LIFE20GIE/IT/000763

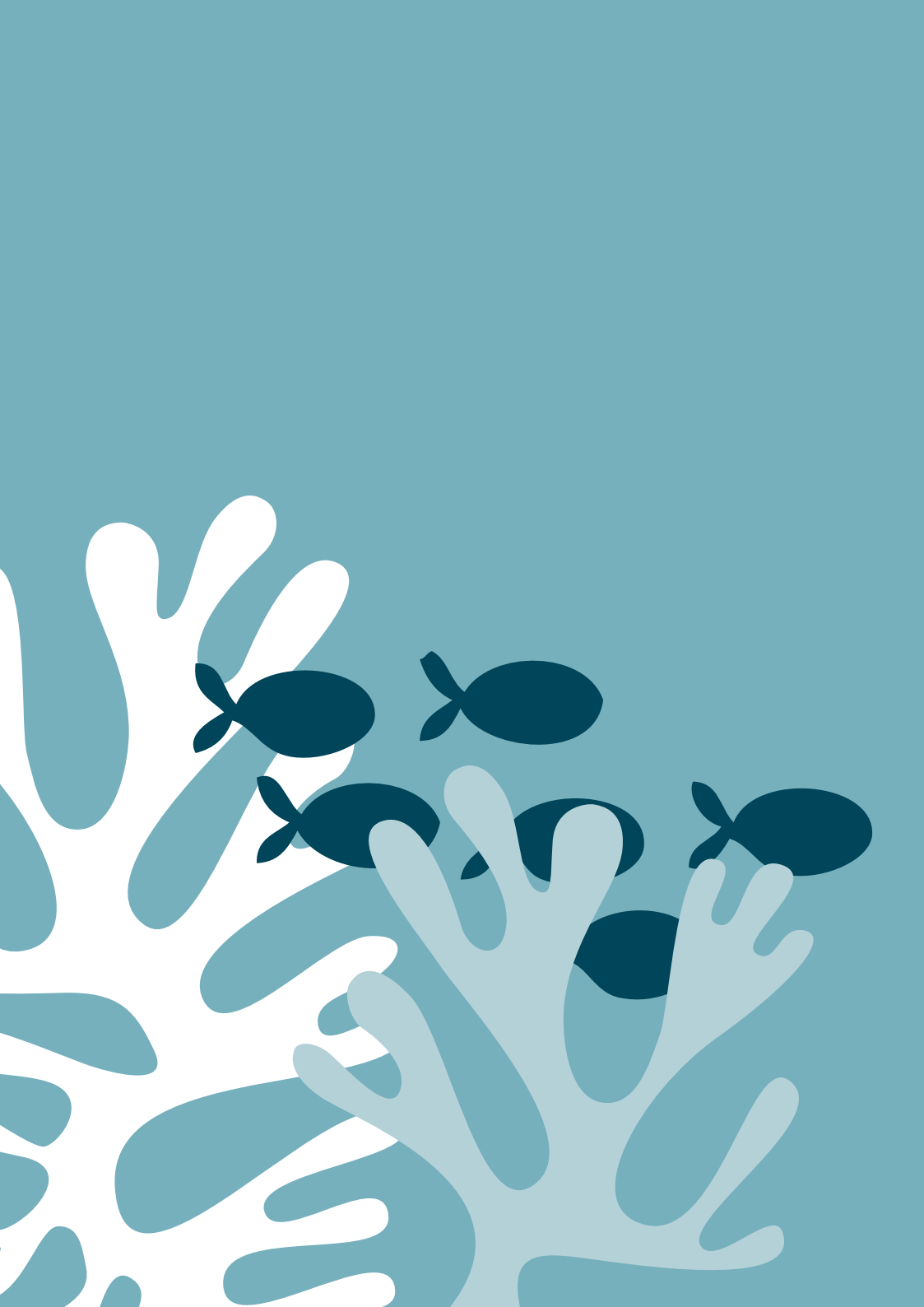
NATURA 2000

PROTECTING THE SEA THROUGH NETWORKING

LIFE SEA.NET

Discovering marine biodiversity

www.lifeseanet.eu



Summary

introduction

The Project

LIFE SEA.NET is a four-year project (01/01/2022-31/12/2025), co-funded by the European Union LIFE programme. Main objectives are to improve the management of Natura 2000 marine sites and to spread awareness about its role in biodiversity conservation and sustainable local development.
Specifically, Life Sea.Net aims to improve the governance of the Natura 2000 marine sites using a common approach that may be replicated, that guarantees a coherent management of the network and ensures a suitable regulation.

Coordinated by Legambiente, LIFE SEA.NET involves three Marine Protected Areas (Punta Campanella, Egadi Islands, Regno di Nettuno), two National Parks (Tuscan Archipelago, Cilento, Vallo di Diano and Alburni), the National Federation of Fishery Enterprises (Federpesca), ISPRA, the Ministry for the Environment and Energy Security, and Basilicata and Campania Regions.

The Natura 2000 Network

Ph R. Ridi Isola di Capraia - Parco Nazionale Arcipelago Toscano

The Natura 2000 network is the main instrument of the European Union's policy for the conservation of biodiversity.
It is a European-wide ecological network, established under the Habitats Directive 92/43/EEC to guarantee the long-term conservation of natural habitats and their endangered fauna and flora species, or those of rare Community level.

The network includes 27000 sites and covers a total land and marine surface area of about 1,150,000 km2. Specifically, Natura 2000 covers 18% of the total land surface and 6% of the total marine surface of the Member States, consequently, it is one of largest coordinated networks of conservation zones in the world.
It is currently made up of two types of areas – Sites of Community Importance (SCIs), as identified in the Habitats Directive, and Special Protection Areas (SPAs), established under the Birds Directive 2009/147/EC concerning the conservation of wild bird species.

The SCIs are then designated as Special Areas of Conservation (SACs).
SCIs and SPAs can vary from being totally overlapping to completely separate areas. In Italy, the SCIs, SPAs and SACs cover, in total, about 19% of the national land surface and more than 6% the marine surface area.
Institutional progress regarding the Natura sites in the marine areas has been much slower than that involving the land areas.

In total, there are 2646 sites in Italy Natura 2000 are 2646, of which only 333 have at least 1% marine area. One of the main reasons for this slowness is due to the lack of scientific information on the distribution of the habitats and protected marine species in the EU, especially regarding the level of detailed information necessary to allow for identifying the sites and introducing appropriate management systems.

The context and value of Natura 2000

Ph P. Vassallo - Area Marina Protetta Punta Campanella

The value and the benefits of the Natura 2000 network for the EU Mediterranean countries are still little known by the public and by the various stakeholders, despite the network having been set up more than 30 years ago. Because the information concerning it is contained on institutional sites and linked to identification codes and latin scientific terms not accompanied by photos. Moreover, it is not easy to identify the network sites at sea, as they are not even shown on nautical charts or on website maps. Knowledge about the habitats and their state of conservation is scarce and fragmented; and Marine Protected Areas and the Natura 2000 sites suffer from the lack of a coordinated approach among the different levels of management (local, national, transnational) and the absence of effective management plans.

The level of awareness of the socio-economic value of the Natura 2000 network and Marine Protected Areas is extremely low, yet thanks to the regulation of human activities, in the MPAs and Natura 2000 sites there are ecosystems now at an ecological level able to contribute to rebuilding the fish stocks and providing resilience to climate change, with consequences also benefitting the fisheries sector. A recent EU study (The Economic Benefits of the Natura 2000 Network, 2013) highlights how the Natura 2000 network in the sea and in the MPAs support a series of ecosystem services of high environmental and socio-economic value.

The value of the benefits offered by the network's currently protected marine areas (equivalent to 4.7% of the EU marine area) amounts to about € 1.4-1.5 billion per year, but this would increase to € 6.0-6.5 billion per year for a protection of 20% of marine surfaces.

The actions and objectives

Ph P. Vassallo - Area Marina Protetta Punta Campanella

The macro-objectives of Life SEA.NET are two:

- **Improving the governance of the Natura 2000 marine sites.** The project is implementing a governance toolkit that includes a series of management tools such as species and habitats monitoring protocols, guidelines for proper application of V.Inc.A procedures, a road map on identification and the setup of a governance strategy for offshore/transboundary sites etc,
- **Increasing the knowledge about the Natura 2000 network,** through different initiates such as meetings, training, awareness-raising, and citizen science initiatives addressed to key actors.

Project's key actions:

- Testing species and habitats monitoring protocols
- Drawing up a practical guide to identify the conservation measures for the Natura 2000 marine sites
- Adopting standard monitoring procedures to assess the level of conservation of the species and habitats in the SCIs/SACs
- Developing a Manual for the correct application of the procedures for the impact assessment (V.Inc.A) in the marine sites
- Establishing a procedure to support the managers of the N2K sites in defining the objectives and conservation measures for offshore sites and creating a transboundary strategy to enlarge
the Natura 2000 marine network.
- Organizing information, training and awareness raising meetings, addressed to key staholders (fishers, citizes, administrators, local economic operators).

The species and habitats of the Life Sea.Net project

Delfini *Tursiops truncatus*
e tartaruga *Caretta caretta*

The bottlenose dolphin (*Tursiops truncatus*)

The bottlenose dolphin is one of the eight species of Cetaceans regularly found in the Mediterranean Sea and belongs to the suborder Odontoceti (toothed cetaceans).
It is a marine mammal with a high capacity to adapt, even if they prefer coastal habitats, and temperate and tropical seas. In the Mediterranean, they mainly feed on cephalopod molluscs and fish, such as European hake (Merluccius merluccius) and blue whiting (Micromesistius poutassou). They are curious and sociable animals, usually found in groups called pods, made up of a maximum of ten individuals. The interactions with the professional fishers is the main threat for this species. The bottlenose dolphins can suffer from serious injuries or remain accidently entangled in the nets with often fatal outcomes. Shipping traffic and infectious diseases

The loggerhead sea turtle (*Caretta caretta*)

It is the most common and widespread sea turtle of those that reproduce in the Mediterranean Sea.
It feeds on molluscs, crustaceans, gastropods, echinoderms, fish and jellyfish. In Italy, it mainly reproduces along the southern mainland and island coasts.
It lays its eggs between the end of May and August and each female nests 3-4 times per season, every 2-3 years. Each nest contains, on average, one hundred eggs.
At sea, the main threats for the species are accidental capture (bycatch) in the fishing nets, collisions with boats, consumption of plastic and poisoning from chemical pollutants.
The factors negatively impacting the nesting are the nocturnal human visits to the

The noble pen shell
(*Pinna nobilis*)

It is the largest of the bivalve molluscs in the Mediterranean, can reach between 80 and 100 cm in height. It lives among the seagrass beds, especially Posidonia oceanica, and on pebbly, sandy and muddy seabeds up to 60 m in depth. It is endemic to the Mediterranean, and along all the Italian coasts. The main threats include: a severe death caused by a pathogen, the regression of the Posidonia meadows, its harvesting for ornamental or food purposes, boat anchorage, illegal trawling, the expansion of alien species such as the alga Lophocladia lallemandii, and climate change.

The hatpin urchin
(*Centrostephanus longispinus*)

The hatpin urchin is the only sea urchin species in the Mediterranean, with very long and fine spines, coloured with black, purplish and whitish stripes.
It lives on hard, sandy, muddy and detrital sea bottoms, in Posidonia oceanica meadows, at a depth of between 40 and 200 metres.
During the day it hides in ravines and cavities and comes out of its refuge at night to feed. Many aspects about the biology and ecology of this species are still unknown. It is threatened by the indiscriminate harvesting by divers and by the acidification of the seas and oceans.

Red coral
(*Corallium rubrum*)

Red coral belongs to the Anthozoan group, the so-called “floral animals”. It is the only species of the corallium genus that lives in the Mediterranean. It has a hard calcareous skeleton and forms branched colonies of a bright red that can reach 50 cm in height. The polyps are, instead, white and transparent. It lives in areas of very specific conditions – constant salinity, weak currents and dim light. Therefore, it colonises caves, under rocky overhangs and in crevices at a depth of between 5 to 800 metres. It feeds on plankton and suspended organic matter. Overfishing and the impacts of climate change and underwater tourism have caused its drastic decline.

The Mediterranean slipper lobster
(Scyllarides latus)

The slipper lobster is a crustacean that can reach 45 cm in length, even if it normally does not exceed 30 cm. It colouring varies from yellow to reddish-brown. It has a rectangular and flattened carapace and short strong claws with pincers.
It is found at a depth of between 2 and 50 metres, on rocky sub-strata with ravines and crevices and in Posidonia oceanica meadows. It is a nocturnal and gregarious animal, during the day remaining in its lair, while at night coming out in search of bivalve molluscs and gastropods for food. This species has become endangered by its indiscriminate fishing for commercial purposes.

Posidonia oceanica meadows

Posidonia meadows are considered the lungs of the Mediterranean Sea. They grow in well-oxygenated waters, on sandy or pebbly substrata until 30-40 cm of depth. Posidonia oceanica is a marine plant endemic to the Mediterranean and is differentiated from other algae by the presence of roots, stems (rhizomes), leaves, flowers, fruit and seeds. It protects beaches from erosion and is a valuable ally in the fight against climate change because it is able to remove carbon dioxide from the atmosphere and store it in a structure called a “matte”. Posidonia beds provide habitat and food for many species of fish, crustaceans, molluscs and bryozoans. Posidonia has suffered severe regression due to pollution, trawling and indiscriminate anchoring of boats.

The ferruginous limpet
(Patella ferruginea)

The ferruginous limpet is a gastropod mollusc that lives along coastal stretches subject to wave motion, with high oxygen concentrations and low pollution levels. In Italy found only in the Egadi Islands, Pantelleria Island, Sardinia, and the Piombino and Portofino promontories.
The main threats are its indiscriminate harvesting for food, collections and its use as bait, and pollution causing the disappearance of the seaweed it feeds on.

Cetaceans

The cetacean order includes whales, dolphins and porpoises. All the animals belonging to this order have flipper-shaped forelimbs, and no hind limbs. Their nostrils are made of one single or double blowhole on the top of their head. Eight species of cetaceans live permanently in the Mediterranean: the fin whale (Balaenoptera physalus), the sperm whale (Physeter macrocephalus), the bottlenose dolphin (Tursiops truncatus), the striped dolphin (Stenella coeruleoalba), the common dolphin (Delphinus delphi), the long-finned pilot whale (Globicephala melas), Risso's dolphin (Grampus griseus) and Cuvier's beaked whale (Ziphius cavirostris).

Trottoirs

Trottoirs ("footpaths") are very important biostructures in the Mediterranean Sea. They appear as coastal footpaths and result from the growth of algae that contain calcium carbonate or aragonite and molluscs of the Vermetidi family.
They are typically found on steep-sided reefs exposed to high wave motion. Trottoirs are habitats rich in biodiversity, as tidal pools are formed along them which provide food and shelter for a multitude of plant and animal species.


Ph. Progetto Reeforest

Cystoseira meadows

Cystoseira meadows are made up of brown, bushy or arborescent algae belonging to the Cystoseira family. They are generally found in underwater reef areas, where they grow thickly and luxuriantly, creating stretches of very dense vegetation, up to 40 cm in height. Cystoseira meadows play important ecological roles such as the formation of microhabitats, the production of oxygen and organic matter and the uptake of carbon dioxide. This habitat is threatened by urbanisation and pollution, alien species and climate change.

The Coralligenous habitat

The coralligenous habitat is one of the biocenosis with the most varied biodiversity in the Mediterranean and is a habitat of Community interest. They mainly grow on rocky sea bottoms at a depth of between 25 and 150 m, it develops thanks to the growth and stratification of plants (mainly red algae) and animals (coral, sea whips, sponges). The coralligenous habitat plays a role of primary importance in maintaining the population of the entire marine environment, a key element in marine productivity and the carbon cycle. It is endangered by pollution, illegal harvesting of the 'date shell' and red coral, and climate change.

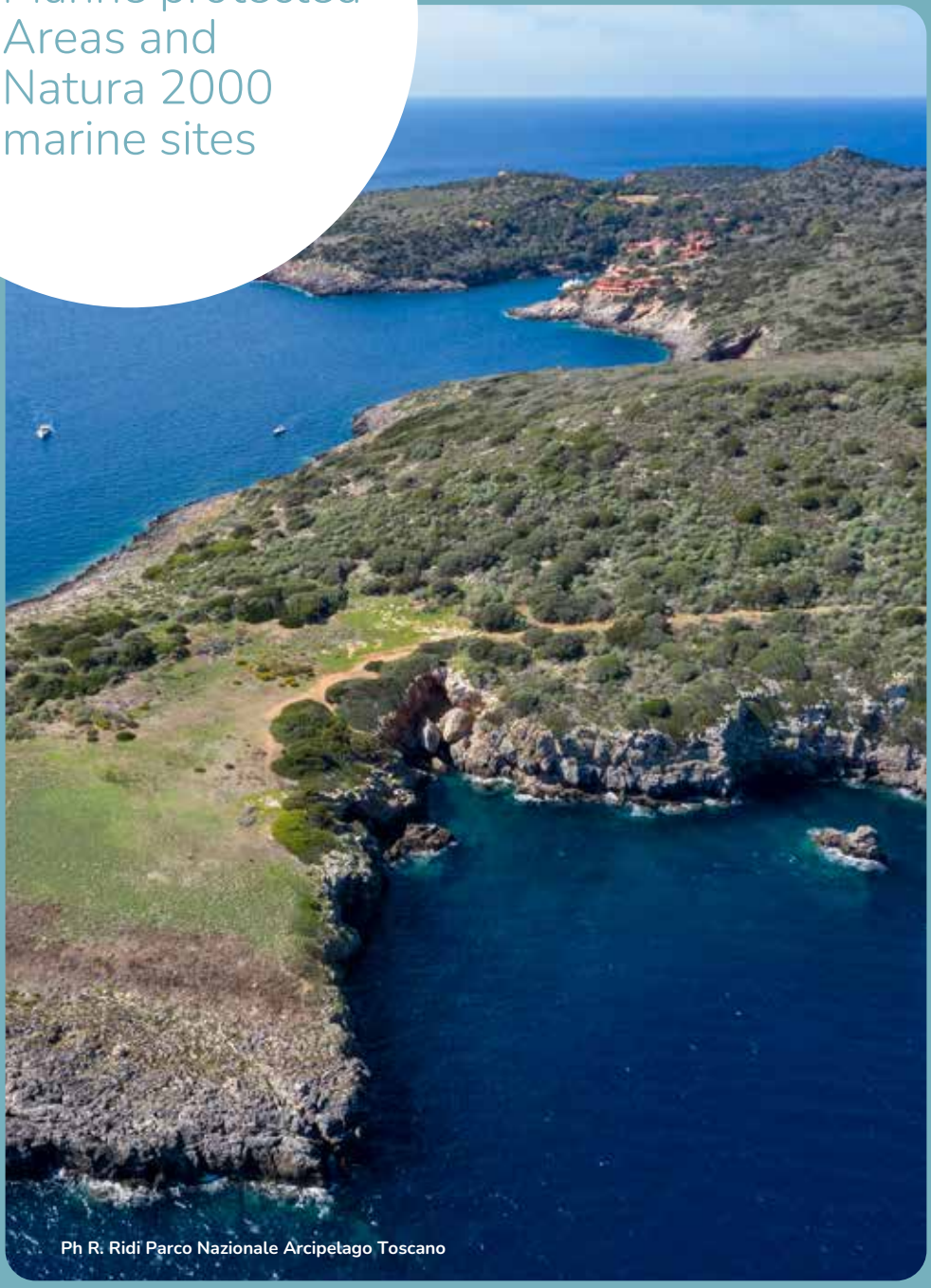
The sea date
(Lithophaga lithophaga)

The sea date is an oval-shaped bivalve mollusc, about 60-90 mm in length.
They live in calcareous rock cavities, boring into the rock thanks to the secretions produced by their glands. They are usually found at a depth of up to 20-25 metres.
They have a very slow growth rate, taking, on average, 18-36 years to reach only 5 cm in length!
The species is currently in decline due to illegal fishing, that is carried out by air breathing apparatus and pneumatic hammers.

The Mediterranean monk seal
(*Monachus monachus*)

Although it is not a target species of the Life SEA.NET project, it is being monitored because of more the most frequent sightings in Italian seas. The monk seal is the only focid species present in the Mediterranean. It lives most of its life in the marine environment where it can dive up to 205 m and travel up to 280 km. It feeds mainly on bony and cartilaginous fish, crustaceans and cephalopods. The species uses some coastal environments for moulting, resting, calving and nursing. The main threats for this species are by-catches in fixed gillnets, anthropic disturbance in coastal sites and anthropic disturbance at coastal sites and pollution.

Marine protected Areas and Natura 2000 marine sites



Ph R. Ridi Parco Nazionale Arcipelago Toscano

The aim of LIFE SEA.NET is to improve the governance and management of Natura 2000 marine sites using a consistent and replicable approach able to achieve the objectives of the EU policies on biodiversity. Therefore, SEA.NET is implemented at a national level thanks to some pilot projects being carried out in 12 Natura 2000 sites identified within protected areas.

TUSCAN ARCHIPELAGO NATIONAL PARK

> IT5160006 Capraia Island – land and sea areas
> IT5160014 Montecristo and Formica di Montecristo Islands – land and sea areas
> IT5160013 Pianosa Island - land and sea areas
> IT5160002 Gorgona Island - land and sea areas

PUNTA CAMPANELLA MARINE PROTECTED AREA

> IT8030010 Seabeds of Ischia, Procida and Vivara

REGNO DI NETTUNO MARINE PROTECTED AREA

> IT8030010 Seabeds of Ischia, Procida and Vivara

CILENTO, VALLO DI DIANO AND ALBURNI NATIONAL PARK

> IT8050036 Santa Maria di Castellabate Marine Park
> IT8050037 Costa degli Infreschi Marine Park

EGADI ISLANDS MARINE PROTECTED AREA

> ITA010024 the Egadi Islands Archipelago Seabeds

Fishing in Natura 2000 marine sites and marine protected areas

Ph Fabrizio De Marco - Cetara (SA)

Overfishing in the Mediterranean has fallen significantly in the past decade, but exploitation of most commercial species is far from sustainable, according to scientists and international organizations such as the General Fisheries Commission of the Mediterranean (GFCM) of the Food and Agriculture Organization of the United Nations (FAO).

Therefore, it is important to implement an effective management system that can achieve social and economic benefits while maintaining the sustainable production of fishery resources and the function and structure of the ecosystem they depend on. The transformation of the fisheries sector is the only way to ensure it continues to underpin food production and livelihoods for present and future generation.
Marine Protected Areas and Natura 2000 marine sites can enhance fisheries' sustainability, as their main goal is to set conservation objectives, reducing the impact of fishing on vulnerable marine habitats and species, while ensuring sustainable management fishery policies.

Natura 2000 can serve as a means to enhance the sustainable management of marine biological resources, not least fish stocks. To reach this goal Natura 2000 must implement good stakeholder consultation and effective management.

Sustainable fishery

Ph Daniel Li Veli

According to the last 2024 edition of The State of World Fisheries and Aquaculture, led by FAO in collaboration with Members, the percentage of overfished stocks in the Mediterranean has fallen below 60%, following a decreasing trend that started a decade ago. However, fishing pressure in the Mediterranean is still at twice the level considered sustainable. Furthermore, the fishery sector still faces major challenges from climate change, pollution, biodiversity loss, invasive alien species and other anthropogenic impacts. We need to accelerate efforts to ensure 100% of fishery stocks are placed under effective management, to reverse unsustainable practices, combat illegal, unreported and unregulated fishing, and reduce overfishing.

To tackle these challenges, we must move towards sustainability by strengthening scientific advice in support of management, supporting livelihoods for coastal communities through sustainable small-scale fisheries, developing management advice towards the conservation and sustainable use of fisheries at all levels (biological, social, economic and environmental) and contributing to the sustainable management of Mediterranean fisheries through capacity development and technical support.

According to the Marine Stewardship Council (MSC) – an international non-profit organization which aims to set standards for sustainable fishing – we need to suppport the management of fishing resources so that they remain available to future generations

LIFE SEA.NET App.

The mobile application of Life SEA NET (both for iOS and Android) is an educational tool to raise awareness about Nature 2000 among students and the general public. Furthermore, the App aims at supporting scientific research by gathering data about the project target species such as sea turtle, bottlenose dolphin, Posidonia oceanica, red coral etc.

The App is free and includes information about these endangered species and the target project areas.
The App is a funny way to engage people with conservation and each observation contributes to biodiversity science.

The LIFE Programme

The LIFE Programme is the EU's funding instrument for the environment and climate action.
In pursuing the achievement of the objectives and targets set by environmental, climate and relevant energy legislation, policy and plans, such as the European Green Deal, the LIFE Programme contributes to a just transition towards a sustainable, circular, energy efficient, renewable energy-based, climate-neutral and resilient economy, to the protection, restoration and improvement of the quality of the environment, including the air, water and soil, and of health, and to halting and reversing biodiversity loss, including by supporting the implementation and management of the Natura 2000 network.

To date, LIFE has co-financed more than 5,000 projects.

Project realised with the contribution of the EU LIFE Programme

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Parco Nazionale del Cilento, Vallo di Diano e Alburni

Area Marina Protetta Punta Campanella

Regno di Nettuno Area Marina Protetta

FEDERPESCA Federazione Nazionale delle Imprese di Pesca

Through the LIFE Programme, set up in 1992, The European Union provides funding for projects to safeguard the environment and nature. The aim is to support, at the European level, measures and projects to protect species and habitats at risk, and environmental, awareness-raising and information policies. Thanks to the LIFE Projects, it has been possible to contribute to implementing the Habitats and Birds Directives, and pursue the EU's goal to halt the loss of biodiversity by 2030.

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