EcoScope

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Oceanography & Fisheries Within The Ecosystem

Summer School 2023

ΕΛΓΟ ΔΗΜΗΤΡΑ

ARISTOTLE UNIVERSITY OF THESSALONIKI

ΔΗΜΟΚΡΙΤΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΡΑΚΗΣ DEMOCRITUS UNIVERSITY OF THRACE

Fisheries Research Institute

Nea Peramos

Kavala

Greece

25-29 September 2023

EcoScope is a Horizon 2020 research project funded under the Blue Growth Call

The Ecoscope project is co-ordinated by the Aristotle University of Thessaloniki (AUTH) and brings together 24 international partners from 18 countries across the UK, Europe, Scandinavia, Israel, Canada and the Philippines. The partners include universities and research institutions, NGO's, technology companies and businesses.

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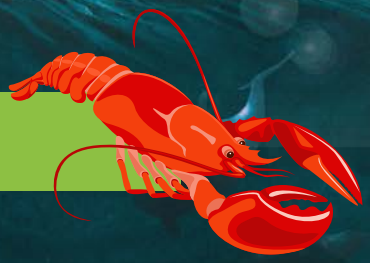
About The Programme



Programme Objectives

The overall objective of the EcoScope Summer School is to stimulate the scientific dialogue and create a learning experience on oceanography and fisheries in the ecosystem context.

After the end of the program, the trainees will be able to:

- Understand the basic concepts of oceanography and fisheries science
- Use the EcoScope project platform for retrieving, managing and processing oceanographic, environmental and fisheries data of the European Seas
- Identify the main oceanographic patterns affecting fisheries
- Retrieve and use oceanographic datasets and explore international databases on the marine environment
- Learn about the modern developments on marine instruments and sensors used in field sampling for operational oceanographic monitoring
- Learn to assemble and use fisheries data
- Understand fisheries reference points and main stock assessment models and their applicability in fisheries management
- Understand ecosystem models and their role in ecosystem-based fisheries management

Programme Novelty

Understanding the oceanographic, biogeochemical, environmental and climate impacts on fish species, habitats and ecosystems is required for adjusting current management practices (adaptive management) to achieve fisheries sustainability and ecosystem health, while at the same time maintaining economic viability. Environmental and fishery managers need to functioning of oceanographic patterns of marine ecosystems, like eddies, fronts, upwelling regions, and how these influence populations, food webs, and ecosystem dynamics. Mainstreaming scientific data into management and policy is also a challenging task. Often data is available, but not accessible to scientists, managers and policy makers in an integrated manner establishing links between the abiotic and the biotic ecosystem components. The Ecoscope platform is expected to fill this gap, allowing user to access data according to their requirements. The ecolosystem, trophic web models, like EwE will be positioned at the center of an Ecosystem-Based Fisheries Management approach, considering multi-species interactions, environmental forcing, habitat status and human activities.

The EcoScope Summer School introduces trainees to all stages of Ecosystem-Based Fisheries Management, linking fisheries to oceanography and aiming towards the sustainable Blue Growth of all EU Seas.

Target Audience

The program intends to train oceanographers, marine and fisheries biologists, young researchers, PhD students or professionals at the early stages of their carriers who are interested in learning to manage the available marine environmental, oceanographic and fisheries data to provide targeted and understandable information to the relevant end-users and policy makers.

Selection Procedure

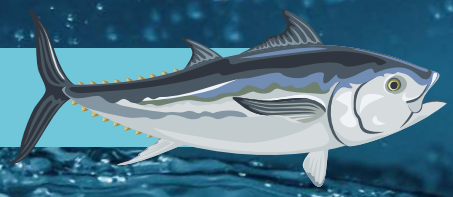
The selection of the trainees (maximum of 25) will be carried out by the two principal instructors (Professor Georgios Sylaios, Department of Environmental Engineering, Democritus University of Thrace and Professor Athanassios Tsikliras, School of Biology, Aristotle University of Thessaloniki).

Registration & Fees

Registration and attendance of lectures will be free of charge. Students are required to cover all costs related to travel, accommodation, local transportation and other living expenses.

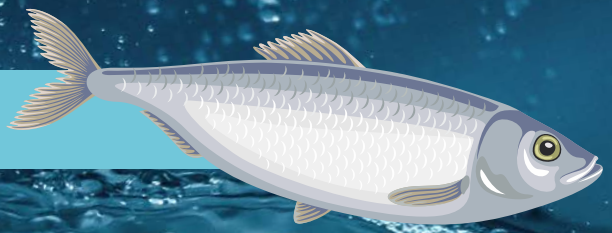
To apply, candidates must submit their CV (using the Europass CV template) and a brief letter of motivation to the Summer School Secretariat (menelaosix@gmail.com & smanousi@bio.auth.gr) by 31 May 2023.

Programme Structure



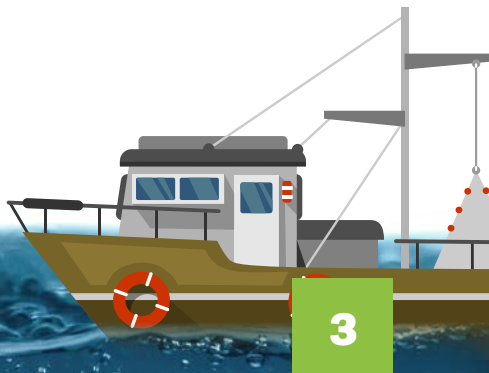
Day / Time	Course Title & Description	Tutor
Monday 25th September		
09:30 – 11:00	**Introduction to ecocentric fisheries management - The Eco-Scope project and its outputs** The EcoScope project and its contribution to ecocentric (=ecosys-tem-based) fisheries management of the European Seas will be present-ed and the main objectives, novelties, the workplan and progress to date will be illustrated.	Athanassios Tsikli-ras (AUTH)
11:15-13:00	**Linking fisheries to the ocean - Potential Products and Services of EcoScope Platform** Introduction to oceanographic features and patterns that affect fisher-ies. Plumes, fronts, eddies and upwelling processes will be discussed in the context of learning ecosystems' characteristics and patterns driving ichthyoplankton dynamics.	Georgios Sylaios (DUTH)
14:30 – 17:00	**Introduction to Oceanographic Databases - The CMEMS and EMODnet Platforms and Products** The lecture will introduce students on the existing products and data-sets accessible through the CMEMS and the EMODnet platforms. Data on ocean bathymetry, geology, seabed habitats, meteorology, phys-ic-chemical parameters, waves, currents, etc. will be accessed through these platforms. Methods and tools to easily retrieve and analyze data using Python and R programming will be shown and explained to stu-dents.	Nikolaos Kokkos (DUTH)
Tuesday 26th September		
09:00 – 13:00	**Hands-on oceanographic practical** On-line monitoring of nearshore currents, waves and SPM through deployed ADCP buoys in the Kavala Gulf. Data retrieval and analysis. Ecoscope Platform, data retrieval and analysis.	Georgios Sylaios & Nikolaos Kokkos (DUTH)
14:30 – 17:00	**Satellite image Analysis for Oceanic Fronts Identification** Sentinel 2 level 2 images will be analyzed to derive the spatial distri-bution of Chl-a concentration at sea surface. The spectral signature of each water mass and the occurrence of the main coastal and offshore hydrographic patterns, like ocean fronts, eddies and river plumes on the biophysical parameters will be discussed.	Georgios Sylaios & Nikolaos Kokkos (DUTH)

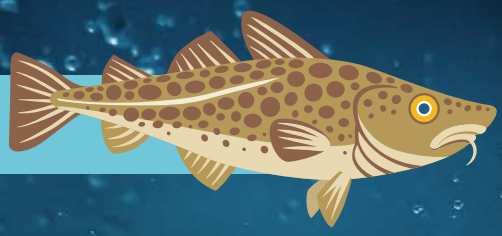
Programme Structure



Day / Time	Course Title & Description	Tutor
Wednesday 27th September		
08:00 – 20:00	**Field Trip to Coastal Fisheries and to the Coastal Lagoons of the Nestos River Delta** This day-long field trip with the vessel of FRI will be an exercise combining team-building and a hands-on experience of local aquatic ecosystems and user communities. Onshore sampling from small-scale coastal fisheries vessels, identification of main fishing gears and common fish and invertebrate species.	All tutors
Thursday 28th September		
09:00 – 13:00	**Collecting and analyzing fisheries data** The data collection framework programme will be presented and the detailed biological an fisheries parameters that are necessary for building a complete and robust dataset for use in stock assessments, the basis of fisheries management.	Kostas Touloumis (FRI)
14:30 – 17:00	**The fisheries of the northern Aegean Sea** A history of fishing in the northern Aegean Sea will be presented along with traditional fishing methods and techniques that are still used today.	Manos Koutrakis (FRI)
Friday 29th September		
09:00 – 13:00	**Fisheries stock assessment and management** The main fisheries stock assessment models used in data-poor areas and the relevant fisheries reference points will be presented and indicators that used to determine the effect of climate and fisheries on marine populations and ecosystems.	Athanassios Tsikliras (AUTH)
14:30 – 17:00	**Ecosystem based fisheries management (EcoScope Academy online course)** Ecosystem models using Ecopath with Ecosim (EwE) represent a static, mass-balanced snapshot of the ecosystem, i.e. the species it contains and their trophic interactions, covering the entire trophic spectrum from lower to higher trophic levels, including catches per fleet. EwE models have been widely used to assess the impact of fishing on marine ecosystems, address ecological questions, and, through temporal and spatial simulations, to explore management policy options and model the effect of environmental, meteorological and oceanographic changes.	Donna Dimarchopoulou (UDal & WHOI)

Please note that the Program (especially the field trips) is subject to change depending on weather conditions. Safety comes first!





Student Credits

Participants successfully attending the Summer School will be awarded a certificate of attendance, which will provide them with 2 ECTS.

Useful Information

All students should have a basic background on Computer Programming using R and Python.

Students are required to bring their own laptop with R and Python programming language already installed.

Practical Information

Location

The venue of the Summer School is the Fisheries Research Institute (FRI), a leading knowledge carrier in the fields of fisheries, the aquatic environment (coastal, transitional and inland waters), fishery exploitation and aquaculture and located near Nea Peramos. Nea Peramos a coastal resort town known for its long (3km) smooth Ammolofi beach endowed with natural sand dunes and considered as one of the beautiful beaches of northern Greece. The town, built by Greek refugees from Asia Minor in the 1920's, has also a rich cultural heritage as its history dates back to the 7th century BC with remains from that era onwards, including the remains of the ancient city, a Byzantine castle and a former Greek navy port. FRI is also at walking distance(1,1km) from Nea Iraklitsa a picturesque harbour framed by one of the most beautiful coastal villages in the region.

Both Nea Peramos and Nea Iraklitsa are a little more than 15km west to the city of Kavala, the third largest in northern Greece, built on a hillside along the coast of the Aegean sea, a cultural crossroad between the East and Wes and a destination that offers mountains, beaches, picture perfect cityscapes, breathtaking views, significant monuments and sites, delicious local cuisine and amazing places to discover at a short distance.

Access

By car: Kavala belongs to the Region of East Macedonia-Thrace and borders with the prefectures of Serres, Drama and Xanthi and also the Aegean Sea. The Egnatia motorway connects it with the rest regions and the road network is in a very good state. The distance from Thessaloniki to the city of Kavala is 155km and from Athens 655km.

By plane: The airport "Megas Alexandros" is 30km away from Kavala and another 15 or so to Nea Peramos and Nea Iraklitsa. There are daily flights from/to Athens and other European cities, particularly during summer season.

By bus: Kavala Buses provides daily itineraries from/to Athens, Thessaloniki and many other cities as well as to/from Nea Peramos and Nea Iraklitsa. You can get more itineraries and price information from the company's website. Kavala Buses: (+30) 2510 222294/223593 Thessaloniki Buses: (+30) 2310 595432 Athens Buses: (+30) 210 5120887 www.ktelkavalas.gr

By boat: The central port "Apostolos Pavlos" of Kavala connects the city with the islands of Thasos, Lemnos, Lesvos and many other islands of the Aegean.

Accommodation: Participants will have to make their own accommodation arrangements. There is wide range of accommodation offers n in both Nea Iraklitsa and Nea Peramos. Please visit the the official hotel websites or contact directly the rental room owners.

Secretariat

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Short CVs Of Tutors

Dr Donna Dimarchopoulou holds a BSc degree in Biology, a MSc degree in Hydrobiology-Aquaculture, and a PhD on fisheries biology and management. Her research activity focuses on ecosystem modelling, Mediterranean stock assessments, the benefits of fishing restrictions on marine populations and the effect of fishing and climate on marine ecosystems. Currently she is a postodoctoral researcher at Dalhousie University and Woods Hole Oceanographic Institute. She has published 25 peer-reviewed journal articles and 25 other items.

Dr Nikolaos Kokkos is a PhD graduate of the Department of Environmental Engineering, Democritus University of Thrace, Greece. Currently he works in ODYSSEA and HERMES research projects. He speaks English fluently and he is experienced in the numerical modeling of coastal hydrodynamics and biogeochemical processes.

Dr Manos Koutrakis, Fisheries Research Institute of the Hellenic Agricultural Organisation, since 1996. He focuses on fish biology, fish fauna, cetaceans, crayfish, lagoons and wetlands, ecohydrology and Integrated Coastal Zone Management. Coordinator of more than 50 EU and national research projects. He is also expert of the STECF sub group for the research needs of the European Commission. Currently he is scientific responsible of the Greek DCF project for the collection of data on fisheries and aquaculture. Author of more than 400 publications (papers, books, conference proceedings, etc.). His work has received over 2100 citations (h-index=25).

Professor Georgios Sylaios, Democritus University of Thrace, is a graduate of the Department of Geology, University of Patras, Greece. He works at the Department of Environmental Engineering specializing in the 'Management and Modeling of Coastal Aquatic Systems'. His published work comprises of 90 scientific journal papers, 1 book, 9 book chapters and more than 60 international conference proceedings with works in a broad field of coastal hydrodynamics, ecosystem modeling and water quality. His work has received more than 2000 citations (h-index=24).

Dr Konstantinos Touloumis Biologist holds a PhD in Population Ecology. In the past years he has been involved in various research projects as a scientific collaborator to Aristotle University of Thessaloniki and ELGO-Fisheries Research Institute, covering a wide area of topics: population dynamics, landscape ecology, connectivity of ecological features, diversity, fisheries management, fisheries data collection and processing and stock assessment. He is working under the Data Collection Framework as scientific collaborator, leading the group dedicated to data processing, quality and preparation.

Professor Athanasios Tsikliras, Aristotle University of Thessaloniki, School of Biology, focuses his research on fish biology, stock assessment and fisheries, the effect of climate on fish populations, and ecosystem management. He has been involved in 40 research projects, serves as associate editor in 3 journals and editorial board member in 5, and chairs the ICES Working Group on Small Pelagic Fishes, their Ecosystems and Climate Impact. Author of over 100 journal articles, 2 books, 18 book chapters and 180 other items. His work has received over 4100 citations (h-index=31).

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