



ARCHIPELAGOS INTERNSHIPS: AN OVERVIEW

Our Research Area: The Eastern Aegean

The Mediterranean is a unique sea containing exceptional biodiversity within its waters. Although it represents only 0.8% of oceans worldwide, it supports 7% of all existing marine species. Though rich biodiversity spans throughout the Mediterranean, the Eastern Basin, including the Levantine and Aegean Sea, posses 25 key hotspots.

The Aegean Sea makes up one of the most biodiverse regions in the entire Mediterranean. This area stretches approximately 214,000 km² and holds thousands of small and large islands as well as islets.

Our study area represents a unique biogeographical crossroad between three continents: Europe, Asia and Africa. With few protection or conservation measures in place to protect the biodiversity found here, all actions of the Archipelagos team aim to combat this challenge.

Our Research Area: The Eastern Aegean

Greece



Samos

Ikaria

Lipsi

Our study focus is in the eastern Aegean Sea, Greece, one of the most important marine biodiversity hotspots in the Mediterranean

A Biodiversity Hotspot

The Aegean Sea archipelago was formed by a complex series of geological events caused by tectonic movements 11 to 12 million years ago. Shifts in climate and the subsequent Pleistocene glaciation resulted in sea level fluctuations that caused fragmentation of the land masses in Europe and Asia, and led to isolation of ecosystems.

The eastern Aegean islands support rare and unique environments of international environmental significance. This includes some of the most important remaining populations of marine mammals and sea turtles in the Mediterranean; including dolphins, whales and the highly endangered Mediterranean monk seal. Protected habitats, such as Posidonia seagrass meadows and, in deeper waters, coralligenous reefs are also of great importance in this region.

Increasing anthropogenic pressure threatens this important biodiverse hotspot. It is more evident now than ever before, that this region is in urgent need of conservation.



On Sea and on Land

Island Flora & Fauna

The patterns of connectivity and separation have led to high species richness of terrestrial fauna and flora, making it an ideal area to conduct scientific research.

The Island of Samos

Samos is one of the few Mediterranean islands where golden jackals can be found. Additionally, this is the only region in Greece where Mediterranean chameleons survive.

The island has impressive biodiversity, with over 1500 species of flora.

Islands of the region are very important zones for migratory birds, particularly during the spring and autumn months.



WHO WE ARE

For over two decades, Archipelagos has been dedicated to defending Mediterranean wildlife through hands-on research and conservation, in which local communities play an active part. This cooperation creates a strategic foundation that enables and strengthens the activities of Archipelagos at local, national and global levels; therefore, allowing us to defend marine and terrestrial wildlife against ever-increasing human threats.



OUR WORK

Throughout the year, the Archipelagos team works in different areas of the Aegean to offer close proximity to the ecosystems we strive to protect. Despite adverse conditions, our dedicated research team manages in implementing significant scientific research and environmental protection. These actions are combined with applied research in the field and in the laboratory as well as developed in close cooperation with local communities, authorities, international NGO coalitions and national and international institutions.



OUR TEAM

Scientists, experts, recent graduates and students join forces with Archipelagos in the eastern Aegean islands throughout the year. Teams are comprised of people from all over the world, with a wide background of specialities and skills. Archipelagos works closely with leading universities and research institutes globally.



MARINE MAMMAL RESEARCH & CONSERVATION



The marine mammal team monitors the habitat use, abundance and distribution of cetaceans, as well as Mediterranean monk seals and sea turtles in various regions of the Greek seas. This is done by studying population structures, group dynamics, and behavior via visual and acoustic data collected on board one of our three research vessels with specialized equipment. The team also investigates the impact of major threats, such as fishing and tourism and plastic debris, on cetacean behavior. The target of our research is the implementation of efficient conservation measures and management policies.

MARINE MAMMAL TEAM CURRENT RESEARCH

- Conducting boat-based surveys to collect data on cetacean abundance, distribution and behaviour.
 - Assessing the populations of resident, transient and seasonal cetaceans through photo-ID, and creation of a catalogue of individual cetaceans in the Aegean.
 - Assessment of cetacean vocalizations through the use of a hydrophone array system and specialized software.
 - Analysis of cetacean behaviour to determine seasonal variation in activity, differences in behaviour between species, and group composition
 - Examining interactions with fisheries and maritime traffic, as well as the effects caused by overfishing and various forms of pollution: plastic, chemical and noise pollution.
 - Monitoring and protecting the remaining populations of the highly endangered Mediterranean Monk seal, in close collaboration with local communities.
 - Monitoring of environmental parameters such as sea surface temperature, salinity, pH, and concentration of dissolved oxygen.
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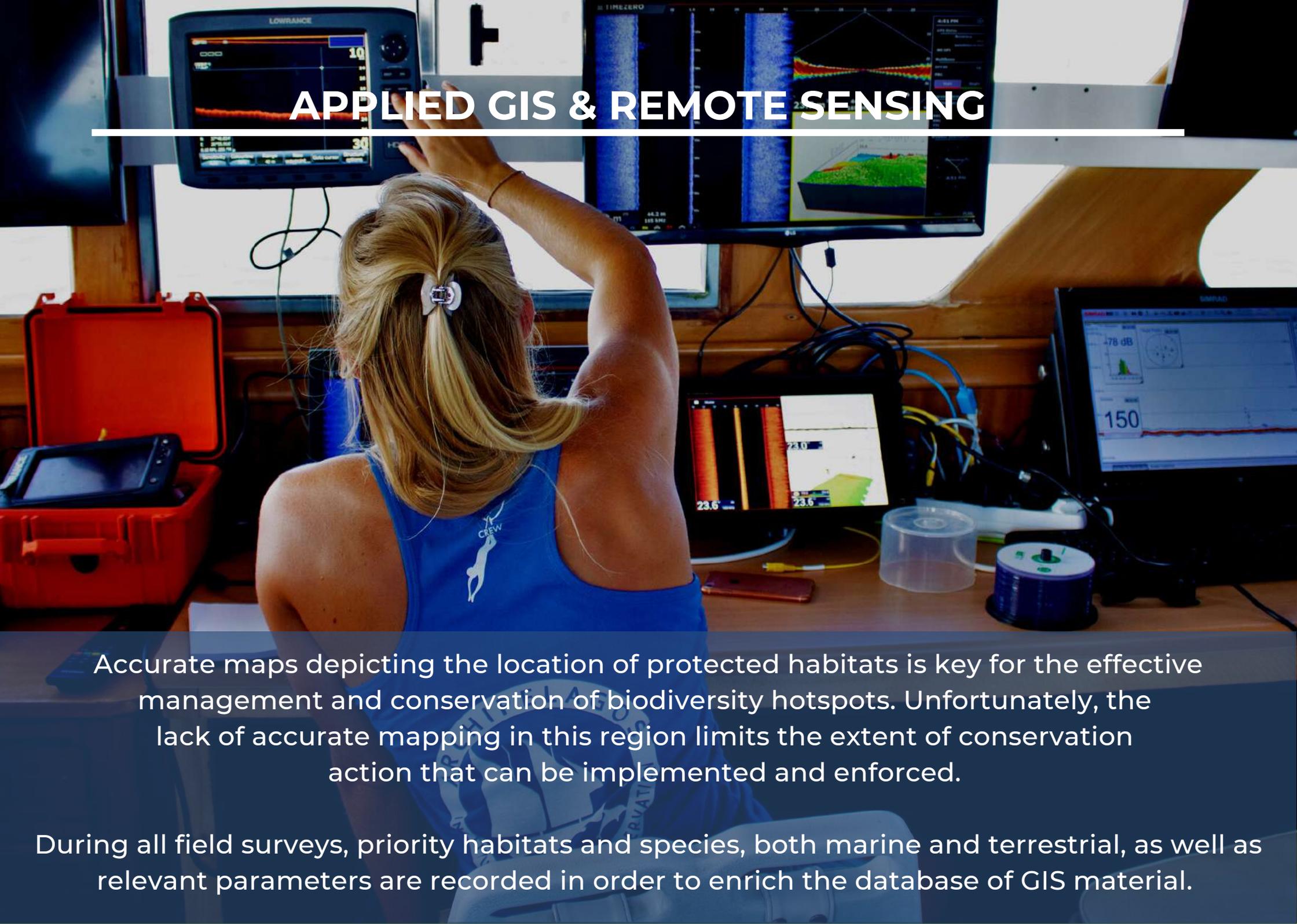
MARINE ECOLOGY



With over 18,000 km of coastline and one of the largest fishing fleets in Europe, monitoring of marine activities in Greece is not a simple task. The Aegean Sea supports exceptional biodiversity including rare and protected marine habitats and species. Archipelagos collects data and monitors important ecosystems of the region, assessing habitats and populations as well as their significant by product. Knowledge acquired in this way enables us to develop successful, targeted management and conservation plans.

MARINE ECOLOGY TEAM CURRENT RESEARCH

- Assessing the biodiversity of coastal ecosystems with a focus on fish, algae and invertebrates via visual and camera based surveys.
 - Mapping seagrass meadows and coralligenous reefs with participatory GIS surveys and boat-based surveys.
 - Assessing the extent of microplastics distribution on seagrass, sediment, fish and invertebrates.
 - Determining the presence of invasive species, as well as monitoring their distribution and abundance while assessing their impact on native populations.
 - Assessing the impacts caused in coastal ecosystems by anthropogenic influence such as illegal trawling activity and increased sea temperatures.
 - Experimental replanting of *Posidonia oceanica* seagrass using environmentally friendly and cost-effective methods.
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A woman with blonde hair in a ponytail, wearing a blue tank top with a white logo, is seen from behind, working at a computer workstation. She is interacting with a monitor displaying a 3D topographic map. The workstation includes several other monitors: one on the left showing a Lowrance sonar display, one in the center showing a Timezero display with a 3D map, and one on the right showing a Simrad display with a graph and the number 150. A red rugged case with a tablet inside is on the left. The background shows a wooden interior, possibly a boat cabin.

APPLIED GIS & REMOTE SENSING

Accurate maps depicting the location of protected habitats is key for the effective management and conservation of biodiversity hotspots. Unfortunately, the lack of accurate mapping in this region limits the extent of conservation action that can be implemented and enforced.

During all field surveys, priority habitats and species, both marine and terrestrial, as well as relevant parameters are recorded in order to enrich the database of GIS material.

GIS TEAM CURRENT RESEARCH

- Collaborating in collecting, interpreting, and visualizing spatial data, with use of our research vessels, scientific-equipped kayaks and satellite data.
- Producing maps and reports to support conservation purposes.
- Assessing the distribution and density of seagrass meadows in the coastal zones around the Aegean Sea. Research is focused on remote sensing combined with training data obtained from downscan sonar kayak surveys.
- Developing and conducting rapid-assessment mapping techniques, combining citizen science, multibeam sonar, biomass scanner and ROV data. These advanced technologies offer valuable insight into coralligenous and other mesobenthic habitats' presence, resulting in high-resolution distribution maps.
- Using wide range spatial data to map priority for improved management. For example, fishing data, boat traffic and Sentinel satellite imagery.



AEGEAN MARINE LIFE SANCTUARY



AEGEAN
MARINE LIFE
SANCTUARY
LIPSI, GREECE

The Aegean Marine Life Sanctuary (AMLS), currently under development, will soon be the first of its kind veterinary clinic and rehabilitation centre for sick/injured marine animals, such as dolphins, seals and turtles. Most importantly, it will be able to host formerly captive dolphins, contributing to give an end to the critical problem of dolphin abuse in captivity for purposes of forced performances.

The AMLS combines innovation with high standards of animal welfare, carried out in a pristine natural location, aiming to be a cost-effective, sustainable and innovative solution to a global problem.

SANCTUARY TEAM CURRENT RESEARCH

- Marine mammal veterinary research, including assisting the preparation of the operation protocols and related installations
 - PR and Communications including the creation of social media content and public awareness campaigns, assisting with fundraising efforts, applying for grants and creating educational material for the facility.
 - Innovative coastal habitat research in the AMLS bay, in preparation of the operation. This includes underwater replanting of seagrass meadows, camera-based monitoring of coastal ecosystems, design and installation of artificial reefs, monitoring blue carbon of Posidonia seagrass and much more.
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LABORATORY RESEARCH & MICROPLASTICS



The Mediterranean region has been noted to contain the sixth-largest accumulation of plastic debris on the planet. Archipelagos' research on plastic and microplastic pollution aims to inform and alert citizens and authorities. We focus on assessing the dispersal of plastic waste fragments and fibres in our seas, identifying the primary sources of microplastics, quantifying the extent of contamination, and determining the accumulation in the food chain.

LABORATORY TEAM CURRENT RESEARCH

- Assessment of the role of seagrass meadows as a sink for microplastics
 - Comparative analysis of microplastics found in wild and farmed fish
 - Comparative analysis of microplastic found in native and invasive species of marine invertebrates (e.g. sea urchins).
 - Analysis of microplastic content found in commercial products such as table salt and fish food for aquaculture.
 - Assessment of the effectiveness of washing machine microfibre filters in mitigating the release of microplastics into the environment
 - Assessment of the extent of microplastic pollution released by sewage treatment units.
 - Analysis of drinking water quality using various equipment including spectrophotometry.
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MEDIA, PR, & GRAPHIC DESIGN

Communication for conservation is achieved by documentary photography, video production, illustrations, graphic design and public relations. Conservation efforts can only be successful when shared with local communities and the general public. Media is an invaluable tool in order to raise awareness and inspire people to take an active role for the conservation of marine biodiversity. Additionally, it allows our team to highlighting local and global environmental issues.

MEDIA TEAM CURRENT RESEARCH

- Creating press releases for newspapers, online media, television and radio.
 - Establishing new social network profiles to promote Archipelagos' conservation efforts.
 - Launching awareness campaigns across multiple platforms.
 - Preparing fundraiser events and materials.
 - Photography collaborations with all research teams. This can include capturing marine and terrestrial biodiversity, landscapes, field action and more.
 - Creating scientific illustrations of species from the Greek seas and islands.
 - Designing posters, leaflets, infographics and lecture material used by all teams through graphic design.
 - Documentary film work covering multiple projects as a tool cover the important work being done in conservation.
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ENVIRONMENTAL LAW & POLICY



The biodiversity hotspots and keystone species of the Aegean Sea are at increasing risk of anthropogenic activities such as overfishing, uncontrolled shipping, and tourism. Archipelagos works to protect and conserve Mediterranean biodiversity by combining the results of field research with targeted lobbying at the national and international level.

LAW & POLICY TEAM CURRENT RESEARCH

- Research on EU fisheries legislation and Illegal, Unregulated and Unreported (IUU) fisheries, and sustainable vs destructive aquaculture practices
 - Promotion of the enforcement of existing EU and international legislation for the protection of protected habitats (eg. seagrass meadows and coralligenous reefs) and species
 - Promotion of the enforcement of existing EU and national legislation for addressing plastic pollution
 - Combating the illegal trade of endangered plants and animals, as well as environmental crimes, pollution incidents and the destruction of natural habitats and wildlife.
 - Assess the impact of the uncontrolled use of live ammunition by the armed forces on public health and wildlife.
 - Development of management schemes for fisheries protected areas.
 - Research for the promotion of sustainable fish consumption
 - Research on the impact caused by trawling and other large scale fisheries practices
 - Research on the risk of shipping accidents and related legal framework
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ENVIRONMENTAL EDUCATION



Only with global knowledge and comprehension can we better protect our environment. At Archipelagos, we utilize every opportunity to share with the youth our experiences, current research and conservation efforts. We provide presentations, videos and interactive activities both in person and online, as well as hands-on sessions in nature conservation to the schools on nearby islands. We aim to enrich public knowledge on the biodiversity of the Greek Seas, and inspire engagement with conservation action.

EDUCATION TEAM CURRENT RESEARCH

- Creation and deliverance of lessons and interactive activities focusing on marine wildlife and sustainability including development of material, interactive games and field activities.
 - On-site and online workshops introducing students, teachers, and other members of the local communities to biodiversity and conservation.
 - Designing material such as infographics, posters and other educational aids
 - Use of real time video and material from research to be incorporated online for live environmental activities engaging the public from both near and far reaching regions.
 - Piloting onsite and online lessons to be used throughout Greece as part of extracurricular activities.
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TERRESTRIAL RESEARCH & CONSERVATION



Although we are a marine focused conservation organization, we can not ignore the terrestrial biodiversity of the islands and islets in the Aegean Sea. Our terrestrial research focuses on these rare island ecosystems and species. In larger islands, our work is directed in areas encompassing thick pine forests, dense oak woods and green riparian valleys. We also focus our research on key species such as the Mediterranean chameleon and golden jackal, as well as in key habitats such as transit stations, feeding and breeding grounds for protected bird species including flamingos, Eleonora's falcons and Audouin's gulls.

TERRESTRIAL TEAM CURRENT RESEARCH

- Gathering biodiversity data on small island wetland habitats
- Monitoring internationally important and protected bird species including the greater flamingo, ruddy shelduck, Eleonora's falcon, Audouin's gull, Scopoli's shearwater etc.
- Use of camera traps and acoustic techniques for the study of mammals such as golden jackals, wild boars, stone martens, weasels, hares and small rodents.
- Biodiversity assessment of reptiles and amphibians such as Mediterranean chameleons, Caspian whip snakes, Balkan terrapins, tree frogs.
- Biodiversity assessment of insects such as dragonflies, butterflies, moths and beetles, as well as other brackish and freshwater species.

FISHERIES & AQUACULTURE



For thousands of years, the livelihood of coastal and island communities in Greece have depended on fishing activities. However, for the past decades, fishstock overexploitation, the lack of sustainable management measures and the ongoing destructive and illegal fishing practices, have posed an increasing threat to both ecosystems, and the fishing communities. Through field research, and close cooperation with local fishermen we work to promote sustainable fisheries practices and reveal the true extent of IUU fisheries activities

FISHERIES & AQUACULTURE TEAM CURRENT RESEARCH

- Research related to Illegal, Unregulated and Unreported (IUU) fisheries practices, combining the data from online platforms with the collection of field data, and cooperation with local communities to gather real-time information on IUU practices
 - Assessment of the impact caused by various types of IUU fisheries on protected marine habitats (seagrass meadows and coralligenous reefs)
 - Research for the promotion of sustainable fish consumption
 - Comparative analysis of fisheries management schemes in various parts of the world
 - Collection of preliminary data to identify the impacts on biodiversity caused by different aquaculture practices and creating models of more sustainable approaches to aquaculture.
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CITIZEN SCIENCE & LOCAL ECOLOGICAL KNOWLEDGE



The ongoing marine conservation efforts of Archipelagos Institute rely on the strong support from the local communities. The active role of fishermen and other members of the local communities from the Aegean Islands is invaluable. For over 2 decades Archipelagos has developed a relationship of mutual trust and cooperation; exchanging information with the joint aim of halting the destruction of protected habitats, and other destructive practices before it is too late. Apart from fishers, our citizen science network comprises of sailors, divers, fishermen, sea enthusiasts and tourists who report their observations from their time at sea, helping to monitor protected species, invasive and alien marine species, and other important marine species or activities at sea that should not go undocumented.



CITIZEN SCIENCE TEAM CURRENT RESEARCH

- Collection of Local Ecological Knowledge data from fishermen to determine distribution and relative abundance of key species and habitats including seagrass meadows, coralligenous reefs, invasive species, marine mammals and sharks
- Development of the 'EcoNavigation' citizen-science platform where sailors, divers, fishermen, sea enthusiasts and tourists can report their wildlife observations from their time at sea.
- Collection of Local Ecological Knowledge data from members of the island communities to record, historical information on the status of species and habitats, past fisheries and agricultural practices, medicinal uses of plants and other

OTHER OPPORTUNITIES

I.T. & WEB DESIGN

Information technology is important in our every day lives offering various tools to boost development and exchange information. If you have a background in I.T. or web design you can help our conservation efforts by building websites and databases, analyzing large datasets, and more.

ADMINISTRATION

People from a wide range of backgrounds can help our conservation efforts by joining our admin team. If you are looking to develop your skills in office work administration you can help organise the daily running of the projects and interns. Administration is an excellent skill to add to your resume and something that is required for all job roles.

RENEWABLE ENERGY

Renewable sources are changing the energy industry fast by creating a more diverse sector with new technologies becoming available. Greece has an average of 2,800 hours of sunlight each year, leaving a potential for great amounts of energy to be harvested from the sun.

If your focus is renewable energy, technology and sustainability you can join the team of the Aegean Marine Life Sanctuary. It is housed in a model autonomous building that use a combination of technologies that aim to become replicable in various scales.

Our Boats: Aegean Explorer

Manufacturer: Amsterdam Main
Type: Motor Boat
Length: 21.74 m
Engines: 2* Caterpillar 450HP
Passanger capacity: 25 persons



Archipelagos' research vessel the "Aegean Explorer" aims to address multiple knowledge gaps and promote the protection of the Aegean Sea habitats and species through various targeted conservation actions. The Aegean Explorer is equipped with an array of important scientific tools, including a multibeam sonar, structure scanner, biomass scanner, ROV, camera system that can reach up to 1500m depth, onboard lab and much more. It allows the Archipelagos team to extend the research and conservation work in various parts of the Greek Seas, during targeted research expeditions of short or longer duration.



Our Boats: Pinelopi

Manufacturer: Perama, Athens 1979
Type: Traditional sailing boat
Overall Length: 16m
Engine: Ford Fumoko 140 hp



For marine mammal and oceanographic research, Archipelagos provides a dual mast sailing boat, Pinelopi, of 16 m length and 5 m width. She is a traditional vessel and a copy of a famous sailing boat from 1811. Her structure is reinforced with 10 mm steel meaning she can withstand the harshest weather conditions that can sometimes be expected when spending time at sea.



Our Boats: Nautilus

Type: Ketch Sailing Boat
Width: 3,80 m
Engine: 90 hp Toyota
Length 15,25 m
Passenger Capacity: 12 persons

"Nautilus" has become a valuable means for marine mammal research in various parts of the Aegean and further parts of the Mediterranean. An important voyage of the "Nautilus" was in the framework of the ACCOBAMS Survey Initiative: the first large-scale parallel census of cetacean populations throughout the Mediterranean Sea. This difficult research expedition lasted almost 2 months and covered 3,000 miles between Crete, Libya and Malta forming an important part of future research.



Our Boats: Okeanos

Manufacturer: Bertram
Type: Motorboat
Overall Length: 12m
Engine: 2* Iveco 335 hp Passenger
Capacity: 12 persons



Okeanos supports several Archipelagos' projects, including the mapping of seagrass meadows and coralligene reefs with the use of an ROV, structure scanner and sonar, as well as monitoring IUU fisheries and marine mammal research. The boat is fully equipped with all navigation, safety and communication requirements as well as a radar, GPS plotter, structure scanner, autopilot and a 6.5 kVA generator.

Kayaks



Archipelagos also uses a small fleet of kayaks to support coastal research. Kayaks are an ideal, eco-friendly means of researching coastal habitats, while the great clarity of the Aegean waters (down to 40 m) makes it possible to survey relatively large depths. The kayaks are flexible, leave zero carbon footprint, cause no environmental impact and do not produce any noise pollution. One of the main applications of kayaks is monitoring and mapping the seagrass meadows, using a small structure scanner, an underwater camera and a bathoscope. During parallel surveys structure scanner readings can be shared via Wi-Fi on tablets on other kayaks. Kayak-based surveys also include sampling surface waters to study zooplankton and microplastics, monitoring seabirds and with some luck, even marine mammals!

Our Bases: Lipsi Island

The main research base is located centrally in the small town of Lipsi. The town has local amenities and is a 10-min walk from the nearest beach. There is a selection of cafes, tavernas, ATM, pharmacy and independant shops. The Aegean Marine Wildlife Sanctuary is located 7 km away from the town center.



Our Bases: Samos Island

Samos base is located in the settlement of Mesokampos, 3.5 km away from Pythagorio. There is a working office, Wi-Fi, dorm-style accommodation with facilities including a cinema room, gym and games area. The base is 40 minutes walk from Pythagorieo and a 20 minute walk from a local supermarket. There is a beach directly at the front of the base with far reaching views of Turkey



Our Expectations

- Have a passion for the environment and conservation.
- Ability to work in a dynamic environment.
- Ability to take leadership in a project or working within a team supporting others.
- Ability to communicate concerns in a constructive manner.
- Prepared to work long hours; including times when Wi-Fi can be slow in remote locations.
- Live in simple shared accommodation with basic amenities (i.e. no air-conditioning and limited hot water availability).
- Adaptable and able to change living environments, including living on a boat in all weather conditions.
- Contribute to a clean work and living space and undertaking rota with other team members on a weekly basis.
- Be a good ambassador of Archipelagos when interacting with local communities.
- Respect for the no-alcohol policy in all of Archipelagos' facilities.



How to get here

Internships start on the island of Lipsi on the first or third Tuesday of the month. There are international airports on the islands of Athens, Samos, Kos and Rhodes. Additionally, there are nearby smaller airports on Leros and Kalymnos. Check all flight possibilities to see what is the best option for your start date! We recommend Skyscanner or Kayak for competitive flights.

Be aware before purchasing your flights that it is important to view ferry schedules. Travel times vary depending on the ferry operating company and the island you are travelling from. The most popular route is with Blue Star Ferries that departs every Tuesday from Athens Piraeus port at 15:00. You need to be at the port at least 1 hour before departure, pay close attention to your gate number (**usually E1**). The ferry arrives between 23:00 and 00:00. A member of the Archipelagos team will meet you at the port to take you to your accommodation, please do not worry about arriving late at night, there are usually several Archipelagos interns on the same ferry.



Archaeological History

The area is home to extensive archaeological and cultural heritage. Samos is a historical island. In antiquity it was home to prominent figures such as the mathematician Pythagoras, the storyteller Aesop, the philosopher Epicurus and the astronomer Aristarchus. Today one can visit important archaeological sites on the island such as the Tunnel of Eupalinos, the Ancient Temple of Hera and the Archaeological Museums in Pythagorio and Samos Town.

Lipsi Island appears to have been continuously inhabited since prehistoric times and the island's name is ancient. According to mythology, Lipsi is the mythical Ogygia, the island of Calypso who seduced Odysseus (Ulysses) into staying for years on his way back from the Trojan War.



Cultural Heritage

Nearby Islands

- Patmos: The old town of Chora is a Unesco World Heritage site of unique beauty.
- Kalymnos: The famous sponge divers island, also supports the biggest island artisanal fishing fleet in Greece. Recently it has become known as one of the most popular sport climbing destinations in the world.
- Ikaria: Having extensive mountainous, wild landscape and important local culture. Recently it became known as one of the 5 Blue Zones worldwide due to the longevity of its inhabitants - but this is a large topic of discussion.
- Leros: Although the island was inhabited since the 3rd millennium BC, the recent history of the world wars and especially the second world war, are evident in the landscape and monuments.



Climate



SPRING - SUMMER

Hot, dry summers around 85 degrees in the day and 65 degrees at night.



AUTUMN - WINTER

Cold, wet winters around 55 degrees during the day and 40 degrees at night.



YEARLY

Windy throughout the year, particularly in winter and spring.



Getting Around

Spare Time

There is much to do in your spare time including visiting sites of cultural and archaeological importance, local beaches, spending time in the towns, eating out, shopping in many independent gift shops, bike rides, visiting other nearby islands and snorkeling in the pristine waters of the Aegean Sea.

Travel

Islands are accessible by foot, car or scooter rentals, as well as bicycles. Taxis are also available and there are buses on both islands (depending on the season).

Medical Services

Lipsi town and Pythagorio offer health centers and pharmacies and general hospital is located in Samos and Leros.



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