

# NAVARINO ENVIRONMENTAL OBSERVATORY

NEO Management

Tuesday, 16 April 2013

## NEO NEA #8 (January – March, 2013)

NEO stands for Navarino Environmental Observatory. But NEO in Greek (νέο) means news as well and NEA is its plural. So this is our news!

### Activities

#### *Past*

##### Research

- NEO-researchers HC Hansson, Radovan Krejci, Peter Tunved and Vangelis Gerasopoulos visited NEO on 21-25 January in order to re-install (after malfunction and maintenance) the Magee aethalometer and conduct maintenance work on Differential Mobility Particle Sizer analyser and Soot photometer, operating at the Tower Library atmospheric station (Fig. 1). Additionally, primary investigation was made concerning moving part of the atmospheric measurement from the Library Tower at Navarino Dunes to the Meteorological Station in Methonia. Initial discussions by Vangelis Gerasopoulos with Hellenic National Meteorological Service regarding a closer collaboration with NEO were very positive.



Figure 1: Maintenance work at the Tower Library atmospheric station.

- NEO contributed with measurements to an existing THALIS-NSRF project entitled "Determination of sources and physicochemical properties of fine and ultrafine aerosols affecting the climate in

Greece". The project is collaboration between groups from 3 Research Institutes (Foundation for Research and Technology-Hellas, National Observatory of Athens, NSCR Demokritos) and 5 Universities (Aegean/co-ordinator, Crete, Patras, Ioannina, Georgia Tech). The general objective of the project is to identify the sources and to elucidate the processes by which aerosol particles and their precursors emitted in and transported to Greece affect local air quality and climate. In the winter campaign (10 Jan to 10 Feb 2013) emphasis was put on increasing wood burning and the problem of smog in big cities. Measurements were conducted in Athens, Patras, Thessaloniki, Heraklion and Ioannina while Finokalia and NEO were chosen as background sites. The first results of the campaign were communicated to the media during an official Press Release that took place on 28/02/2013 at NSCR Demokritos premises, with specific reference to NEO.

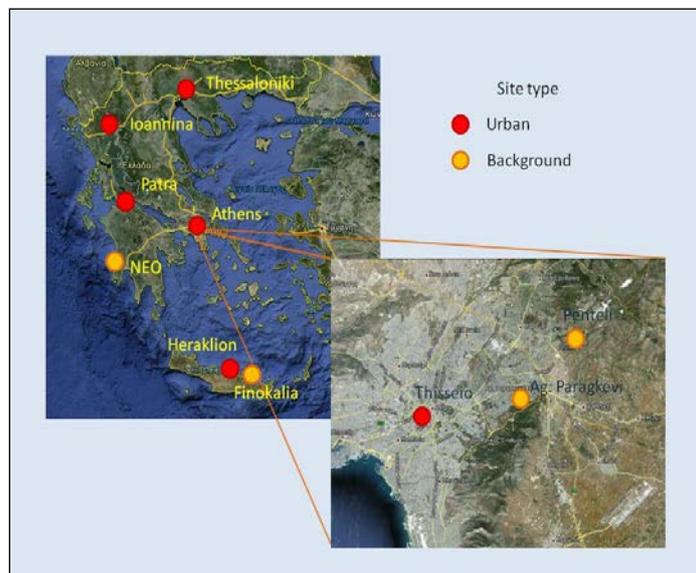


Figure 2: Urban and background sites participating in the THALIS-NSRF project, for the monitoring of aerosol emissions and transport processes.

- A kick-off meeting for the project "Late Quaternary Climate Variability and Vegetation Dynamics in southern Greece" was held at the Swedish Institute in Athens on 29 January. Karin Holmgren, Nikos Kalivitis, Takis Karkanis, Elena Xoplaki and Giorgos Maneas attended the meeting.
- Alasdair Skelton along with PhD student, Ruben Fritzon (Stockholm University) and colleagues from Stockholm University (Professor Arjen Stroeven) and Purdue University (Professor Mark Caffey) visited Lakonia region in order to do some field work on the exhumed surface of the Sparti Fault, 17-27 February (Fig. 3). NEO Station Manager, Giorgos Maneas joined them in field for two days. A portable X-ray fluorescence (XRF) analyzer was used to detect exhumed soil weathering profiles on the fault surface. Sub-surface samples were collected for chlorine-36 dating.



Figure 3: Field work at the Sparti fault.

- Martin Finné, Karin Holmgren and Giorgos Maneas in collaboration with archaeologist M.A. Ilias Liakopoulos conducted field work in Kapsia cave, Arcadia prefecture on 7-8 March, after permission had kindly been given by the Ephorate of Palaeoanthropology and Speleology of Southern Greece (Fig. 4). Cave air temperature, humidity, CO<sub>2</sub> and barometric pressure were measured.



Figure 4: Martin Finné and Ilias Liakopoulos outside Kapsia cave.

- In In March 19-21, Lucile Verrot, Katerina Mazi and Antonis Koussis did fieldwork in Gialova Lagoon and its surrounding watersheds –with the valuable help of Giorgos Maneas (Figs 5). Primary purpose of the work was to identify suitable sites for monitoring of soil moisture, and of the groundwater system feeding the lagoon, farther upland and near the wetland, including Tyflomitis Springs. The stage-gauging stations on Sellas and Giannouzagas Streams were also inspected. Having an operational rainfall-surface water-soil water-groundwater monitoring network is fundamental for understanding the functioning of the hydrology of Gialova Lagoon.



Figure 5: Antonis Koussis, Giorgos Maneas and Lucille Verrot close to Tyflomitis springs (Gialova lagoon) and Selas.

## *Scientific Publications*

The first three, NEO related publications, for 2013 are published:

- Mazi K., Koussis A.D., Destouni G., 2013. Tipping points for seawater intrusion in coastal aquifers under rising sea level. *Environ. Res. Lett.*, 8, 014001, doi: 10.1088/1748-9326/8/014001, 2013
- Weiberg Erika and Finne Martin, 2013. Mind or Matter? People-Environment Interactions and the Demise of Early Helladic II Society in the Northeastern Peloponnese. *American Journal of Archaeology*, 117, 1-31, 2013.
- Lyon, S.W., M.T. Walter, E.J. Jantze, and J.A. Archibald, 2013. Training hydrologists to be ecohydrologists: a “how-you-can-do-it” example leveraging an active learning environment for studying plant-water interaction, *Hydrol. Earth Syst. Sci.*, 17, 269-279, doi:10.5194/hessd-17-269-2013, 2013.

## Education

### Student projects

- **Solar Atlas of Messinia.**

A student project launched in 2011 regarding a Solar Atlas of Messinia, was carried out during 2012 and presented in a report that was released in March 2013. The project aimed to provide a useful tool for supporting strategies- and decision-making in projects that are related to the production of energy from solar power at Messinia. The study was led by Andreas Kazantzidis, in collaboration with Efterpi Nikitidou and Vassilios Salamalikis from the Laboratory of Atmospheric Physics (University of Patras). The study utilised ground based measurements at NEO, satellite images and theoretical calculations using a radiative transfer model to produce maps of the total energy reaching the ground as well as the energy received by inclined PV systems. The preliminary results of this study were presented during the 2nd NEO Research Workshop, 26-27/10/2012, and in the University of Patras (Laboratory of Atmospheric Physics) report: "Solar Atlas of Messinia".

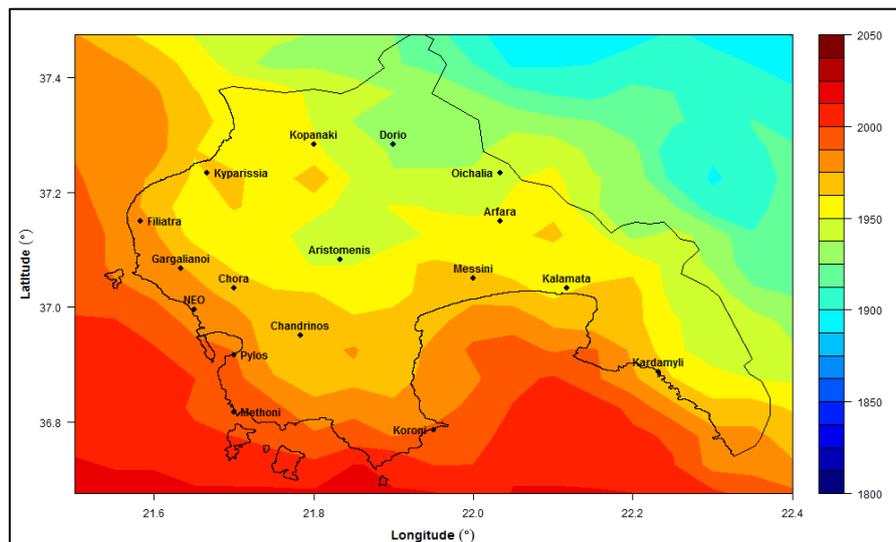


Figure 6: The energy (average (2002-2012) annual sum, kWh/m<sup>2</sup>) received by a PV system facing the Sun at Messinia

### Courses

- The third Physical Geography course at NEO took place on March 8–14. Sara Cousins, Ingmar Borgström and Martin Finné were the instructors of the field course and 23 students from Stockholm University attended the course. During the excursion they visited a number of different sites mainly in Messinia. Among them, the Gialova/Navarino Bay area, Artemisia, Verga, Loussios River, Kapsia Cave, Mesochori, Methoni and Finikounda.



Figure 7: Students and Professors during their visit to Loussios river.

## Events

- The 'Urban Minds' Workshop, was held on 7-10 January in the NEO Research Station, Costa Navarino, Messinia, Greece (Fig. 8). Urban Minds is a research program led by Professors Paul Sinclair and Gullög Nordenskiöld Uppsala University and in which Karin Holmgren and Martin Finné participate.

The workshop was arranged for the Urban Minds steering-group in order to finalize a six-year program proposal for submission to Riksbankens Jubileumsfond (RJ) and the Knut and Alice Wallenberg Foundation. The initial project (a book, published in 2010, titled: *The Urban Mind. Cultural and Environmental Dynamics*, available in digital fulltext at <http://uu.diva-portal.org/smash/record.jsf?searchId=1&pid=diva2:384594>), is being developed into a large-scale research program, involving a combination of comparative and in-depth research on urbanities and urbanism in three regions: Scandinavia and Western Europe, the Eastern Mediterranean and the Near East, and, southeastern Africa and Madagascar. Quantitative models will be developed to study regional patterning of urban settings through time and the Peloponnese during a 3000-200 BCE time-frame will be the focus area for the Eastern Mediterranean region.



Figure 8: Participants at the 'Urban Minds' Workshop outside the new building.

## Dissemination

- On January 18, Giorgos Maneas attended the International Archaeometry Award – Costa Navarino ceremony that took place at the Amphitheater of the Faculty of Humanities and Cultural Studies in Kalamata.
- During January 2013, Karin Holmgren and Giorgos Maneas had a series of meetings with researchers in Athens, including:
  1. A meeting with marine science researchers from Hellenic Center of Marine Research (HCMR), Dr. V. Lykousis, Dr. A. Gogou, Gerasimos Korres and Dimitris Sakellariou to explore the possibilities for NEO to engage in marine bio- and geosciences. Apart from the scientists at HCMR, Dr. M. Triantophyllou from University of Athens, Dr. E. Xoplaki, Justus-Liebig-University Giessen and Martin Jakobsson, marine geoscientist, from Stockholm University participated in the meeting.
  2. A meeting with the vice-Rector of the University of Peloponnese and Professor Nikos Zacharias to explore common science fields of potential collaboration. It was agreed that a new meeting with research groups from several departments of the University of Peloponnese will be held at NEO during 2013.
  3. A meeting with researchers from National Observatory of Athens (NOA), introduced by Evangelos Gerasopoulos. Additionally, Giorgos Maneas met with Mr. Nikos Matsopoulos, an observational astronomer who will assist at the setup of the telescope at NEO.
- On February 4, Mr. Giannis Papaioannou visited NEO station in order to interview NEO director for the needs of his book.
- On February 4, NEO researcher Steve Lyon gave a lunch seminar at Stockholm University about the ecohydrology course that was ran at NEO during the summer 2012. Also, Josefin Klein gave a short presentation of her research following up from the course.
- On March 5, Karin Holmgren organized a NEO meeting in Stockholm, to brief and discuss with all colleagues at Stockholm University involved in NEO-related activities, about current activities (research, education, outreach), future possibilities, expectations and plans.
- On March 7, Mr. Arno van Berge Henegouwen (EMA Micheletti Award) and Mrs. Elia Vlachou (Piraeus Bank Group Cultural Foundation) visited Navarino Natura Hall by Hellenic Postbank premises in order to evaluate the application of the interactive museum for the Micheletti Award. The Navarino Natura Hall team (Vassilis Karakousis, Natasha Glaraki, Fotis Stavrianopoulos and Giorgos Maneas) gave them a tour on site. The next day, the two judges visited NEO and met with NEO Director.
- On March 11, Mrs Natasha Blatsiou, journalist working for Kathimerini national newspaper, visited NEO and interviewed Karin Holmgren and Giorgos Maneas for an article about NEO (Fig. 9).



Figure 9: NEO Director, Karin Holmgren interviewed by Mrs Natasha Blatsiou, a journalist from Kathimerini.

- On 22 March, Karin Holmgren marketed NEO-related research and educational activities at a big event arranged for Swedish School pupils, during the World Water Day.
- The Stockholm University has produced a third film about NEO, "A dream came true" available at: [www.youtube.com/watch?v=0h75EQLekwc](http://www.youtube.com/watch?v=0h75EQLekwc)
- The production of a new film/s presenting the activities at NEO has started. The final edition/s is estimated to be ready at the end of the year. The production is performed by Dionisis Dimitrakopoulos under the leadership of Giorgos Maneas
- The Swedish Embassy in Athens is marketing NEO on
  - [www.swedenabroad.com/en-GB/Embassies/Athens/Current-affairs/News/Navarino-Environmental-Observatory-NEO---upcoming-educational-events--sys/](http://www.swedenabroad.com/en-GB/Embassies/Athens/Current-affairs/News/Navarino-Environmental-Observatory-NEO---upcoming-educational-events--sys/)
  - [www.facebook.com/EmbassyOfSwedenInAthens](http://www.facebook.com/EmbassyOfSwedenInAthens)
  - <https://twitter.com/SwedeninGR>

### Natura Hall

- A call for the recruitment of six volunteers to Navarino Natura Hall has been announced at Swedish and Greek Universities and institutions. Deadline for applications is April 15.

## *Upcoming*

### Research

- Members of the atmospheric group from the AoA and NOA (E. Gerasopoulos, V. Amiridis, S. Kazadzis) will visit NEO to reinstall the main PC that operates the radiometric station and perform alignment tests and standard maintenance.
- Karin Holmgren will visit field sites that are to be included in her new research project, for a first inspection and planning purposes.
- Håkan Grudd, Christos Zerefos, Konstantinos Eleftheratos, Christos Repapis, and Konstantinos Philandras plan to sample oak trees at Chaironeia as part of a dendroclimatological project in Central Greece.
- Paul Krusic, is planning a trip to north Greece in order to do some fieldwork for his dendroclimatology research.
- Johan Kleman and Ingmar Borgstrom are planning a field trip to Taygetos Mountain on May 4-7. A month before, Peter Adler, a bachelor student from Stockholm University, will do fieldwork on Mani April 6-14.

### Education

- The Botany course will take place at NEO on 20 – 27 April 2013.
- The Ecohydrology course will take place at NEO on 9 – 15 June 2013. A limited number of greek students will have the opportunity to attend the course
- The Second Announcement for Bert Bolin’s summer school entitled ‘The Subtropical Frontier’ has been posted. It will take place at NEO on 23 June – 3 July.
- Collaboration between NEO and the Aegean University for students practice.

### Events

- The Central Asia workshop will be held at NEO on May 8-12.

### NEO management

- The Steering Committee meeting will be held at TEMES (Athens) on April 23-24.
- The new vice-chancellor at Stockholm Universtiy, Astrid Söderberg-Widding will meet TEMES Director Achilles Constantakopoulos on 24 April.

### Natura Hall

- An observational astronomer, Mr. Nikos Matsopoulos from the National Observatory of Athens, will visit NEO in order to set up the telescope for the Astronomy nights.

## *Visits to and from NEO*

- NEO Director, Karin Holmgren, was at Messinia from 27 January to 6 February and from 6 to 14 March and will be at NEO during the periods: 14-27 April and 15 June- 7 July.
- On 25 April Karin Holmgren will give a lecture about NEO at the Swedish Institute in Athens.
- NEO Station Manager, will visit Stockholm on May 18-25 to have a series of meetings with colleagues from Stockholm University.