

Sustainable Mediterranean

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Marine Natura 2000 sites:

Mediterranean NGOs promote the importance
of coastal and marine protected areas



Editorial

This issue of *Sustainable Mediterranean* is dedicated to the 2020 Mediterranean Action Day (MAD 2020) campaign of MIO-ECSDE.

An annual activity of MIO-ECSDE, the Mediterranean Action Day gives the opportunity to environmental NGOs to take action in the field and tackle a frontline environmental issue of common interest in the region. There isn't a specific day of the year to plan towards, rather each participating NGO plans its own campaign.

The Annual General Assembly of the MIO-ECSDE Federation decides the theme of each year's Mediterranean Action Day. For the year 2020, it was dedicated to marine Natura 2000 sites and aimed to sensitize citizens about the importance of these sites as well as of other coastal and marine protected areas.

Nine NGOs participated in the 2020 campaign, implementing activities in seven Mediterranean EU countries: ADIPA - Croatia, AKTI - Cyprus, Asociación Hippocampus - Spain, Cireolo Festambiente - Italy, DPPVN - Slovenia, EKO KVARNER - Croatia, Greek Eco Project - Greece, Healthy Seas - Greece, and Scholé Futuro-WEEC Network - Italy. This issue of *Sustainable Mediterranean* is a tribute to the efforts of these NGOs and their capability and creativity in taking a small seed fund and performing actions with a significant impact. The 2020 Mediterranean Action Day was supported by the EU LIFE Programme (Operating Grant for MIO-ECSDE).



The participating NGOs had to deal with the COVID-19 pandemic's implications on top of the usual challenges they have to face in their day-to-day work. Activities had to be adapted and most had to remain restricted to a small number of participants in order to provide safe spaces and fully comply with the measures in place at the time.

This 77th issue of *Sustainable Mediterranean* closes with two features on the Interreg Med funded projects that MIO-ECSDE is partner in: the [MPA-Engage](#) project that aims to support managers of Marine Protected Areas to adapt to and mitigate the climate change impacts in the Mediterranean; and the [Plastic Busters MPAs](#) project aiming to contribute to maintaining biodiversity and preserving natural ecosystems in pelagic and coastal MPAs, by defining and implementing a harmonized approach against marine litter. The latter feature focuses on the results and outcomes of a demo on how a derelict fishing gear management scheme can be established with the involvement of the fisheries and aquaculture sector.

Photo Credits: Unsplash / Bart Schouten

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What is the Natura 2000 network?

Stretching over 18% of the EU's land area and almost 9% of its marine territory, Natura 2000 is the largest co-ordinated network of protected areas in the world aiming to assure the long-term survival of Europe's most vulnerable and threatened species and habitats under the [Birds Directive](#) and the [Habitats Directive](#), respectively. Spanning 28 EU Member States, this network can be regarded as a cooperative cross boundary framework capable of tackling bio-

diversity loss and overriding national priorities.

The Natura 2000 Network is at the core of the European Biodiversity Strategy for 2030. Today, only 3% of land and less than 1% of marine areas are strictly protected in the EU and the aim is to enlarge existing Natura 2000 areas, with strict protection for areas of very high biodiversity and climate value.



Photo Credits: Unsplash / Birger Strahl



Photo Credits: Unsplash / David Troeger

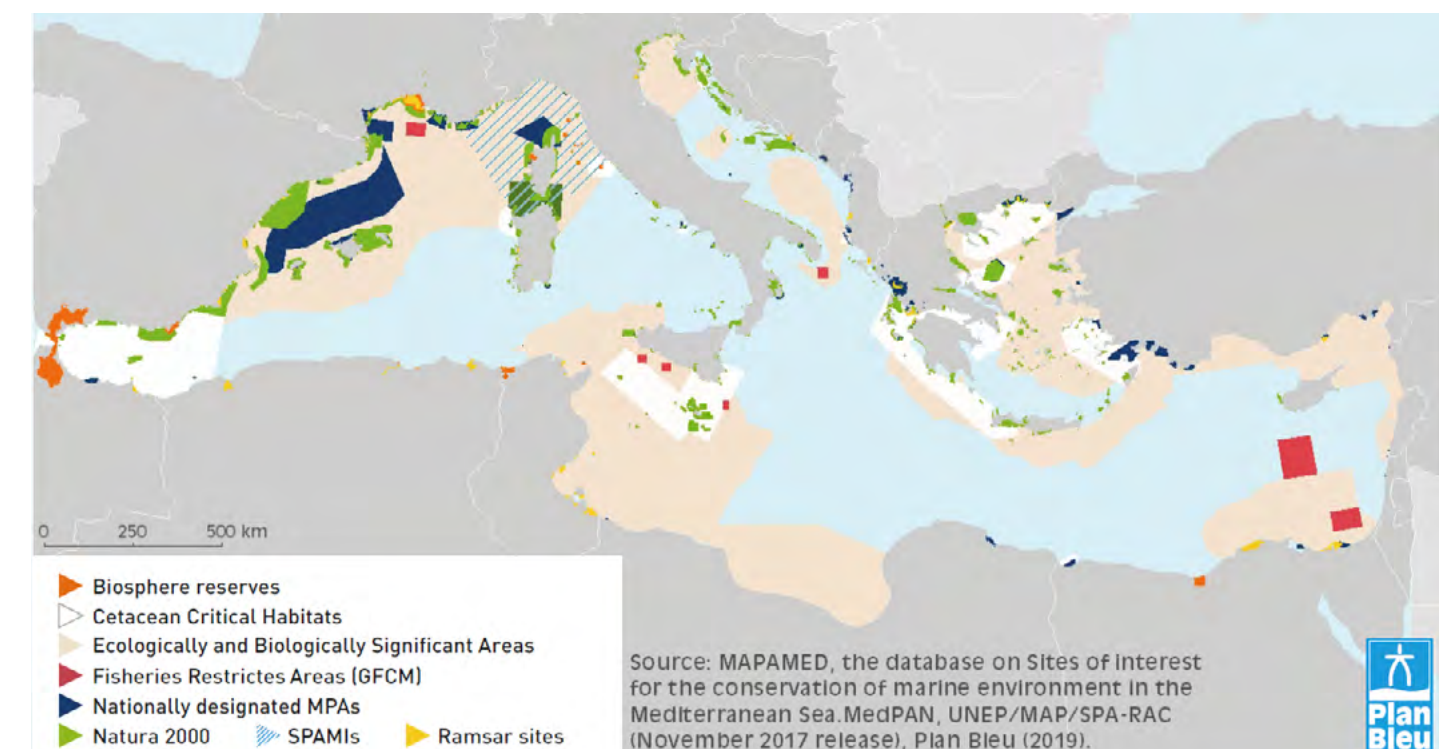
Marine Natura 2000 network: Protecting Europe's marine biodiversity

Designed to conserve Europe's marine life, marine Natura 2000 sites, Marine Protected Areas (MPAs) or other marine reserves are the primary tools for protecting, managing and enhancing our marine ecosystems. They are also at the heart of the EU's contribution to international efforts, including the [Barcelona Regional Sea Convention](#) and the [Ocean Governance Agenda](#).

While the terrestrial component of the Natura 2000 is considered close to being complete, the marine part of the network is making steady advances over the last two years towards reaching the global 2020 biodiversity conservation goal of protecting 10% of the world's oceans. As the designation of marine protected areas is progressing, its next ma-

jor challenge will be to increase the management effectiveness, while ensuring Good Environmental Status, as required under the [Marine Strategy Framework Directive](#). Currently very few protected marine habitats and species are in a favourable conservation status due to the significant gaps in marine data.

The [EU Biodiversity Strategy's](#) commitment to effectively manage all protected areas by 2030 offers momentum to rise to this challenge. The Biodiversity Strategy also goes one step further in calling for an increase in protected sea area coverage of at least 30% of the surrounding seas (including Natura 2000 and nationally designated areas), while 10% of EU seas will be strictly protected.



Source: [SoED 2020: State of Environment and Development in the Mediterranean](#)

The Mediterranean basin is a globally unique biodiversity hotspot. It is home to more than 17,000 marine species (4-18% of the world's known marine species), while covering only 0.82% of the ocean surface. This exceptional biodiversity is even more remarkable considering the Mediterranean also holds the highest rate of endemism of marine species (20-30%) in the world.

However, the Mediterranean Sea marine life undergoes multiple continuous pressures, mostly due to human activities, such as unsustainable fishing, dredging, maritime traffic, pollution, marine litter, coastal development, introduction of non-indigenous species, and offshore oil and gas exploitation. The semi-enclosed nature of this sea aggravates the impacts of these activities along with the

effects of climate change, resulting in habitat degradation and biodiversity loss. Within the scope of the 2020 Mediterranean Action Day, 3 NGOs took action on:

- » the importance of marine Natura 2000 sites towards attaining favorable conservation status for Mediterranean habitats and species
- » the key threats to Mediterranean coastal biodiversity

The NGOs that carried out such activities were: Asociación Hippocampus (Spain), EKO KVARNER (Croatia), and Healthy Seas (Greece).

The Mediterranean: a sea under pressure

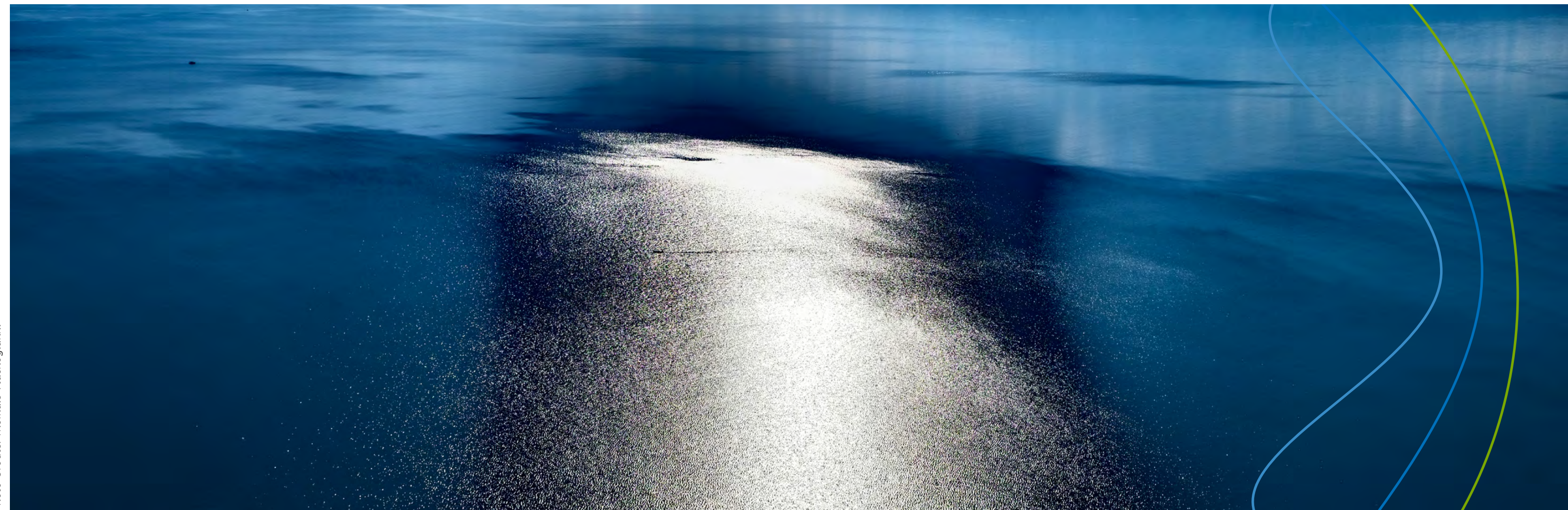


Photo Credits: Thomas Vlachogianni

EKO KVARNER organized a scientific conference to advocate for the extension of the Natura 2000 network to the marine environment of the island of Krk, aiming to preserve the critically endangered pen shell *Pinna nobilis*.

Noble pen shells are endemic Mediterranean species that play a key role for ecosystem health by filtering water and retaining large amounts of organic matter thus contributing to water clarity. The last years, the species is undergoing mass mortality events caused by the spread of pathogenic bacteria and parasites due to water warming and other anthropogenic factors.

With the initial goal of finding solutions for the rapid extinction of *Pinna nobilis*, a 3-day conference was organized. The event gathered different stakeholder groups to create a platform of expert knowledge exchange on the importance of the Kvarner region as one of the last sanctuaries for the critically endangered species (under the IUCN Red List and the Barcelona Convention, SPA/BD Protocol) and address the potential benefits of a new MPA for the local economic and social development. Following the conference, the engaged scientific experts elaborated a preliminary action plan including a set of measures to protect the *Pinna nobilis*. Supported by the President of Croatia and a successful media campaign, a meeting between

representatives of the scientific community and public institutions was set up with the Ministry of Economy and Sustainable Development. The meeting led to the establishment of a conservation project to protect the noble pen shell from extinction under the “Environmental Protection and Energy Efficiency Fund”, for the period of 2020-2025. EKO KVARNER and the Brijuni and Telašćica Public Institutions will monitor the northern and central Adriatic Sea for surviving individuals, collect juveniles, and preserve adults and larvae in the Aquarium Pula.

On the occasion of the MAD activity, EKO KVARNER participated in local scuba diving clubs’ cleaning activities at the Krk harbor

and joined forces with divers to collect data regarding the current population status of *Pinna nobilis* in the region. Following a participatory citizen science approach, the NGO aimed to identify healthy individuals for their further preservation. Till today 6 adult organisms have been identified in their natural habitat and 23 healthy individuals are kept under controlled conditions (*ex situ*). These individuals hold the hope for the reintroduction of *Pinna nobilis*, but without coordinated actions from the Mediterranean states, scientific community and citizens, the survival of the species remains questionable.



Participants of the EKO KVARNER Conference, town of Krk, Croatia / Photo Credits: Nikola Piršić



Monitoring of the endangered species *Pinna nobilis* / Photo Credits: Milvana Arko Pijevac



Natura 2000
Site Name: Otok Krk

Country:
Croatia

Site Code:
HR2001357

Area:
377 km²

- Pressures:
- » Littoralisation
 - » Urbanized and industrial areas (excess population density)
 - » Hunting
 - » Water abstraction from surface waters

ASOCIACION HIPPOCAMPUS conducted a census, using citizen science to assess the declining seahorse populations in the coastal lagoon of Mar Menor in Spain.

Located in the southeastern region of Murcia, one of Europe’s biggest saltwater lagoons, Mar Menor is a biodiversity hotspot. It is an international Ramsar Site, as well as a Special Protected Area of Mediterranean Interest (SPAMI), and is included in the marine Natura 2000 network. Years of mismanagement, marine pollution, unsustainable urban development and farming are impacting the region. During September 2019 heavy rains resulting in agricultural runoff increased the concentration of nitrates, fertilizers and pesticides, leading to mass mortality events.

To quantify the surviving seahorse population, Asociación Hippocampus conducted 20 citizen science monitoring activities, between May and November 2020, with the participation of more than 25 local divers. Prior to any field trip, the volunteers attended training sessions on a harmonized monitoring protocol for underwater visual census for seahorse population assessments. **Monitoring a seabed surface area of 54082m², within a six-month sampling period, the divers were able to observe only one seahorse organism in the surveyed transects.**

Asociación Hippocampus aims, through the current and future census activities, to improve the data deficient population trends under the IUCN Red List of Threatened Species, and include the long-snouted seahorse under the Spanish National Catalogue of Endangered Species, for the elaboration of a recovery action plan before they go extinct.



Natura 2000 Site Name: Mar Menor	Country: Spain	
Site Code: ES6200030	Area: 134 km²	

Pressures:

- » Continuous Urbanisation
- » Agricultural run-off (eutrophication)
- » Pollution (marine, soil, groundwater, noise)
- » Land reclamation
- » Artificial beaches/Embankments
- » Increased precipitation variability, extreme weather events

Sedhorse monitoring / Photo Credits: Asociación Hippocampus
Hippocampus guttulatus / Photo Credits: Asociación Hippocampus



Photo Credits: GeorgeKollikis

HEALTHY SEAS set up a ghost net recovery mission in the island of Kefalonia and raised awareness about marine pollution.

Abandoned, lost or otherwise discarded fishing gear (ALDFG) is a significant and very persistent type of marine litter with numerous harmful effects for the marine and coastal environment, including ghost fishing. It is estimated that over 132,000 turtles are accidentally captured each year by the fishing industry, causing at least 44,000 incidental deaths per year, worldwide. The Ionian Sea is an important foraging and mating ground for two species of sea turtles: *Caretta Caretta* and *Chelonia Mydas*. The marine area surrounding the Kefalonia Island is protected under 3 Natura 2000 sites covering an area of around 318 km² providing significant protection to these species as nesting sites.

With the support of 6 professional divers, Healthy Seas removed a total of 500kg of lost fishing gear from various locations

around the island, protecting in this way local marine inhabitants such as the loggerhead sea turtle, dolphins and monk seals. Following the 5-day underwater clean-up operation, the recovered fishing nets were displayed at an awareness raising event at the port of the island that attracted more than 100 people. Representatives from the Ainos National Park Management Body demonstrated the benefits of the Natura 2000 network for the local community, economy and livelihoods and the need to preserve marine ecosystems for future generations. The event included a photo exhibition about ghost nets, an artistic installation made of reclaimed marine debris that was completed *in situ*, and finally an educational activity for the children that allowed them to wear snorkeling masks and to “symbolically” rescue marine animals from ghost nets. To further support the endeavors for the protection of the endangered sea turtle species, Healthy Seas offered a donation to the Kateleios Volunteer Group for their action.



MAD 2020 / Photo Credits: Cor Kuyvenhoven

The socio-economic benefits

of the marine Natura 2000 network



Photo Credits: European Commission-Europa EU

A healthy and productive sea is not just an issue of conservation but is of direct concern to people, supporting local communities, creating jobs and providing food. Marine Natura 2000 sites have a key role to play in the development of marine and coastal livelihoods for European citizens, acting as safe havens for biodiversity, nurseries for living marine resources (such as fisheries), drivers of sustainable tourism, and, overall, acting as living laboratories for a sustainable blue economy.

Natura 2000 is not just a network of protected nature reserves. It recognises that **humans are an integral part of nature and that the two work best in partnership with one another**. Its aim is not to exclude economic activities but ensure they are compatible with safeguarding valuable species and habitats. Currently, the Natura 2000 network and the activities implemented within the protected areas produce economic benefits between €200 and €300 billion per year (2% - 3% of the EU's Gross Domestic Product) and support about 12 million jobs each year (about 6% of total employment in the EU) by maintaining functional ecosystems.

Since the marine component of the Natura 2000 network is still growing, there is significant scope for further economic contributions of the network to the European economy. These objectives can be reached only with the participation and involvement of a whole range of local stakeholders and protagonists. In this way, everyone has a role to play in making Natura 2000 a success.

The network can deliver a variety of socio-economic benefits to the EU Member States, resulting from a range of provisioning, regulating and cultural services, each of which supports human well-being:

- » Creating jobs and improving job security through sustainable fisheries.
- » Enhancing sustainable growth, especially in rural areas, through nature-based recreation and eco-tourism.

- » Maintaining cultural identity and sense of place.
- » Supporting climate change adaptation objectives, while benefiting public health and wellbeing.
- » Offering cost-effective delivery of a range of ecosystem services such as flood protection, soil erosion, water purification, and air quality.

And yet many European citizens are largely unaware of the Natura 2000 network and the numerous benefits they obtain from it. To address this lack of awareness, the European Commission launched in 2014 the annual European Natura 2000 Award. This pan-European recognition acknowledges conservation achievements and management excellence in Natura 2000 sites, showcasing the added value of the network for local economies and increasing public awareness about Europe's valuable natural heritage. Any organization or individual can apply for this Award, as long as their work is directly linked to one or more Natura 2000 sites. Moreover, with the objective of celebrating the Natura 2000 network as one of the EU's most outstanding achievements and to honor the efforts of everyone involved in making it a success, the **21st May was declared "European Natura 2000 Day"**.

For the 2020 Mediterranean Action Day, many NGOs focused their actions in highlighting the added value of conservation efforts both for the development of sustainable practices and the provision of benefits for the local community. Since every site is unique, the emphasis is on finding local solutions to local management issues in close cooperation with landowners, stakeholders, and any other interested parties. The NGOs which opted to carry out such activities were: Greek Eco Project (Greece), ADIPA (Croatia), AKTI (Cyprus), Circolo Festambiente (Italy), DPPVN (Slovenia), and Scholé Futuro-WEEC Network (Italy).



Photo Credits: Thermaikos Gulf Protected Areas Management Authority

GREEK ECO PROJECT held a beach clean-up activity in the wetland of Agios Mamas and facilitated a multi-stakeholder open dialogue for the site's future.

This new grassroots organization mobilized more than 100 citizens to visit the Agios Mamas lagoon located in the Halkidiki peninsula. The aim was to raise the awareness of the wider public about the lagoon's existence and biodiversity value, which are the reasons it has been designated and included in the Natura 2000 network.

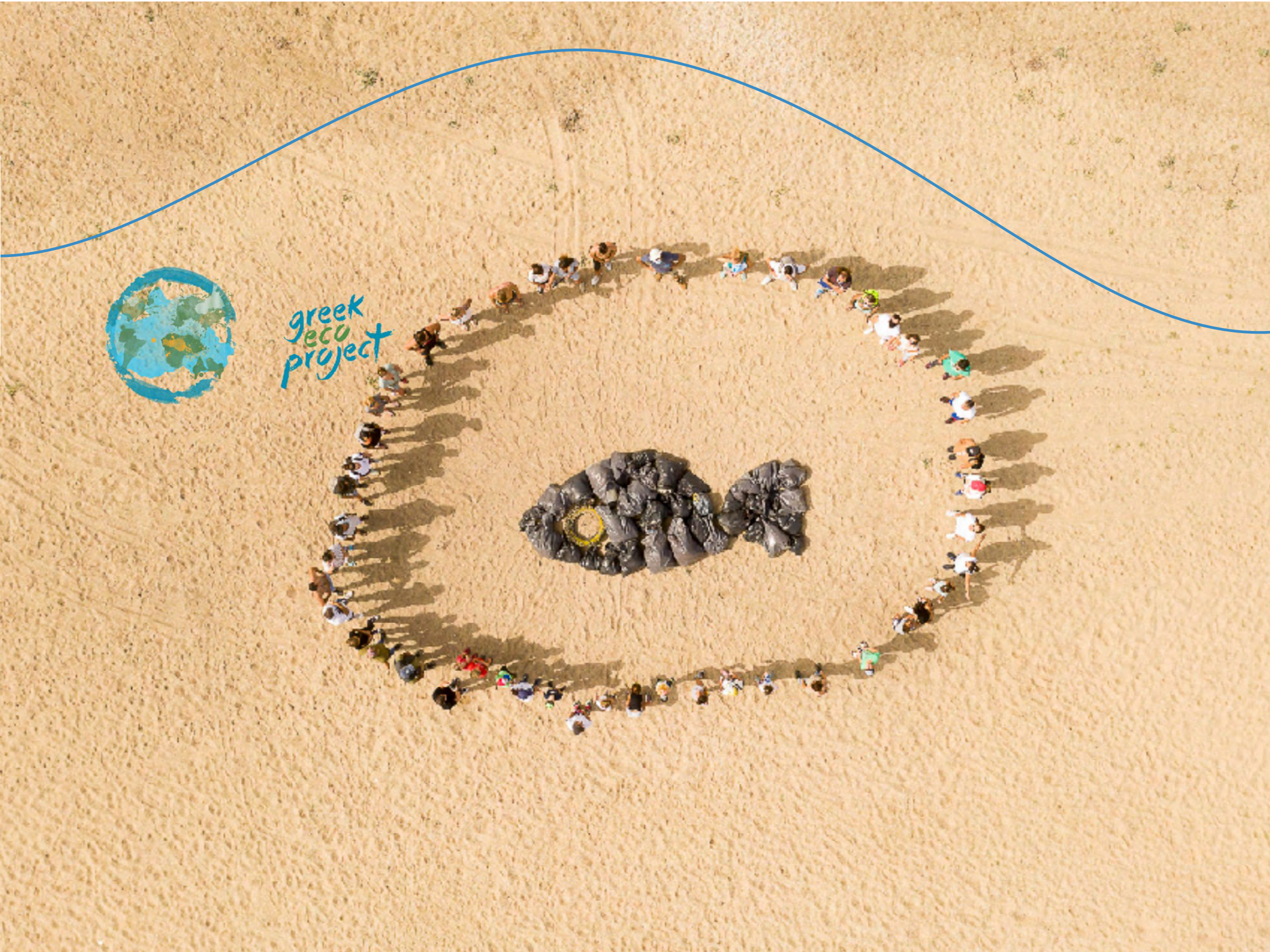
At the clean-up activity, the manager of the Thermaikos Gulf Protected Areas Management Authority, presented the legal and regulatory framework of the Natura 2000 site, the ecosystem services it provides and the threats to its resilience. Following the information session, students, public authorities, local government representatives, cultural associations, farmers, fishermen, entrepreneurs, and members of the local community joined forces to clean the seashore and mark the protected area with wooden signs, to convey clear conservation signals. A total

of approximately 400kg of marine litter was collected with plastic straws, abandoned fishing gear, cigarette butts, and plastic bottles prevailing.

This small coastal wetland is an important location for 40 breeding and migratory bird species protected under the Birds Directive. One of the many pressures the site is facing is noise pollution, especially during the summer months as a result of mass tourism. This is why a silent walk was organized around the lagoon as a final activity of MAD 2020, to

familiarize the visitors with the documented problem and capture the serenity that the area offers. To conclude the visit, Greek Eco Project facilitated an open dialogue amongst the various stakeholders to identify solutions for the sustainable management and protection of the site. The main lesson learnt was that environmental threats can only be handled through a multidisciplinary approach and NGOs can play a crucial role as intermediaries to ensure a successful collaboration between the private and public sector towards achieving good conservation status.

Beach clean-up of Agios Mamas coast during MAD 2020, Greece / Photo Credits: GREEK ECO PROJECT



Natura 2000 Site Name: Agios Mamas Lagoon
Country: Greece
Site Code: GR1270004
Area: 6 km² (16% Marine Area)
Pressures: » Mass Tourism » Pollution (solid waste, noise) » Climate Change » Coastal Development » Illegal Construction » Water abstraction for irrigation



Meeting the local pony-breeders / Photo Credits: R. Ozimec



Conference at Jezero Lake / Photo Credits: M. Matic

ADIPA organized a conference on the governance challenges in the efforts to revitalize Lake Jezero, near Njivice.

Lake Jezero, that was once the main water supply source for the north-western part of the island of Krk, is an important habitat for the conservation of many endemic species of plants and animals. The shore of the lake is covered by Sub-Mediterranean grasslands and forests that shelter 41 bird species. This unique ecosystem has been mismanaged over the past years and it is facing many anthropogenic pressures such as harmful investment plans, and unsustainable agriculture due to lack of awareness of the island's inhabitants about the ecological importance of this Natura 2000 site.

A comprehensive plan for the sustainable management and conservation of Lake Jezero is therefore deemed critical. Despite numerous studies, however, more data is needed.

The event that was also broadcasted online, brought together representatives of municipalities, institutions, touristic organizations, fishing and hunting organizations, and NGOs. The main objectives of the conference were to: increase the awareness of the local community thus ensuring their engagement and ownership of the forthcoming management plan; foster cooperation between stakeholders; and create a platform for scientific discussion to identify knowledge gaps. Following the conference, field visits were organized to Jezero's various habitat types, enabling participants to experience the sustainable incentives the site can offer.



Natura 2000
Site Name: **Jezero
Njivice na Krku**

Country:
Croatia

Site Code:
HR2000891

Area:
6 km²

- Pressures:
- » Extensive live stocking
 - » Eutrophication
 - » Pollution
 - » Invasive species
 - » Land reclamation (drying out)
 - » Accumulation of organic matter



Jezero Njivice na Krku / Photo Credits: Miladen Trinajstić

AKTI set up a series of participatory engagement activities to identify the challenges and the opportunities for the future of the Akamas Peninsula.

Located in the west coast of Cyprus, Akamas has been designated as a Natura 2000 site for its pristine biodiversity (173 species and 29 habitats protected under the Nature Directives), while the marine area around the peninsula is the only designated MPA of the country. As rapid investment development and expansion of fishing activities take place within the protected area there is an ongoing debate on the importance of biodiversity conservation for the long-term sustainable use of the site.

From its extensive experience in working with local stakeholders, AKTI proved that bridging the knowledge and awareness gap can have significant positive impacts in changing behaviors and supporting environmental protection actions. The NGO organized a hike in the Akamas Peninsula through the Avakas Gorge. However, a limited number was allowed to participate due to COVID-19 restrictions. To further raise awareness, AKTI set up a campaign on their social media networks highlighting the benefits of the designated area for the protection of the local marine and terrestrial biodiversity. Also, due to the pandemic prevention measures, only semi-structured interviews were conducted to identify the main bottlenecks and sug-

gested solutions on how the protection of the area can contribute to the blue economic prosperity of the region. Fishermen, educators, tour operators, scientists and local authorities made the following recommendations:

- » Improve the protected area surveillance by the Department of Fisheries and mark its boundaries to prevent unsustainable fishing due to lack of awareness of the area’s protection status.
- » Not to expand the MPA: The expansion of the MPA to the nearby area of Latsi Harbor could have a negative impact on the local economy, therefore interviewees

suggested to halt the expansion plan and improve the protection measures of the existing protected area instead.

- » Include the local stakeholders and authorities in any decision-making process related to the management of the area to ensure its success.

AKTI will relay the outputs of the interviews to the local authorities and to the Department of Fisheries and Marine Research in order to pave the way for the implementation of these measures.



Photo Credits: Unsplash / Ljubomir Zarkovic







The Marine Protected Area status of the Akamas Peninsula

ensures the protection of the marine ecosystem. This not only benefits nature but also the people who rely on the sea to make a living. The sea plant, *Posidonia oceanica*, makes up one of the ecosystems that is protected through this status. This ecosystem acts as a nursery for young fish, protecting fish stocks and allowing fishing to be sustainable long-term. Additionally, proposed bans during the breeding season would also make fishing sustainable as this would allow fish to reproduce and increase in number.

MIO-ECSDE's Mediterranean Action Day 2020 is organized in the framework of the Annual Programme of MIO-ECSDE supported by the LIFE Programme.



More can be found here:
<http://www.akti.org.cy/news/get-to-know-and-love-akamas-peninsula/>



Hiking activity at the Avakas Gorge, Cyprus / Photo Credits: Demetra Panaretou

Natura 2000 Site Name: Akamas Peninsula	Country: Cyprus	Site Code: CY4000023	Area: 179 km² (44% Marine area)	Pressures: » Urbanized areas (human habitation) » Fishing	» Tourism » Transportation infrastructure » Removal of beach materials
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Akamas Peninsula / Photo Credits: Cyprus Terrabook

DPPVN organized guided tours in the Sečovlje Salina Natural Park, a unique Mediterranean wetland where salt is still produced in a traditional way.

Despite the small size of the Slovenian coast, most of its coastline is protected under the networks of Natura 2000 and Ramsar for its wetlands of international importance and saltpans. Saltpans provide critical ecosystem services, are significant areas for migratory birdlife and offer many economic benefits for local populations. The Sečovlje Salina is among the few remaining active saltpans that commercial activity co-exists with nature conservation under the Nature Directives. Sečovlje, is a reserve of people's ecologically precious residential environment and currently disappearing landscape due to climate change.

In total, 130 participants learnt about the local biodiversity, and the cultural heritage history of the site through four different guided tours by nature conservation supervisors. A short film was projected to the visitors at the information center of the park. The main message of the activity was that a combination of conservation efforts, ecotourism and environmental education can ensure the resilience of saltpans in the next decades to come.



MAD activity 2020, Slovenia / Photo Credits: DPPVN

Natura 2000 Site Name:
Sečoveljske soline

Country:
Slovenia

Site Code:
SI5000018

Area:
9 km² (28% Marine area)

Pressures:
» **Sea level rise**
» **Climate Change**
» **Coastal erosion**



Traditional salt production at Sečovelje / Photo Credits: MedWet



“Cuor di Diaccia” Workshop / Photo Credits: Circolo Festambiente

CIRCOLO FESTAMBIENTE organized the project **“OVER NATURE - Walking with biodiversity”** to sensitize the local community of Tuscany about three coastal Natura 2000 sites.

Drawing from its extensive experience in environmental awareness raising, on the occasion of MAD 2020, Circolo Festambiente spread the message that long-term sustainable management of natural capital can only be achieved by increasing citizen’s awareness about the ecological diversity of their local habitats. To this end, three activities were organized with 44 participants of the local community and school students: (a) an edu-

cational laboratory about the importance of Diaccia Botrona to support climate change adaptation and mitigation, (b) an excursion in Padule della Trappola and Bocca d’Ombrone, key tool areas towards attaining favorable conservation status for 94 species under the Birds Directive and 5 habitat types under the Habitats Directive, and (c) a bird-watching activity in Riserva regionale Laguna di Orbetello to acquaint participants to the local avian biodiversity. Overall, the participants experienced the various cultural, social and economic activities that can take place within a protected area without compromising the conservation of habitats and species.



Students getting trained to identify bird species, Orbetello Lagoon / Photo Credits: Circolo Festambiente

Istituto per l'Ambiente e l'Educazione Scholé Futuro and WEEC Network showcased the importance of the Marine Natura 2000 network during the second edition of the Blue Prize International in Italy.

Under the Earth Prize International Days, Blue Prize is organized by [il Pianeta Azzurro](#), a communication and environmental education project of the Scholé Futuro-WEEC

network. The specific award is dedicated to individuals or organizations for their activity on environmental protection and scientific contribution related to the marine and aquatic sciences. During the ceremony a video was projected to highlight the ecological and socioeconomic benefits of the network with contributions from the Natural Marine Reserve of Miramare, a marine Natura 2000 site and Biosphere Reserve. The ceremony

gathered 50 people in Luino, while it was live streamed to some 2.300 people. On the occasion of the World Day of Environmental Education, the NGO networks launched an environmental awareness campaign on ocean literacy through their social media and website platforms to further promote MAD 2020 and engage younger audiences.



Photo Credits: Unsplash / Antonio Sessa

MIO-ECSDE strengthens participatory decision-making for climate change adaptation and mitigation in Mediterranean MPAs



Photo Credits: Thomas Vlachogianni

Over the coming decades, climate change will represent a rapidly increasing challenge for the ecosystems and the livelihoods in the Mediterranean area, which is warming at a rate 20% faster than the world's average. Direct evidence of climate change is already being observed in Mediterranean MPAs, whereas others will likely face them in the next few decades.

Nonetheless, MPAs are among the most effective tools we can use to bring about a positive change. If well-managed, they can contribute to building resilience for both coastal communities and marine biodiversity. Although global, regional, and EU policy provide the framework to address climate change effects, implementation on the ground is essentially missing. Likewise, climate change is not explicitly incorporated in the majority of MPA management plans in the Mediterranean and information to assist MPAs decision-making is limited and fragmented.

There is, therefore, an urgency to mitigate these risks and to consider adaptation options in partnership with local communities, decision-makers, civil society organizations, research bodies, and other socio-economic actors at local, national and regional level.

MIO-ECSDE is a key partner in the project [“MPA Engage: Engaging Mediterranean key actors in Ecosystem Approach to manage Marine Protected Areas to face Climate Change”](#) funded by the Interreg MED program. MPA Engage aims primarily to support MPA managers to adapt to and mitigate the ongoing climate change effects in the Mediterranean Sea. Through a participatory approach, the project will monitor in a harmonized way the climate change impacts, will elaborate vulnerability assessments and for the first time will develop climate change adaptation action plans in 7 Marine Protected Areas located in 6 Mediterranean countries: Spain, France, Italy, Croatia, Albania and Greece.

Over a period of 3 years MPA Engage will focus on:

- » Engaging local communities, small-scale fishermen and citizen scientists in monitoring climate change impacts.
- » Promoting MPAs as nature-based solutions for climate change adaptation.
- » Facilitating a Mediterranean policy dialogue with scientists, MPA managers, decision-makers, environmental NGOs and socio-economic stakeholders.

MIO-ECSDE's role within the project is essential as it is providing guidance and support to the MPA partners involved, towards properly designing and setting up participatory decision-making processes for climate change adaptation and mitigation. The experience obtained by the project partner MPAs will be upscaled by MIO-ECSDE in order to promote climate change adaptation and mitigation actions in MPAs in the entire Mediterranean.

Mediterranean MPAs as long-term designations can play a primary role in providing a systematic observation system, translating principles already consolidated in the political framework, to the real world. The resulting outputs of this project will be key information to support successful mitigation strategies and effective adaptation plans regarding our planetary emergency.



The [Plastic Busters MPAs](#) demo at the Thermaikos Gulf Protected Areas concludes with the recovery and recycling of 7,5 tons of derelict mussel nets



Marine litter prevention and mitigation actions lie at the heart of the Interreg Med Plastic Busters MPAs project. Working for and from the perspective of an MPA manager, Plastic Busters MPAs seeks to offer concrete solutions to prevent and mitigate the impacts of marine litter by showcasing marine litter measures in 10 Mediterranean MPAs.

MIO-ECSDE, who is leading the studying and testing activities of the Plastic Busters MPAs project with regard to marine litter measures, kicked off 3 demos in February 2020; two of them taking place at the Strunjan Landscape Park (Slovenia) and one taking place at the Thermaikos Gulf Protected Areas (Greece). The latter demo focused on showcasing how a derelict fishing gear management scheme can be established and how the sustainable management of such gear can be ensured with the involvement of the fisheries and aquaculture sectors.

Almost one year after its launching, some seven and a half tons of derelict mussel nets have been removed from the demo site, the mussel-farming area of Chalastra. The plastic mussel nets were recovered by the environmental NGO [iSea](#) and were sent to [BlueCycle](#) to be recycled. Both organizations and the [Management Body of the Thermaikos Gulf Protected Areas](#) have been the local

partners in charge of implementing this marine litter mitigation demo. The demo had been identified as a priority action within the 'Action Plan for Marine Litter in Thermaikos Gulf Protected Areas' that was developed by the Management Authority of the Thermaikos Gulf Protected Areas within the framework of the Interreg Med [ACT4LITTER](#) project, under the guidance of MIO-ECSDE.

According to the Coordinator of the [Management Body of the Thermaikos Gulf Protected Areas](#), Ms Athina Panagiotou, derelict mussel nets are a major issue, not only for the area of Chalastra but for the entire coastline of the western part of the gulf, which hosts a large number of marine mussel farms and is responsible for almost 80-90% of the national mussel production, making it Greece's largest mussel production area.

Due to the intense mussel farming activities in the area, high volumes of plastic waste of mussel nets are being generated and mismanaged. Large amounts of these nets are being discarded at sea which eventually wash out onto the coastline. Illegal incineration of the nets has been reported to take place. According to recent beach litter monitoring data gathered by iSea, more than 250 mussel nets are found per 100-metre stretch of coastline.



Photo Credits: Unsplash / Stelios Triantafyllides

“This extremely high amount of mussel nets found on the coastline of Chalastra, highlights one of the most frequent misunderstandings when it comes to the actual sources of marine litter in Greece and the wider Mediterranean”, said Ms Thomais Vlachogianni, Senior MIO-ECSDE Programme Officer.

“Oftentimes, the litter inputs of the fisheries and aquaculture sector are largely underestimated due to the fact that the majority of beach litter surveys are carried out in tourism and recreational destinations, thus reflecting the pressure of tourism and recreational activities. Similar to the case of Chalastra, there are many other areas that are heavily impacted by derelict fishing gear.

Tackling their high abundance, which in some cases is ten-fold higher than the EU beach litter threshold value of 20 litter items per 100-metre stretch, will require tailor-made measures addressing the fisheries and aquaculture sector in order to reach good environmental status”.

The Plastic Busters MPAs demo provided a framework of a potential solution to the problem of derelict mussel nets in the area of Chalastra. Initially, beach litter monitoring activities were carried out to assess the presence of abandoned, lost and/or discarded fishing gear (ALDFG). The obtained data was used to raise the awareness of local communities and engage all stakeholders in

setting up a derelict fishing gear management scheme. Collection points for ALDFG were setup in several locations and the logistics associated with the full value chain of recycling (collection, cleaning, segregation, transportation) were defined, while best practices for the proper collection and management of ALDFG were disseminated to the local fisheries and aquaculture sector.

“The pilot action of Chalastra serves merely as a starting point for our future activities, as we plan to replicate it in all mussel farms of the Thermaikos Gulf. The pilot action provided us with a blueprint for concrete in-the-field actions towards the sustainable management of derelict fishing gear and

long-term positive environmental benefits”, said Ms Anastasia Charitou, iSea Programme Officer. According to Ms Charitou one of the highlights of the action was the active involvement of the local communities. In particular, the mussel farmers and the fishermen welcomed the action and contributed substantially to its success. The pilot action was implemented in close collaboration with the Municipality of Delta and the local Fisheries and Mussel-farming Association of the Municipality of Delta.



Removal of ALDFG at Chalastra / Photo Credits: iSea



Mediterranean Information Office for Environment, Culture and Sustainable Development (MIO-ECSDE)

Who we are

We are a non-profit Federation of 133 Non-Governmental Organizations (NGOs) working in the fields of environment and development in 28 countries of the Euro-Mediterranean area.

Our mission

To protect the natural environment and cultural heritage and promote Sustainable Development in a peaceful Mediterranean by bringing together the efforts NGOs, governments, international organisations, other socio-economic partners and networks.

What we do

We act as a technical and political platform furthering synergies and strengthening public participation on resources and waste, nature and biodiversity, cultural diversity, climate change, health and environment as well as on horizontal and cross-cutting issues.

A network of networks

We facilitate the work of four other networks of major Mediterranean stakeholders:

- » MEIES, the Mediterranean Education Initiative for Environment and Sustainability
- » COMPSUD, the Circle of Mediterranean Parliamentarians for Sustainable Development
- » COMJESD, the Circle of Mediterranean Journalists for Environment and Sustainable Development
- » MedUnNet, the Mediterranean Universities Network for Education for Sustainable Development.

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