjal de Pego-Oliva Natural Park guided by Fernando Sendra and Artemi Cerdà

The Marjal Pego-Oliva Natural Park, with an area of 1,255ha. and surrounded by the Bullent or Vedat rivers, in the northern part, and the Racons or Molinell river, in the southern part, it is a fantastic example of the great Mediterranean coastal wetlands, which although in recent centuries like the rest of the wetlands Valencia has lost an important part of its surface, due to the advance of agriculture and anthropogenic pressure in general, it continues to be an ecosystem with great biodiversity and a refuge for the species that inhabit it, with a multitude of bloomers known as "ullals". During the visit, we will learn in depth about the space, its coexistence with other human uses and the challenges it faces.

9.30. Departure from Faculty of Geography and History. Valencia

11.00. Visit to the Natural Park La Marjaleria We talk about the evolution, formation of wetlands in Valencia and across the globe.

14.30 time for lunch

16.00 visit to the Rice Museum. Discussion about the management of wetlands with the example of Marjal de Pego-Oliva. The use of the wetlands in the future under the pressure of agriculture and urbanization

19.00 Closure



Saturday, October 21th 2023

Visit to the irrigation system of the Safor region (L'Hort de Gandia) guided by the book of Vicente Fontavella (+), Francisco Sendra and Artemi Cerdà

The territory where the Gandia orchard is located, on extensive coastal alluvial plains, is of great quality and fertility for cultivation, enabling ancient agriculture that the great civilizations that historically inhabited the territory, such as the Iberians, the Romans, have already begun to develop. and especially the Muslims of the time of Al-Andalus, who knew how to take advantage of the fertility of the soil to develop powerful agriculture. The hydraulic infrastructure such as mills, ditches, weirs, brazales, splitters, cenias, qanats, wells, etc., developed an irrigation system used to this day. During the visit we will observe the typical Mediterranean irrigated agricultural landscape and understand the hydraulic infrastructure. We will also understand the importance of protecting traditional irrigation systems, currently in progressive abandonment due to the development of drip irrigation.

8.15. Departure from Valencia (cross of Carrer Guillem de Castro and Carrer de l'Hospital)

9.30 Break

11.00 visit to irrigated gardens of Gandia: weirs, canals, ditches. Lighthouses and dark houses. we discuss the pros and cons of the introduction of drip irrigation and the cultural heritage of flood irrigation.

9.30. Visit to the Natural Park

14.00. Break

16.00 Visit to the final part of the irrigation system and the urbanised area at the beach.

19.00 back in Valencia



Sunday, October 22th 2023

Visit to the coastal land and the marine hydrology at Cullera to Daimús Beach

In recent decades, the Mediterranean coast has experienced a profound transformation of its territory to adapt it to the service sector and tourist activity, the waterproofing of soils, the fragmentation and elimination of ecosystems along with the overcrowding of coastal areas, have caused a series of environmental problems and risks that we will analyze and discuss during the visit to Daimús beach and its surroundings.

8.00 Departure from Valencia (cross of Carrer Guillem de Castro and Carrer de l'Hospital)

9.00 Mouth of the river Júcar.

10.00 View from the Cullera hills

11:00 Visit the coastal area of Cullera. The loss of houses and beaches.

13:00 The north of the port of Gandia. Sediments and marine currents

14:00 The lack of sediments in Daimús beach.

15:00 Break

16:00. Centre Internacional de Gandia (Carrer Tossal 8, Gandia).

16:10. Opening by Jesús Rodrigo

16:30. Artemi Cerdà. Fires and biohydrology

17:00. Open discussion.

20:00. Closure.

