

Call for applications

3rd Summer School on the Island of Samothraki, Greece
Aquatic & Social Ecology: Theory and Practice

9-22 July 2016



Organized by: the Hellenic Centre for Marine Research, the Vienna Institute of Social Ecology, Alpen Adria University and the University of Patras

Supported by: Municipality of Samothraki

Under the auspice of: the Special Secretariat for Water, Ministry of Environment & Energy of Greece, and the Greek UNESCO-MAB Committee

Introduction

Samothraki is a Greek island in the north-eastern corner of the Aegean archipelago endowed with high cultural and natural assets. However, there is at present a fragile situation of slow decline of population and ecological challenges that might possibly be brought to a tipping point by impacts of the Greek economic and governance crisis, as well as climate change.

The Vienna Institute of Social Ecology, Alpen Adria University (www.aau.at/socec) has been conducting research on the social metabolism of the island of Samothraki since 2007, acknowledged by the Sustainability Award 2010 received by the Austrian Ministry of Science and Research. This interdisciplinary research on energy, material flows, land use and the island economy, and the simultaneous networking with local civil society and stakeholders, prompted the communal administration, unanimously, to make an effort at turning the whole island into a UNESCO Biosphere Reserve (For more information visit: <http://www.sustainable-samothraki.net>).

The Hellenic Centre for Marine Research (HCMR, www.hcmr.gr), Institute of Marine Biological Resources & Inland Waters (IMBRIW, www.imbriw.hcmr.gr), has been studying the island's

freshwaters for 15 years. From 2013 onwards, HCMR, in collaboration with the Municipality of Samothraki, initiated an inland waters research initiative, based on self-funding. In the frame of this effort, springs, streams, wetlands and lagoons have been investigated for their chemical-physicochemical and ecological quality. Thus, related data refer to hydromorphological and habitat features, physico-chemical results and biological characteristics. Finally, a Memorandum of Collaboration between HCMR and the Municipality of Samothraki has been signed to establish the Samothraki Nature Observatory (16-12-2013) on the island, aiming to research, promote, manage and protect its natural heritage.

The Department of Environmental and Natural Resources Management, University of Patras, was founded in 1998. During its 17-year operation, it developed and organized, constituting well-equipped educational/research academic laboratories which are specialized in the study of inland & coastal waters, including lake, river, lagoon and coastal ecosystems, aiming at their integrated management.

The course

The course is designed as a 2-week excursion to Samothraki with the aim to learn and apply aquatic ecology and social ecology approaches in a local setting while supporting current research and building synergy with the UNESCO Biosphere Reserve process. The course gives students the opportunity to engage in a real-life project and utilise their scientific training to support the process further, namely the creation of a management plan with a set of activities towards sustainability, and a science plan for further research on the island that would also meet local interests. This will provide students the experience of participating in a transdisciplinary research process, being exposed to a search for solutions for sustainability and development challenges, and learning to interact with stakeholders in a culturally challenging environment.

The course will conclude with a reflection on the experiences and written student reports on the results of their specific research. We will make an attempt to interpret these results within the framework of sustainability and development studies. The course addresses advanced Master Degree students from both the natural and social sciences (environmental sciences, environmental sociology, aquatic ecology, human and social ecology, environmental sociology, water resources management, development studies, etc.) with an interest in sustainability and local developmental challenges.

Lectures and methods

Theoretical input will be provided by renowned scholars. Confirmed speakers include: **Prof. Marina Fischer-Kowalski** (Vienna Institute of Social Ecology, Alpen Adria University), **Prof. Klement Tockner** (Leibniz Institute of Freshwater Ecology and Inland Fisheries, Berlin), **Prof. Michael Scoullou** (Department of Chemistry, University of Athens, President of the Greek National Committee of UNESCO MAB), and **Ass.-Prof. Núria Bonada** (Department of Ecology, University of Barcelona).

For the most part, students will be split in small groups and conduct desk and fieldwork in an array of social and natural science methods frequently used in socioecological and aquatic research. Each method will be practically demonstrated by a tutor guiding the small student groups throughout the field work. Each student participant will focus on one (and be exposed to another 1-2) of the following methods and research questions:

- (1) Animal numbers and their drivers on the island: livestock counting and estimation of livestock densities on different habitat types by distance sampling. Analysing farmers' income by sources (utilization of animal products on markets, in subsistence, from state subsidies). Creating an empirically based estimate of current livestock numbers and putting it into perspective of causes and impacts.
- (2) Problems of overgrazing and soil erosion: analysing the impacts of agricultural land use and land-cover change on the vegetation cover. Mapping vegetation cover and erosion sites, discussing landscape change, its drivers and impacts. Exploring the outcomes of recent animal feed seeding experiments.
- (3) Exploring the current social metabolism of the island in terms of material and energy flow analysis by field observation and expert interviews, with a special focus on the fate of wastes. Exploring potential social tipping points (undersupply that might cause population decline) in the health and education services. Structural legal and statistical analysis and stakeholder interviews.
- (4) Local initiatives and their chances to drive socioecological change. Oral narratives and interviewing with local initiatives on whether cultural change toward collaboration may occur and widen the range of possible solutions even during a prolonged economic deadlock.
- (5) Aquatic chemistry and macroinvertebrate fauna of Mediterranean streams. Field protocols, field measurements and sampling campaigns in streams of Samothraki will be carried out in order to explore biodiversity issues, assess their ecological status and interpret the factors and processes that control it.
- (6) Stream riparian and landscape module. Visual survey techniques will be utilized to collect floral, wildlife and anthropogenic degradation data to assess ecosystem integrity at the riparian corridor and landscape scale. Three survey methods will be completed at a number of stream sites.
- (7) River hydrology, physical processes, stream hydrologic assessment, watershed assessment. Water resources management, watershed management. Survey to conceive the island's water resources management scheme, including an estimation of water uses and understanding of common irrigation practices.
- (8) Visual survey techniques, protocols and indicators for the ecological assessment of the Mediterranean sublittoral zone, with emphasis on benthic ecosystem structure and functions. Fieldwork to collect data within the island's marine Site of Community Importance (GR1110012). Analyze and report on identified status and trends. There will be saltwater, you've been warned.

Practical information

Location and access: The island of Samothraki is located 25 miles south of the coastal city Alexandroupolis, the only entry point to the island. There are daily ferries connecting Alexandroupolis with Samothraki. The trip lasts approximately 2 hours and 15'. For a ferry schedule visit: <http://www.saos.gr>. You can reach Alexandroupolis by plane changing in Athens; alternatively you can fly to Thessaloniki or Kavala and continue by bus. Due to

infrequent boat connection (usually once per day), plan your trip in advance, keeping in mind you might require an overnight stay in Alexandroupolis.

Accommodation: Accommodation will be provided at the island's municipal camping site, a unique 20.000 m² area shaded with native plane trees reaching all the way to the sea. Please bring your own tent!

Student fees: There is a fee of €350 that will cover attendance to theoretical and practical lectures, teaching of field work, accommodation, local transportation, half board (breakfast and lunch), an official dinner, a one day scientific snorkelling tour by boat and a two-day trekking tour combined with overnight free camping at the springs of Fonias (Karya), one of the main perennial streams of the island.



"Karya", near the Fonias springs, where the summer school will free camp in the wilderness.

Student credits: Participants successfully attending the Summer School will be awarded a certificate of attendance which will provide them with 6 ECTS

Deadline for applications: **20 January 2016.** Please send a short CV and motivation letter (max 1 page), together with an indication of preference from the above listed methods (**1 preferred choice, plus 3 more you would like to attend**) to: panos.petridis@aau.at and alampou@hcmr.gr.



Annex

Brief description of Samothraki Island

The island of Samothraki is located in the north-eastern Aegean Sea (Thraci, Greece). At only 178 km² Samothraki is a high mountain massif that dominates the northern Aegean Sea and packs a lot into its small size (Fig. 1). The island is bursting with picture perfect views of pristine cultural landscapes, an impressive geology and varied natural vegetation including ancient oriental plane forests, mountain wilderness, abundant fresh waters in the form springs and perennial streams with waterfalls which plunge into deep glassy rock pools, hot springs, small coastal wetlands, rocky beaches and a crystal clear seas. Samothraki is a perfect destination for naturalists, thrill-seeking adventurers and dedicated scientists; it seems to attract people who really care for its natural wonders. With a small local population of under 3,000 and a low population density (15 persons/km²), its main economic activities are agriculture, livestock breeding and small scale tourism. The island is relatively undisturbed by the modern world and remains one of the last virgin islands of Greece.



Figure 1: General overview map of Samothraki

It is thus self-evident that a large portion of this unique island with its rich biodiversity and deep history is part of the NATURA 2000 Network (Fig. 2) and is a UNESCO Biosphere Reserve candidate.

Short historical reference

According to Herodotus, the name Samothraki (Samothrace) originates from the ancient Greek word "Samos", meaning height nearby the shore. Samothraki is famous worldwide for the Winged Victory of Samothrace dating from about 200 B.C., housed in the Louvre. The island was inhabited from the Neolithic period by Pelasgians while extensive settlement took place in the 8th Century B.C. During the 7th century B.C., the Thracians built a series of towns on the facing shore. Thanks to the reputation of the Sanctuary of the Great Gods, and the mystical character of their worship, the island became a major Mediterranean religious

centre. The Great Gods also known as Kabeiroi were of the Earth and the Underworld, and the cult's mysteries and religious rituals were closely guarded secrets. The ancient ruins of the Sanctuary at "Paliapoli" (old city) are one of the most important archaeological sites in Greece. The Sanctuary's prospered until the 4th Century A.D. when the island came under Byzantine rule and entered into a steep period of decline. From 1204 and until 1457, the island was ruled by the Venetians and then the Genoan family Gattilusi, who constructed a fortress overlooking the town. The Ottoman Empire took over the island in 1457 and held it until the Balkan Wars of 1912, when Samothraki joined Greece.



Figure 2: Samothraki's Protected Areas, indicating the two NATURA 2000 sites, covering most of the island, including a large marine area. The red zone indicates the Birds Directive Site (SPA, GR1110012), while the blue area indicates the Habitats Directive Site (SCI, GR1110004).

Experiencing Nature

The clean beaches, age-old riparian groves, varied and lush cliff vegetation, subalpine rock scrub, crystal-clear waters, impressive stream valleys and so many other habitats offer an exotic setting for research and leisure. The wide variety of swimming options include thermal hot spring tubs, the sea and the river's rock-pools (locally known as "vathres"). Tiny villages provide sites for superb local gastronomic pleasures. Trekking, mountaineering, canyoning, mountain biking, kayaking, birding, botanizing, fish-watching, snorkelling and diving are amongst some of the activities that can be enjoyed on the island. Many visitors fall in love with Samothraki, these experiences take them on a journey in an experiential and apocalyptic way.

Research opportunities

Within Samothraki's exceptional landscapes, scientists may find unique opportunities for education and research. Samothraki make an interesting model to study modern and traditional management problems on a small Mediterranean island. One of the most interesting aspects is the diversity of management and conservation issues that exist in close juxtaposition, in such a small place. The island offers spectacular "near-pristine" mountain landscapes with reference spring, stream, and riparian habitats, hosting a large number of endangered and endemic animal and plant species. Rocky beaches and marine habitats

include black and white ophiolite and granite boulders, reefs and sandy shores providing ideal habitats for a rich marine flora and fauna. Traditional human land-uses have sculpted cultural landscapes and people still live close to the land and sea. We can only hope that conservation-relevant research can help protect and manage the natural and cultural integrity of the island.