



GREETINGS FROM NAVARINO ENVIRONMENTAL OBSERVATORY

EDITED BY NEO TEAM

This newsletter summarizes research and educational activities undertaken at NEO, towards our continuous pursuit of knowledge for a more sustainable future under a changing climate.

Thank you for being a vital part of the NEO community.

Happy Reading!

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INTERNSHIPS

MEET OUR INTERNS

During summer 2023, NEO has provided the opportunity to six students to implement their internship in relation to on-going research projects.

Alex Galal, postgraduate student at Deree - The American College of Greece, participated in our fieldwork campaigns at Gialova. His main interest was on the analysis of the surface water quality in the lagoon and the status of the groundwater in the aquifer. In addition, he took water and sediment samples in order to analyse the condition of the marine life in the lagoon.

Panagiotis Paraskevopoulos, bachelor student at the School of Chemical and Environmental Engineering of the Technical University of Crete, was engaged in the SALAM-MED project. Having a good relationship with local farmers, once his origin is from the area, he conducted a questionnaire survey about the irrigation in the olive orchards. He also participated in the fieldwork campaigns at the experimental plots.

Francesca Spinou and **Athina Maltsinioti**, bachelor students at Deree - The American College of Greece spent some time during August at NEO working on two different projects. Their research involved fieldwork and data analysis for monitoring local reptile species and touristic pressure at Voidokilia beach.

Thanos Kouniakis and **Ionas Kemaloglou**, bachelor students at the University of Patras (Department of Fisheries and Aquaculture, and Department of Agriculture) were hosted at NEO facilities and did their internship in collaboration with Yialova lagoon enterprises (fishing company). Among others, they were assigned with the sorting of sediments from the lagoon, aiming to identify benthic organisms for assessing lagoon quality.



EDUCATIONAL VISITS

Justus-Liebig-University, September 14-18

Seven students (BSc and MSc) and their professor from the Master Studies "Mensch - Klima - PaläoUmwelt" of the Department of Geography at Justus-Liebig-University of Giessen, visited NEO in September. The group visited many sites in the area including Gialova lagoon, Paleokastro and Methoni. The aim for the students was to learn about the challenges of the area, prior to interdisciplinary group discussions around the opportunities for a sustainable future. Under observed, and projected climate change conditions, the need for accurately science informed policy was identified as a key factor towards sustainability.

Heidelberg University, September 30-October 4

A group of 14 Master students of Geography from Heidelberg University spent 5 days at NEO at the beginning of October. Their visit was part of a two week long field trip across the entire Peloponnese, which focused on aspects of karst hydrology, geomorphology, land-use patterns now and then, and (palaeo) environmental variability in the region. In the surroundings of NEO, the students learned about coastal processes like the beach rock formation just "at the shores" of NEO, and the evolution of the lagoon environment at the Gialova-Navarino complex.

Värmdö Gymnasium, October 15-22

The class 21NAD from the NaSa-programme at Värmdö Gymnasium visited NEO in October and that was the 10th year that a student group from Värmdö Gymnasium visited NEO. 28 students and 3 teachers participated in several excursions and fieldwork activities in the area. Among others, they learned about east Mediterranean geography, biology, history, and most importantly about sustainable tourism and agriculture.



FIELD WORK VISITS AND WORKSHOP



Pylos Geoarchaeological Project June 17-July 9

The Pylos Geoarchaeological Program (GEAPP) is a synergy of the Ephorate of Antiquities of Messenia and the Laboratory of Archaeometry of the Department of History, Archaeology and Cultural Resources Management - University of the Peloponnese, operates towards the archaeological and cultural environment of the area of Pylos for the years 2021-2025.

The research team in collaboration with associates from the GEAPP, in total 11 people, stayed at NEO station and used our facilities for studying the excavated and recovered material and for processing environmental data.



The American College of Greece (ACG) March 23-28, June 1-4, November 23-26

ACG and NEO, continue their successful synergy seeking to strengthen their ties by engaging into meaningful workshops and field research, in order to holistically understand and appreciate the multifaceted entity that is an ecosystem, especially a fragile and important biotope as the UNESCO - protected Gialova region.

Always aiming forward towards education for sustainability through immersive and experiential learning, more than 20 students from a variety of majors offered at ACG, have been visiting NEO to pursue crucial research and educational goals in one of the most pristine biotopes in Greece.



MSc student from SU September 20 - October 14

Miranda Lindholm, a master student at the Department of Physical Geography, Stockholm University is studying Gialova lagoon. The aim of her thesis is to assess the water quality and level of eutrophication using imagery from the Copernicus Programme's Sentinel-2 satellites and validating those with in situ data. She worked closely with the local fishermen in the lagoon, to install sensors for measuring incoming and reflected radiation, but also to conduct regular measurements of water quality in the field (e.g. salinity, dissolved oxygen, temperature), and take water samples for nutrient analysis (phosphate, nitrate, nitrite and ammonia) in the lab.



Preparatory work for a new PhD October 15- November 15

Ioanna Michail, a master student from the [Mediterranean Agronomic Institute of Chania](#) (MAI Chania), who has implemented her MSc thesis at NEO, is about to start her PhD. She visited NEO in October for one month, in order to participate in several fieldwork activities for SALAM-MED project. Ioanna has been involved in SALAM-MED since its initiation, and she has already contributed to its activities by helping out during the installation of the experiments, and by conducting in situ ecophysiology measurements in the olive orchards and analysis of soil samples in the lab.



SU workshop at NEO October 21-24

NEO team organized a workshop with 20 researchers and professors from Stockholm University (SU). The main aim of the event was to introduce NEO to a variety of SU departments, thus to increase SU research and educational activities at the station.

During the workshop, the invited group had the opportunity to stay at NEO field station, visit NEO facilities and experimental plots, and explore the local area (Gialova lagoon, Paleokastro, Nestors cave, Voidokilia beach), prior to discussions about tentative future activities and collaborations.



Fieldwork activities

During summer we did a lot of fieldwork in collaboration with our colleagues from the Academy of Athens and local stakeholders. In particular we installed scientific equipment, 9 soil moisture sensors and 1 agrometeorological station in the olive orchard. Additionally we performed soil samplings and eco-physiological measurements in order to understand how irrigation affects the growth of olive trees and the qualitative characteristics of the soil.

General Assembly meeting in Greece

In September 27-29 we had the pleasure to host the General Assembly meeting in Messenia, introduce to our partners the Greek Living Lab and present our research work plan. The fieldtrip day included visits at the experimental plots and meetings with local stakeholders. Furthermore we welcomed all of our colleagues at NEO station where we presented our work and had a tour at our facilities.

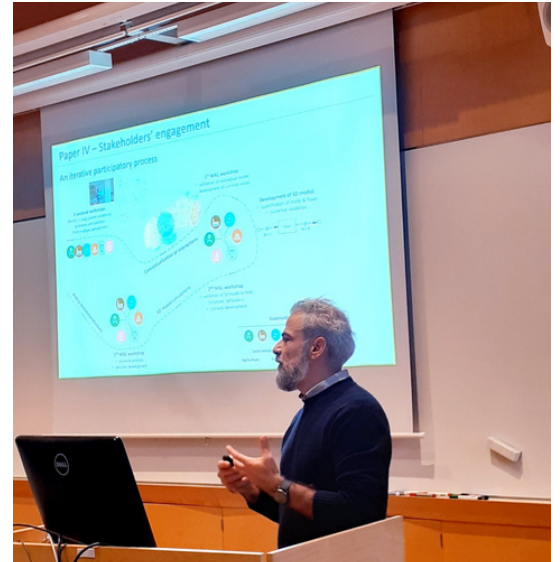


Experimental development

Despite the difficulties that came up during the set up of both experiments (irrigation and soil erosion) we always tried to find a practical solution and resolve our issues. During this period we had to do a lot of fieldwork especially with the soil erosion assessment and for the moment everything is running properly.

“Towards co-management of Gialova Lagoon: A Natura 2000 coastal wetland in Messinia, Greece.”

On December 18, Giorgos Maneas, NEO Station Manager, has successfully defended his PhD thesis at the Department of Physical Geography, Stockholm University.



Towards co-management of Gialova Lagoon

A Natura 2000 coastal wetland in Messinia, Greece

Georgios Maneas



The thesis is about Gialova Lagoon (GL), a Natura 2000 site in Messinia (Greece). GL has been degraded by past human interventions (e.g. diversion of freshwater inputs), which have led to salinization and associated degradation of wetland ecosystem services.

The overall aim of this thesis was to assess the problem of GL salinization and to provide alternatives for wetland restoration under a changing climate, from a social-ecological perspective.

The PhD work was based on a variety of concepts and methods (e.g. field monitoring, consultation with stakeholders, participatory modelling), which allowed for the integration of scientific knowledge and local expertise/needs into a decision-support-making-tool towards the co-management of the GL Natura 2000 site.

In this journey, a fundamental role for Giorgos was not only to provide robust data and knowledge, but also to engage with stakeholders, and to respect their views and concerns following co-management approaches.

[LINK TO THE THESIS](#)