

Key criteria for successful MPAs in Europe

and an assessment of the costs
and benefits of functioning
well-managed MPAs.



An analysis to provide a clear understanding and assessment of the needs, gaps and key criteria associated with the successful implementation and management of Marine Protected Areas in Europe and the key associated benefits and services they provide for people.

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Executive Summary

Marine Protected Areas are a powerful management tool that, if designed and implemented well, can result in significant benefits for nature and people. By protecting marine ecosystems from harmful impacts in discrete spatial areas, marine species and habitats can recover and thrive, increasing ecosystem function and resilience so that essential services for the environment and people are maintained or increased. These services can result in multiple benefits for society including socio-economic benefits through improved fisheries, sustainable aquaculture and nature-based tourism supporting local businesses and livelihoods as well as wider social impacts and improved well-being for local communities and stakeholders. Functioning MPAs in the European Union (EU) are critical for the competitiveness and resilience of Member State blue economies.

A recent assessment of the status of European seas found that large parts remain under severe stress with none of the regional seas assessed in good overall condition and many species and habitats in poor status¹. Pollution, resource overexploitation, habitat degradation and invasive species combined with increasing impacts of climate change are intensifying stress on marine ecosystems and reducing their resilience.

The spatial coverage of MPAs in European waters designated by 22 coastal States through the Natura 2000 network and other national designations was 13.7% in 2023². Although the spatial coverage tripled between 2012 and 2023³ the level of protection within MPAs for marine and coastal ecosystems is generally poor across Europe. In 2022, 86% of biodiversity in European MPAs had light, minimal or no protection based on the level of legal restrictions for the most harmful (industrial) activities such as dredging, mining or destructive fishing practices⁴. For example, habitat-damaging fishing gear was used in over 500 MPAs in Europe and was more prevalent in larger offshore sites⁵. Effective management to meet conservation objectives is generally lacking across Member States, sea regions and types of MPAs. Only 18% of the EU seas covered by MPAs in 2024 had management plans, although there was substantial variation between sea regions⁶.

This report identifies key criteria for MPA success with a focus on the European (EU) context and the range of ecological and socioeconomic benefits they can provide when designed, implemented and managed effectively. Evidence to support the key criteria and confirmed environmental and socioeconomic benefits of well-functioning MPAs is provided by six case studies and over forty examples of MPA studies from multiple regions.

An overview of the key criteria and enabling conditions required for successful MPAs is provided based on studies and assessments of MPAs generally and for examples in Europe including three specific case studies. Enabling conditions represent the suite of criteria that

need to be in place for an MPA to be fully successful from planning to establishment and active management. They cover key ecological, social, financial and organisational criteria including **stakeholder engagement, involvement and support, capacity for management including monitoring and enforcement, adaptive management and evidence-based decision making**. These key criteria have all been clearly identified for numerous examples of successful MPAs in Europe in case studies and the literature. All are essential for effective MPAs with **stakeholder engagement, involvement and support** identified as a critical element for success, with **strong enforcement and clear management objectives and processes in place** also often highlighted.

An assessment of existing evidence shows that there are over forty published examples of MPAs in Europe providing environmental and socioeconomic benefits including fisheries- and tourism-related benefits. Well designed and managed MPAs provide multiple benefits for fisheries and the people that depend on them including improved fish stocks, increased catches, greater revenue for fishers and other income-generating benefits through sustainability certification and higher demand for locally-caught fish. There is also growing evidence that marine and coastal tourism associated with MPAs in Europe is generating substantial revenue for local economies through recreational activities. Activities such as SCUBA diving, recreational fishing and boat charters in MPAs in multiple European countries have substantially contributed to local economies through expenditure and job creation in tourism.

The revenue generated by tourism can also be used to support the costs of MPA management through taxes by local authorities. Overall, well-managed MPAs provide significant benefit to local economies with higher protection levels generating greater socioeconomic benefits. Strengthening protection for existing MPAs with sub-optimal management could yield substantial economic gains for European Coastal States.

A summary of cost-benefit analyses of MPAs in Europe shows that although there are economic costs to establishing and managing MPAs, these are far outweighed by the benefits accrued over time for society. Studies show that MPAs have positive effects on local economic development with substantially higher returns in socioeconomic benefits for every euro invested in MPA management. There are also opportunities to improve efficiencies in MPA management and assessment processes in Europe which can reduce costs further.

The current coherence of EU legislation to support MPA designation and implementation is an issue for offshore waters where a legal bottleneck exists for the management of fishing activities in MPAs. The lack of protection and effective management can be addressed by streamlining the process of joint regulation to reduce blockages and delays. This will need to be resolved quickly if the EU is to meet its legal obligations of 30% MPA coverage in its waters by 2030, i.e. in less than four years.

Effectively managed MPAs will enable the EU to meet several legal objectives by having a positive impact on biodiversity, fisheries, the blue economy and climate adaptation. Functioning MPAs will contribute to numerous goals for multiple EU strategies, policies and action plans covering biodiversity, nature restoration, fisheries, the blue economy, maritime spatial planning, and climate adaptation and neutrality.

Supporting existing MPAs to improve management where needed while also planning additional MPAs using the key criteria outlined should be regarded as a top priority for Europe. A larger network of effectively managed MPAs across European waters will improve the resilience of ecosystems and enable the competitiveness and resilience of the blue economy to support coastal livelihoods, sectors and the well-being of local communities. Failing to manage MPAs effectively is highly likely to result in socioeconomic costs for society in a business-as-usual scenario where biodiversity and ecosystem services continue to decline and as climate change accelerates. Economic costs will continue to increase as ecosystems degrade further linked to climate and local impacts in the absence of functioning MPAs and the benefits we know they can provide.

1 Andersen, J.H, Korpinen, S., Reker, J. et al. 2026. Marine Messages III. State, pressures, and choices for the future of Europe's seas. ETC-BE Report 2026/3. European Topic Centre on Biodiversity and Ecosystems. 80 pp + Supplementary Material. doi:10.5281/zenodo.21358681
2 <https://www.eea.europa.eu/en/analysis/indicators/marine-protected-areas-in-europes-seas>
3 Ibid
4 Aminian-Biquet, J. et al. 2024. Over 80% of the European Union's marine protected areas only marginally regulate human activities. One Earth 7, 1–16. <https://doi.org/10.1016/j.oneear.2024.07.010>
5 Perry, A. L., Blanco, J., García, S. &Fournier, N. Extensive use of habitat-damaging fishing gears inside habitat-protecting marine protected areas. Front. Mar. Sci. 9, 811926 (2022). <https://www.frontiersin.org/journals/marine-science/articles/10.3389/fmars.2022.811926/full>
6 World Wide Fund for Nature (WWF). 2025. Protecting and Restoring our Seas – Europe's Challenge to meet the 2030 Targets. WWF, Brussels, Belgium. 32 pp.



Photo: Danny Copeland / Blue Marine Foundation

1. Background and Introduction

Europe's Marine Protected Areas (MPAs) are under considerable pressure. EU Member States have been slow to control fishing and the development of other economic activities in MPAs, largely due to concern about backlash from the fishing sector and inconsistencies between key legislation governing fisheries and biodiversity, particularly in offshore waters. From 2028, EU MPA budgets will fall under new EU funding arrangements, with less money potentially available for designation and management. In addition, the Habitats Directive is being tested in its efficiency to protect nature against development, and how the value of enhanced natural capital is assessed. There is a need to provide a comprehensive evidence base to counter arguments that the Habitats Directive constitutes an obstacle to economic development and competitiveness in the EU, particularly for aspects which relate to the protection of the marine and coastal environment and the establishment and management of the Natura 2000 network of MPAs. This report addresses those concerns.

This section provides background information on the status of EU seas and coasts and current EU legislation to protect marine and coastal ecosystems. It will also briefly provide information on the rationale of MPAs and the potential benefits they can provide for the environment and society if effectively designed and managed.

1.1 *Background on the use of MPAs as tools to safeguard biodiversity and ecosystem services and the economic benefits they can provide for society.*

Marine Protected Areas are a powerful management tool that, if designed and implemented well, can result in significant benefits for nature and people. This is clearly shown from multiple examples in all oceans and seas, including European waters⁷⁸. When effectively managed, MPAs can act as catalysts for thriving, climate resilient and prosperous coastal communities across Europe⁹. By protecting marine biodiversity and ecological processes from harmful impacts in discrete spatial areas, marine species and habitats can recover and thrive, increasing ecosystem function and resilience so that essential services for the environment and people are maintained or increased. These services can result in multiple benefits for society including socio-

economic benefits through improved fisheries both within and adjacent to MPAs, sustainable aquaculture and nature-based tourism supporting local businesses and livelihoods as well as wider societal benefits such as improved well-being for local communities and stakeholders. MPAs can also retain ecosystem resilience by buffering against disturbances such as marine heatwaves or recovery from storm events¹⁰. Functioning MPAs in the EU are therefore critical for the competitiveness and resilience of EU Member State blue economies such as the fisheries sector through the protection of seafood supply, the rebuilding of fish populations and support for local livelihoods and economies¹¹. Moreover, if MPAs in Europe are implemented and enforced at the scale required by the Nature Restoration Regulation (NRR), entire marine ecosystems and their associated economies could benefit¹² at a vastly greater scale.

However, MPAs are not a panacea and cannot prevent downstream effects from land-based pollution unless this is considered at the design stage as part of an integrated landscape-seascape approach. In some cases, coastal or inshore MPAs can reduce pollution impacts by protecting and restoring habitats or ecosystems (e.g. oyster and seagrass beds, salt marshes) that encourage sediment removal from the water column either actively (biofiltration) or passively (reduced water motion).

- 7 Costello, M.J. 2024. Evidence of economic benefits from marine protected areas. *Sci. Mar.* 88(1): e080. <https://doi.org/10.3989/scimar.05417.080>
- 8 European Commission. Study on the Economic Benefits of Marine Protected Areas: Literature Review Analysis, European Commission, Executive Agency for Small and Medium-sized Enterprises, Publications Office. 2018. <https://data.europa.eu/doi/10.2826/40733>
- 9 Oceana Europe, Seas at Risk, ClientEarth & Protect Our Catch. 2025. Briefing: The EU Ocean Pact and Marine Protected Areas – Supporting coastal jobs and climate resilience thanks to a healthier ocean. 5 pp. <https://europe.oceana.org/reports/briefing-the-eu-ocean-pact-and-marine-protected-areas/>
- 10 Sheehan, E.V., L.A. Holmes, B.F.R. Davies, A. Cartwright, A. Rees & M.J. Attrill (2021). Rewilding of protected areas enhances resilience of marine ecosystems to extreme climatic events. *Frontiers in Marine Science*. 8: 671427. DOI: <https://doi.org/10.3389/fmars.2021.671427>
- 11 Oceana Europe, Seas at Risk, ClientEarth & Protect Our Catch. 2025. Briefing: The EU Ocean Pact and Marine Protected Areas – Supporting coastal jobs and climate resilience thanks to a healthier ocean. 5 pp.
- 12 EEA (2015b): Marine protected areas in Europe's seas. EEA Report 3/2015. <https://www.eea.europa.eu/en/analysis/publications/marine-protected-areas-in-europes/marine-protected-areas-ineuropes/@download/file>

1.2. Status of the marine and coastal environment in the EU and the existing legislation for biodiversity protection and management using MPAs.

A recent assessment of the status of European seas found that large parts remain under severe stress with none of the regional seas assessed in good overall condition and many species and habitats in poor status¹³. Pollution, resource overexploitation, habitat degradation and invasive species combined with increasing impacts of climate change are intensifying stress on marine ecosystems and reducing their resilience. The spatial coverage of MPAs in European waters designated by 22 EU coastal States through the Natura 2000 network and other national designations was 13.7% in 2023¹⁴.

MPA designation occurs through several EU legal instruments (the Marine Strategy Framework Directive (MSFD) and mainly the Birds and Habitats Directive under the Natura 2000 system). Other relevant instruments and strategies are the Maritime Spatial Planning Directive (MSPD), the Nature Restoration Regulation (NRR), the 2030 Biodiversity Strategy and the European Ocean Pact. In addition to EU legislation the regional seas conventions within Europe have designated MPAs through the OSPAR, HELCOM and Barcelona Conventions covering the North-East Atlantic Ocean, the Baltic Sea and the Mediterranean Sea respectively. Nature conservation legislation also interacts with other legal frameworks such as the EU Common Fisheries Policy (CFP) and national laws.

Although the spatial coverage of European MPAs tripled between 2012 and 2023¹⁵ the level and scale of protection within MPAs for marine and coastal ecosystems is generally poor across Europe. In 2022, 86% of the biodiversity in European MPAs had light, minimal or no

protection based on the level of legal restrictions defined by the MPA Guide Framework¹⁶ for the most harmful (industrial) activities such as dredging, mining or destructive fishing practices¹⁷. For example, an assessment revealed that habitat-damaging fishing gear was used in over 500 MPAs in Europe and was more prevalent in larger offshore sites¹⁸. Effective management to meet conservation objectives is generally lacking across Member States, sea regions and types of MPAs. A pan-European MPA assessment revealed that only 18% of the EU seas covered by MPAs in 2024 had management plans, although there was substantial variation between sea regions (e.g. 60% of MPA coverage with management plans in the Baltic Sea compared to 6% for the Mediterranean)¹⁹.

1.3. MPA planning and management

Having a management plan does not necessarily mean that an MPA is well managed as effective management depends on the actual implementation of the plan over time to meet conservation and socioeconomic objectives. During the planning stage it is critical to engage with and fully involve all local stakeholders in the design of the MPA so that there is agreement by local communities and sectors on the type and management of the protected area. Ensuring that there is adequate capacity and support available to manage effectively is also important, particularly for monitoring, evaluation and enforcement.

1.4. The scope of the report

This report identifies key criteria for MPA success with a focus on the European (EU) context and the range of ecological and socioeconomic benefits they can provide when designed, implemented and managed effectively. Evidence to support the key criteria and confirmed benefits of well-functioning

MPAs is provided by six case studies of MPAs in Europe, mainly in the Mediterranean (Table 1; Figure 1). Additional examples of European MPAs from multiple regions that have provided clear benefits are summarised in Annex 1. A summary of cost-benefit analyses of MPAs in Europe with an example of cost efficiency for MPA assessment can be found in Section 4. Finally, the current coherence of EU legislation to support MPA designation and implementation is briefly discussed in Section 5.



Photo: Giorgos Moutafis / Blue Marine Foundation

- 13 Andersen, J.H., Korpinen, S., Reker, J. et al. 2026. Marine Messages III. State, pressures, and choices for the future of Europe's seas. ETC-BE Report 2026/3. European Topic Centre on Biodiversity and Ecosystems. 80 pp + Supplementary Material. doi: 10.5281/zenodo.21358681
- 14 <https://www.eea.europa.eu/en/analysis/indicators/marine-protected-areas-in-europes-seas>
- 15 Ibid
- 16 Grorud-Colvert, K., J. Sullivan-Stack, C. Roberts, et al. 2021. The MPA Guide: a framework to achieve global goals for the ocean. Science 373. <https://doi.org/10.1126/science.abf0861>
- 17 Aminian-Biquet, J. et al. 2024. Over 80% of the European Union's marine protected areas only marginally regulate human activities. One Earth 7, 1–16. <https://doi.org/10.1016/j.oneear.2024.07.010>
- 18 Perry, A. L., Blanco, J., García, S. & Fournier, N. Extensive use of habitat-damaging fishing gears inside habitat-protecting marine protected areas. Front. Mar. Sci. 9, 811926 (2022). <https://www.frontiersin.org/journals/marine-science/articles/10.3389/fmars.2022.811926/full>
- 19 World Wide Fund for Nature (WWF). 2025. Protecting and Restoring our Seas – Europe's Challenge to meet the 2030 Targets. WWF, Brussels, Belgium. 32 pp.

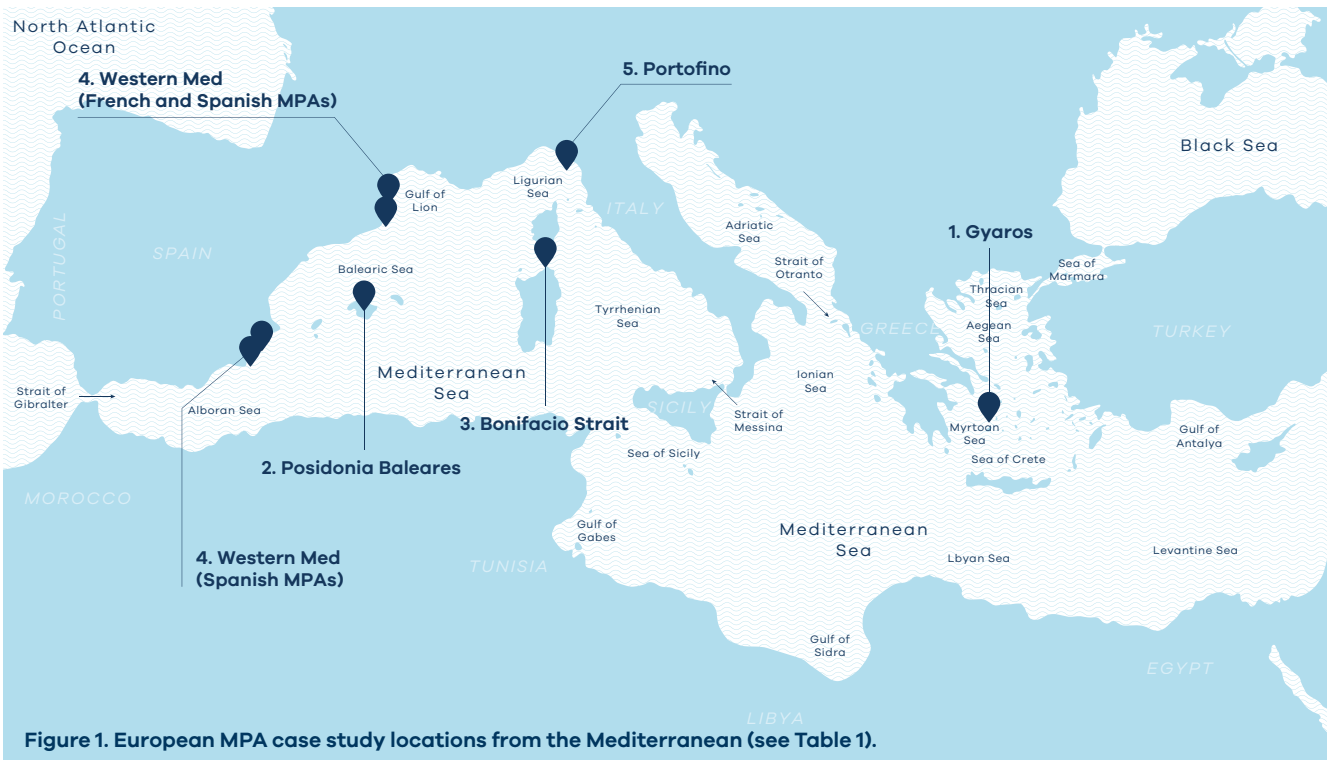


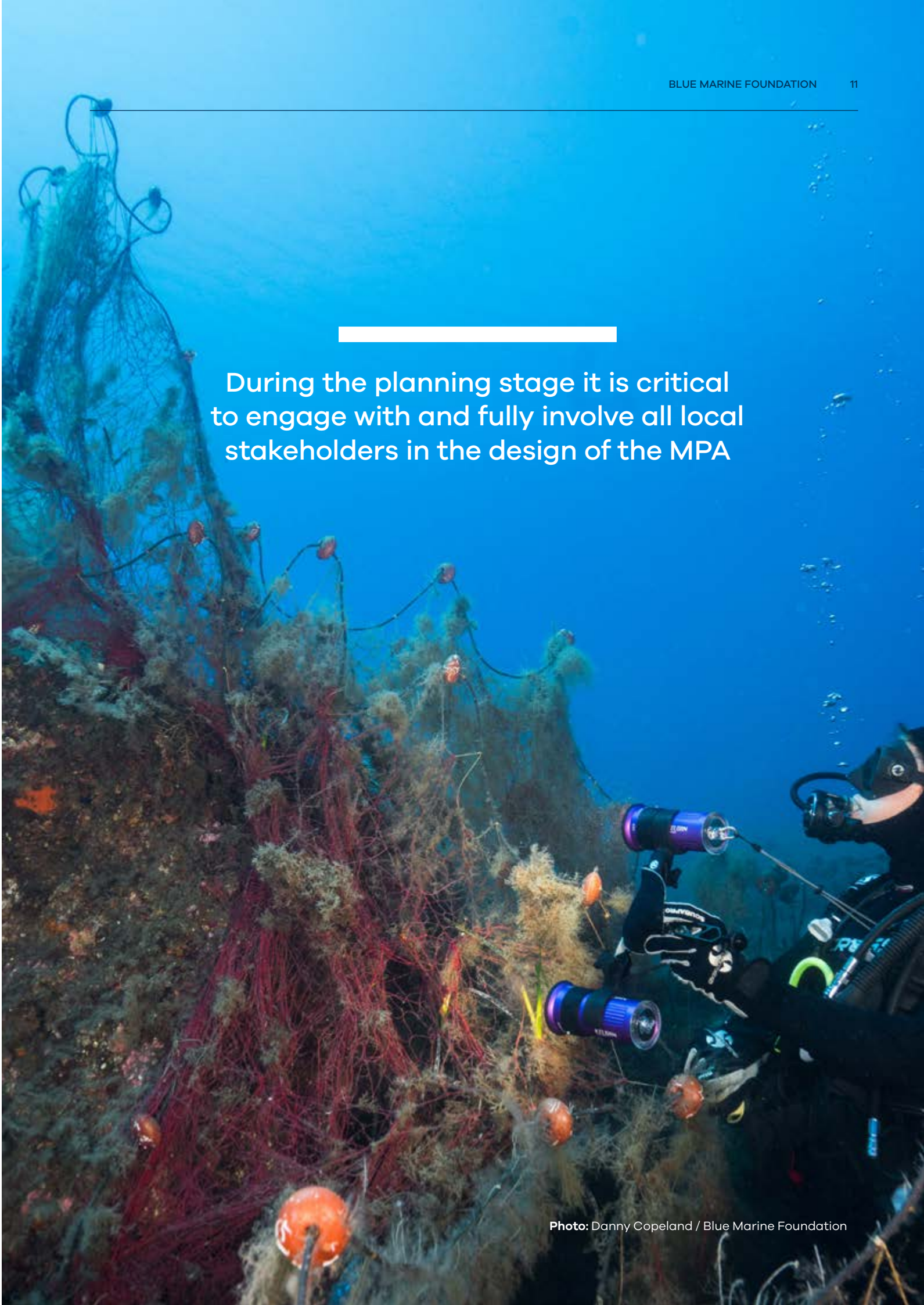
Figure 1. European MPA case study locations from the Mediterranean (see Table 1).

Table 1. European MPA Case Studies

Case Study / MPA	Country	Year ¹	Size (km ²)	Case #
Gyaros MPA ²⁰	Greece	2019 / 2022	250 (NTZ ²)	1
Posidonia Balears ²¹ (11 MPAs)	Balearic Islands, Spain	Various (1982 – 2019); 2020 ³	618 (43.5 NTZ)	2
Bonifacio Strait Nature Reserve ²²	Corsica, France and Sardinia, Italy	1999	796 (11 NTZ)	3
‘Western Mediterranean’ (six MPAs ⁴)	France and Spain	Various (1974 – 1995)	Various (1 – 85)	4
Portofino MPA ²³	Italy	1999	3.46 (0.16 NTZ)	5
Kosterhavet National Marine Park ²⁴	Sweden	2009	390	6

Notes: 1: Year = Year of MPA or Protective Measure Establishment;
2: NTZ = No-take Zone (Fully protected from fishing);
3: Decree for the protection and conservation of Posidonia meadows;
4: Western Mediterranean MPAs - Cerbère-Banyuls and Carry-le-Rouet (France);
Medes, Cabrera, Tabarca and Cabo de Palos (Spain).

20 <https://medpan.org/en/resource-center/mpa-success-story-gyaros-adopts-broad-participatory-approach-promote-protection-sea>
21 <https://atlasposidonia.com/en>
22 <https://bonifacio.co.uk/discover/bonifacio-life-size/bouches-de-bonifacio-nature-reserve>
23 <https://medpan.org/en/resource-center/mpa-success-story-reserve-try-balance-nature-protection-and-high-human-pressure>
24 <https://www.vastsverige.com/en/kosterhavet>



During the planning stage it is critical to engage with and fully involve all local stakeholders in the design of the MPA

Photo: Danny Copeland / Blue Marine Foundation

2. KEY CRITERIA FOR MPA SUCCESS IN EUROPE

An overview of the key criteria required for successful MPAs is presented in this section, based on studies and assessments of MPAs generally and for examples in Europe including three specific case studies (Table 1; Case studies 1 – 3). A summary of existing needs and gaps and lessons learned regarding MPA management effectiveness is also provided.

Photo: Anton Dohrn Zoological Station / Blue Marine Foundation



Qualitative assessments of MPAs enable us to tell whether a particular MPA is being implemented and/or managed effectively. The recent “MPA Guide” is one of several tools that is used to conduct qualitative assessments of MPAs. It is a science-based framework used to better understand MPAs²⁵ including whether they are working effectively. The MPA Guide framework is made up of four elements, one of which is “Enabling Conditions”. These are the conditions by which an MPA is effectively planned, designed, implemented, governed and managed to achieve both ecological outcomes and the direct and indirect human well-being outcomes²⁶ that result from a healthy environment. The enabling conditions listed by the MPA Guide (Annex 2) represent the suite of conditions that need to be met for an MPA to be fully successful from planning to establishment and active management. They cover key ecological, social, financial and organisational criteria including **stakeholder engagement, involvement and support, capacity for management including monitoring and enforcement, adaptive management and evidence-based decision making**. Although developed for the global level, the MPA Guide enabling conditions are highly applicable to the European context as key criteria for MPA success.

Examples of key criteria that have been successful for MPAs in Europe are provided in the first three case studies developed for this report (Case # 1 – 3): Gyaros MPA (Greece), *Posidonia* protection in the Balearic Islands (Spain) and the Bonifacio Strait Nature Reserve (France and Italy). Further examples of successful European MPAs where key criteria have been applied are provided in a summary table (Annex 1). The key criteria highlighted by the case studies and other examples for European MPAs are listed in Table 2.

As well developing management plans for MPAs it is critically important to begin **engagement with all the relevant stakeholders** at the MPA design stage so that local communities and sectors are involved through participatory processes in the planning and development of the MPA is question. Having the **support of most local stakeholders** for the designation and ongoing management of an MPA is essential. Examples from the case studies are Gyaros MPA in Greece and the Bonifacio Strait Marine Reserve (France / Spain) for artisanal fishers. In both cases fishers are involved in the ongoing management of the MPAs through representation on co-management committees or by providing advice for fisheries regulations or data to help monitor MPA status.

Once an MPA is established the ongoing active management of the site is essential, particularly in terms of enforcement of regulations and the monitoring of MPA status and management effectiveness. Adequate support for management is required from the management authority and other partner organisations involved in the MPA such as local government, stakeholders or non-government organisations (NGOs). For example, Gyaros MPA is strongly supported by both a national government agency and an international conservation NGO while Bonifacio Reserve is co-managed by two national governments through the European Grouping for Territorial Cooperation. Another critical aspect of ongoing MPA management is the ability to adapt management measures based on recommendations from the regular monitoring of MPA status. Adaptive management was evident at Gyaros MPA where partial protection measures were not sufficient to prevent overfishing in the MPA, leading to a regulatory change that prevented fishing within the entire MPA area.

²⁵ Grorud-Colvert, K., J. Sullivan-Stack, C. Roberts, et al. 2021. The MPA Guide: a framework to achieve global goals for the ocean. Science 373. <https://doi.org/10.1126/science.abf0861>

²⁶ Ibid

Table 2. Key Criteria for MPA Success in Europe

Key Criteria	European MPA Example
Well planned & managed MPAs with clear, realistic objectives: i.e. Management plan in place and actively implemented	All case studies
Long-term management structures (e.g. management and advisory committees)	Western Mediterranean, Gyaros, Portofino
Stakeholder engagement, involvement and support	Gyaros, Posidonia Baleares, Portofino
Adequate support / capacity for management, monitoring and enforcement	Bonifacio Strait, Posidonia Balaeres, Gyaros
Management measures for MPAs e.g. local regulations by management authorities to prevent habitat-damaging practices	Posidonia Baleares, Kosterhavet
Adequate penalties for infringements / successful prosecution within legal systems;	All case studies
Effective management of broader seascape and external pressures	Solent Seascape, Bonifacio Strait, Kosterhavet (with adjacent MPA in Norway)
Consideration of landscape / seascape linkages and downstream effects on the marine / coastal environment;	Solent, Sussex, Whitsand Bay (all England), Balaeric Posidonia
Adaptive management	Gyaros MPA

For inshore European MPAs one of the main stakeholders are small-scale and artisanal fishers who operate fisheries within and / or adjacent to the protected area. It is therefore extremely important that most of these fishers are involved in, and supportive of any spatial measures for the protection and conservation of biological features within an MPA.

A study of small-scale fisheries (SSF) and MPAs in the Mediterranean Sea was conducted to identify the key attributes of fisheries management in

the protected areas that led to a successful SSF-MPA partnership and supported effective management of the MPAs²⁷. The study included 25 MPAs in the central-north region of the Mediterranean covering over 3000 km² which support more than 1000 SSF vessels. The study clearly identified five attributes that are pivotal for SSF-MPA success: Effective MPA enforcement; adoption of a management plan; fisher engagement in MPA management; fisher representation on the MPA board; and the promotion of sustainable fishing.

Although financial and social commitments are required to implement these five key criteria, they will produce substantial ecological, economic and social benefits to society²⁸.

Similarly, a study of MPA effectiveness in the Spain, Portugal and France (134 MPAs) in the Atlantic and Mediterranean identified key criteria for MPA success as stakeholder involvement in MPA processes including participation in MPA implementation; strong enforcement; monitoring plans; realistic management objectives; and high stakeholder support²⁹.

A workshop organised by the network of Marine Protected Area Managers in the Mediterranean (MedPAN) focussed solely on MPA management effectiveness in 2022³⁰. The workshop enabled MPA managers and stakeholders to share knowledge, experiences and best practice to improve and evaluate the effectiveness of MPAs. Some of the key lessons learned and recommendations from the workshop were:

- MPA performance depends on having a management plan with clearly defined goals and objectives and the capacity to implement it;
- Strong co-management between Government / NGOs and stakeholders can

support effective MPA management (e.g. Torre Guaceto MPA, Italy);

- Develop and use clear systems for the implementation and monitoring of MPA management plans e.g. dashboards;
- Use the results of periodic MPA management assessments to improve management activities and monitoring programmes;
- Encourage the involvement of / collaboration with other sectors / stakeholders to ensure effective implementation of management plans;
- Develop approaches that involve stakeholders and local actors / communities as citizen scientists to increase public awareness and acceptability of management decisions;
- Encourage the direct involvement of key stakeholders in monitoring and surveillance (e.g. fishers involved the monitoring of Katic Nature Park, Montenegro);
- Fully respect and protect the cultural heritage, ideologies and livelihoods of local communities;
- Use of Protected Area Management Effectiveness (PAME) tools – select a tool that fits the situation in terms of capacity and overall aims.

The above points reinforce the suggestions that stakeholder involvement and collaboration between managers and stakeholders such as co-management arrangements are critical for MPA success in Europe. This ensures that there is strong stakeholder agreement and support for management practices enabling MPAs to be effectively managed so that they can provide benefits to society.

27 Di Franco, A., Thiriet, P., Di Carlo, G. et al. 2016. Five key attributes can increase marine protected areas performance for small-scale fisheries management. Scientific Reports 6, doi: <http://dx.doi.org/10.1038/srep38135>
28 Ibid
29 Batista, M. I. and Cabral, H.N. 2016. An overview of Marine Protected Areas in SW Europe: Factors contributing to their management effectiveness. Ocean & Coastal Management 132: 15-23. <http://dx.doi.org/10.1016/j.ocecoaman.2016.07.005>
30 MEDPAN. 2022. Proceedings of the Regional experience-sharing workshop of the MedPAN network on Marine Protected Areas management effectiveness. MedPAN Collection. 67 pp.

3. BENEFITS PROVIDED BY WELL-FUNCTIONING (SUCCESSFUL) MPAS

MPAs are widely accepted as the principal tool for protecting biodiversity and conserving threatened species but there has been scepticism in the use of MPAs for achieving economic benefits, specifically regarding fisheries³¹. This scepticism can devalue the use of MPAs as fisheries management tools and negatively influence key stakeholders in the marine and coastal environment. Opposition to MPAs from fisheries slows progress towards conservation targets and undermines the economic and ecological sustainability of the oceans³². It is therefore important to show evidence that well-managed MPAs can result in socioeconomic benefits for stakeholders and wider society, and be a keystone feature of a healthy marine environment that supports a robust blue economy.

A recent global review of evidence clearly shows that MPAs clearly provide economic benefits not only via fisheries but also through tourism³³. The assessment provides 48 examples of fishery-related economic benefits and 31 examples for tourism-related ones. Fishery benefits included increased fish stocks, catch volumes, catch per unit effort, fecundity and larval export from MPAs as well as larger sized fish and shellfish (e.g. lobsters and some fish). The study concluded that well designed and enforced MPAs provide sustainable benefits for fishing communities with even sub-optimally designed MPAs being able to provide economic advantages. Overall, MPAs were regarded as one of the best strategies for maintaining the sustainable exploitation of (living) marine resources.

Photo: Alexandros Avramidis / Blue Marine Foundation



These robust examples and those in the 2024 review along with further analysis of the literature means that there are over 40 clear examples of MPAs providing clear benefit

A summary of evidence-based fishery-related benefits from MPAs in Europe (Table 3) shows that well designed and managed MPAs provide multiple benefits for fisheries and the people that depend on them. Studies of MPAs in the Mediterranean and North Atlantic clearly demonstrate that MPAs can deliver improved fish stocks, increased catches, greater revenue for fishers and other income-generating benefits through sustainability certification and higher demand for locally caught fish.

The 2024 review included many examples (12 studies) from European waters where MPAs provide fisheries-related economic benefits and a number of tourism-related examples (4 studies). A European-focused review of economic benefits of MPAs in 2018 identified 44 fisheries-related studies (11 of which were regarded as robust examples) and 18 tourism-related studies (10 robust)³⁴. These robust examples and those in the 2024 review along with further analysis of the literature means that there are over 40 robust examples of MPAs providing clear benefit in Europe (24 are fisheries-related and 18 tourism-related) (Annex 1). These include three case studies which demonstrate strong benefits from MPAs: Portofino MPA (Italy), Kosterhavet National Marine Park (Sweden) and six MPAs in the Western Mediterranean (France and Spain) (Table 1 and Case studies 4 – 6)). Benefits also extend to Other Environmental Conservation Measures (OECMs) such as the Jabuka/Pomo Pit fisheries restricted area (FRA) between Croatia and Italy in the Adriatic Sea that is rebuilding fisheries resources and biodiversity^{35 36}.

31 Costello, M.J. 2024. Evidence of economic benefits from marine protected areas. *Sci. Mar.* 88(1): e080. <https://doi.org/10.3989/scimar.05417.080>

32 Ibid

33 Ibid

34 European Commission. Study on the Economic Benefits of Marine Protected Areas: Literature Review Analysis, European Commission, Executive Agency for Small and Medium-sized Enterprises, Publications Office. 2018

35 THE GOOD STORY | Videos & Movies on Vimeo

36 Mackelworth PC, Teff Seker Y, Vega Fernández T, et al. 2019 Geopolitics and Marine Conservation: Synergies and Conflicts. *Front. Mar. Sci.* 6:759. doi: 10.3389/fmars.2019.00759

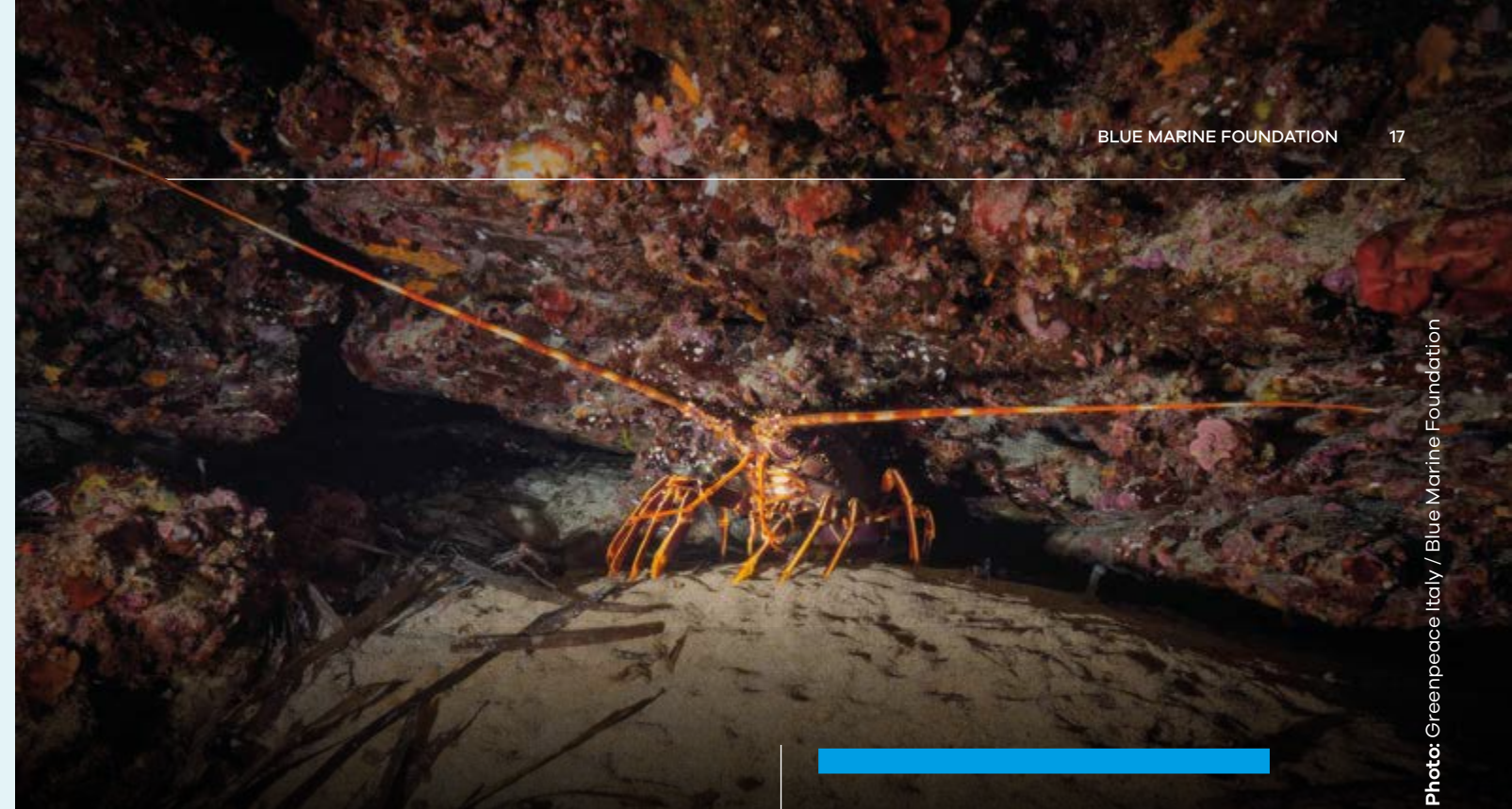


Table 3. Evidence of fisheries related benefits generated by well-functioning MPAs in Europe

Fishery-related Benefit	MPAs	References ³⁷
Increased catch per unit area (CPUA) in fished areas surrounding no-take zones caused by spillover of individuals	‘Western Mediterranean’ (fish and shellfish)	Goñi et al., 2008
	Columbretes MPA (lobster)	Goñi, et al., 2006
	Skagerrak Coast	Moland et al., 2013; Thorbjørnsen et al., 2018
Increased catch per unit effort (CPUE) for fishers within an MPA using static gear or fishing next to a no-take zone	Torre Guaceto MPA	Guidetti & Claudet, 2010; Guidetti et al., 2010
	Seven MPAs in France and Spain	Vandeperre et al, 2011
	Columbretes MPA (multiple fisheries)	Goñi et al., 2006; Stobart et al., 2009
Increased catch (weight) surrounding no-take zone	Columbretes MPA (lobster fishery)	Goñi et al., 2010
	Flamanville MPA (lobster fishery)	Amelot et al., 2024
	Tabarca; Cerbère-Banyuls and Carry-le-Rouet MPAs	Forcada et al, 2009
Increase in commercial fish stocks	Bonifacio Strait Nature Reserve (Case Study)	Marengo et al., 2015
Increased revenue for fishers	Western Mediterranean MPAs (Case Study)	Goñi et al, 2008
	Lyme Bay (static gear fishers)	Mangi et al, 2012
	17 Mediterranean MPAs (small-scale fishers)	Di Franco et al, 2016
	Parque Natural Sudoeste Alentejano e Costa Vicentia	Di Franco et al, 2016
Income-generating benefit - Brand or quality certification for products linked to the MPA	Perceived income-generating benefits by 23% of MPA managers from 35 MPAs in the North-east Atlantic.	Álvarez-Fernández et al, 2017
Increased demand for locally caught seafood	Kosterhavet National Marine Park (Case Study)	Peri et al 2018

There is also growing evidence that marine and coastal tourism associated with MPAs in Europe is generating substantial revenue for local economies through recreational activities (Table 4) in or close to MPAs (e.g. marine reserves and national marine parks). Activities such as SCUBA diving, recreational fishing and boat charters in MPAs in multiple European countries have substantially contributed to local economies through expenditure and job creation in tourism. It’s also apparent that the more visible an MPA is to the public, increased inward investment is fast-tracked into coastal community work & local science (e.g. Arran NTZ³⁸ in Scotland, Torre Guaceto and Italian urban MPAs³⁹). Revenue generated by tourism can also be used to support the costs of MPA management through taxes by local authorities. A clear example of this is the Portofino MPA in Italy (Case Study – Case study 4) where the dive tourism industry contributes almost €100,000 annually via taxes⁴⁰. As MPAs’ become more established and attractive to visitors through ecological regeneration the ‘MPA brand’ further generates interest and attracts more visitors. This has been evident in the Kosterhavet National Marine Park in Sweden, where national marine park status has helped to increase tourism numbers to the park (Case Study 6). Recovery of emblematic and ecologically

important (apical) marine fauna such as groupers through their protection in MPAs can be an attraction for visitors, particularly dive tourism. For example, grouper in the Mediterranean have benefitted through protection in MPAs with an almost constant increase in their numbers and size in MPAs such as Cerbère-Banyuls-sur-Mer MPA in France⁴¹, Punta Campanella MPA in Italy⁴², and in Spain⁴³. As well as economic benefits for fisheries and tourism MPAs can generate other types of benefits for society by improving biodiversity. MPAs provide a management strategy that benefits biodiversity, which in turn can result in increased carbon capture and storage⁴⁴. MPAs can also increase the resilience of biodiversity to climate change through harbouring more abundant and genetically diverse populations⁴⁵. A study of MPAs and people’s well-being found that no-take, well enforced and older MPAs had positive well-being outcomes⁴⁶. An analysis from 21 studies of MPAs and associated well-being of fishing communities found that MPA establishment tends to improve food security and empower local fishing communities, but the effects can vary depending on the social and governance context⁴⁷.

37 Reference details are provided in Annex 1
38 **Frontiers | Marine Conservation Begins at Home: How a Local Community and Protection of a Small Bay Sent Waves of Change Around the UK and Beyond** – Stewart et al. (2020). Marine conservation begins at home: How a local community and protection of a small bay sent waves of change around the UK and beyond. *Front. Mar. Sci.* 7: <https://doi.org/10.3389/fmars.2020.00076>
39 **Testing the Effectiveness of Urban Marine Protected Areas – oceanbites** – Testing the effectiveness of urban MPAs.
40 Lucrezi S., Milanese M., Markantonatou V., et al. 2017. Scuba diving tourism systems and sustainability: Perceptions by the scuba diving industry in two Marine Protected Areas. *Tourism Manag.* 59: 385–403. <https://doi.org/10.1016/j.tourman.2016.09.004>
41 Lenfant, P., Louisy, P., and Licari, M. L. (2003). Recensement des mérous bruns (*Epinephelus marginatus*) de la réserve naturelle de Cerbère-Banyuls (France,Méditerranée Nord Occidentale). *Cybium* 27, 27–36.
42 **Punta Campanella, protected wonder – PYS | Professional Yachting Services**
43 Hackradt, C. W., García-Charton, J. A., Harmelin-Vivien, M., et al. (2014). Response of rocky reef top predators (Serranidae: Epinephelinae) in and around marine protected areas in the Western Mediterranean Sea. *PLoS ONE* 9:e9820. doi: 10.1371/journal.pone.0098206
44 Hutto S.H., Brown M., Francis E. 2021. Blue carbon in Marine Protected Areas: Part 1; A guide to understanding and increasing protection of blue carbon. *National Marine Sanctuaries Conservation Science Series ONMS-21-07*. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Office of National Marine Sanctuaries. Available at: <http://sanctuaries.noaa.gov>
45 Costello M.J. 2021. Biodiversity conservation through protected areas supports healthy ecosystems and resilience to climate change and other disturbances. In: Goldstein M.I., DellaSala, D.A. (Eds), *Imperiled: The Encyclopedia of Conservation*. Reference Module in Earth Systems and Environmental Sciences, Elsevier. <https://doi.org/10.1016/B978-0-12-821139-7.00164-1>
46 Ban N.C., Gurney G.G., Marshall N.A., et al. 2019. Well-being outcomes of marine protected areas. *Nature Sustain.* 2 (6): 524–532. <https://doi.org/10.1038/s41893-019-0306-2>
47 Mascia, M. B., Claus, C. & Naidoo, R. 2010. Impacts of marine protected areas on fishing communities. *Conserv. Biol.* 24, 1424–1429

Table 4. Evidence of Tourism-related benefits generated by well-functioning MPAs in Europe

Tourism-related benefit	MPA	Reference ⁴⁸
Generation of revenue by tourism (modelling)	Medes MPA	Merino et al 2006; Sala et al 2016
Increase in Expenditure by Recreational users: anglers, dive businesses, charter vessels	Multiple MPAs in Southern Europe including Bonifacio Strait (Case Study)	Alban et al, 2008; Roncin et al, 2008
	Cap de Creus MPA	Lloret et al, 2008; Font and Lloret, 2011
	Lyme Bay MPA	Rees et al, 2010; Rees et al, 2015; Renn et al,2024
	Lundy Island Marine Reserve	Chae et al, 2012
Generation of taxes to cover MPA management costs	Portofino MPA	Lucrezi et al 2017
Increase in local tourism / positive effect on tourism sector livelihoods	Alonissos MPA	Oikonomou and Dikou, 2008; Trivourea et al, 2011
	Kosterhavet National Marine Park (Case Study)	Peri et al. 2018
	Zakynthos MPA	Togridou et al, 2006
Job creation in marine tourism and MPA management	Multiple MPAs in Southern Europe	Alban et al, 2008; Roncin et al, 2008.
Generation of economic advantage by ‘MPA brand’	Alonissos MPA	Oikonomou and Dikou, 2008
	Kosterhavet National Marine Park (Case Study)	Peri et al. 2018

The level of benefits provided by a well-managed MPA is related to the level of protection in place. The largest benefits for biodiversity and fisheries are from no-take MPAs⁴⁹. However, MPAs with varying levels of protection, such as those with partial protection areas and fishery closures can still provide both fishery- and particularly tourism-related benefits (Tables 3 and 4). For example, a study of seven Mediterranean MPAs in France and Spain found that partial protection enabled an increase in CPUE of 60%-120% over 30 years⁵⁰.

A recent assessment of MPA socioeconomic benefits in the Mediterranean using a value transfer model included two European Member States, Italy and Spain⁵¹. The assessment

estimated the value (Millions of Euros per year: M€/yr) of socioeconomic benefits for four MPA scenarios: full implementation, actual level of protection, no protection and environmental degradation (Table 5). The value transfer model indicates that well-managed MPAs provide significant benefit to local economies with higher protection levels generating greater socioeconomic benefits. A lack of protection likely results in economic losses and harm to biodiversity, society and local communities⁵². Effectively managed MPAs (i.e. fully implemented) resulted in a 25% – 26% increase in socioeconomic benefits for Spain and Italy while an absence of protection (poor or no management) reduced these benefits by 46% – 50%. Strengthening protection for existing MPAs with sub-optimal management could yield substantial economic gains.

Photo: Anton Dohrn Zoological Station / Blue Marine Foundation

49 Sala E., Giakoumi S. 2017. No-take marine reserves are the most effective protected areas in the ocean. ICES J. Mar. Sci. 75: 1166-1168. <https://doi.org/10.1093/icesjms/fsx059>

50 Vandeperre, F, Higgins, R.M, Sanchez-Meca, J, et al. 2011. Effects of no-take area size and age of marine protected areas on fisheries yields: a meta-analytical approach. Fish and Fisheries No 12 (4), 412-426.

51 De Paoli, G. Zaiter, Y., Wang, J. et al. 2026. MPAs in the Mediterranean: Why Does Protection Matter? Assessing the Role of MPAs in Protecting Marine Ecosystems, Local Economies, and Social Cohesion. ACTeon Technical Report for the Med Sea Alliance (MSA). 66 pp. <https://www.medseaalliance.org/reports/mpas-in-the-mediterranean-sea-as-a-driver-for-local-development>

52 Ibid

The study also found that the estimate of benefits for society and local communities (e.g. ecosystem services such as coastal protection) were substantially higher than the benefits delivered to other sectors such as fisheries or tourism i.e. that the MPAs’ contribution to collective well-being is highly significant⁵³.

Table 5. Total Annual Benefits of MPAs in Italy and Spain (adapted from De Paoli et al. 2026)

Protection Scenarios	Italy		Spain	
	Benefits (M€/yr)	Deviation from actual protection	Benefits (M€/yr)	Deviation from actual protection
Full implementation	259	+26%	164	+25%
Actual Protection	191		131	
No Protection	104	-46%	66	-50%
Environmental Degradation	52	-73%	33	-75%

A lack of protection likely results in economic losses and harm to biodiversity, society and local communities

53 Ibid

4. COST-BENEFIT ANALYSIS FOR MPAS

An assessment of costs and benefits (cost-benefit analysis or CBA) studies for MPAs in Europe is provided in this section. It includes examples of approaches to assess MPAs in terms of costs and benefits and the use of environmental accounting systems. An example of an approach to reduce costs and effort for MPA assessment in relation to commercial fishing is also provided.

There are relatively few cost-benefit analyses (CBAs) of MPA available from either within or outside of Europe, which makes it difficult to draw overall conclusions about the net benefits of individual MPAs or MPA networks in Europe⁵⁴. However, the studies that are available for Europe suggest that the overall calculated benefits of MPAs significantly exceed total costs⁵⁵ with every

euro invested in MPAs estimated to generate a return of at least three euros⁵⁶. MPA CBAs are generally more complete for the monetary valuation of costs rather than benefits. Studies that have shown net benefits have focussed on benefits from tourism and fisheries, showing that MPAs or MPA networks can enhance economic activity in these sectors⁵⁷. The multiple

examples of a positive economic return by MPAs, mentioned in section 3 (MPA Benefits) mainly linked to marine and coastal tourism strongly supports these suggestions (see also Annex 1 for further examples). Global data also supports this with protected areas having rates of return on public spending between \$6.2 and \$28.2 for every public dollar invested, generating significant income multipliers and creating job opportunities⁵⁸. A recent global review of evidence for the economic benefits of MPAs found that there was no evidence of net costs of MPAs to fisheries⁵⁹.

A 2018 review of economic benefits of European MPAs identified seven studies of MPAs in Europe that compared costs and benefits. The most robust (quantitative) study in the review

For each euro spent the annual benefits from MPAs were €28.5 in Spain and €16.2 in Italy

assessed five MPAs in the Mediterranean⁶⁰, three of which are in European waters⁶¹. This study aimed to quantify the socio-economic effects of the selected MPAs by observing (through modelling) changes in ecosystem services over a 20-year period, with three sites⁶² being suitable for the full CBA assessment. Not all of the benefits from ecosystem services were able to be accounted for as some were difficult to quantify. Overall, for the MPAs where robust CBAs were completed it was clearly shown that all three MPAs had positive effects on local economic development⁶³ i.e. the MPAs generated more benefits than costs up to 2030. In addition, the net present value was higher for scenarios where there was increased protection (spatial area of MPA) compared to a business-as-usual scenario (maintain MPA size).

Photo: Anton Dohrn Zoological Station \ Blue Marine Foundation

54 Visintin, F.; Tomasinsig, E.; Spoto, M. et al. 2022. Assessing the Benefit Produced by Marine Protected Areas: The Case of Porto Cesareo Marine Protected Area (Italy). Sustainability, 14, 10698. <https://doi.org/10.3390/su141710698>

55 European Commission. Study on the Economic Benefits of Marine Protected Areas: Literature Review Analysis, European Commission, Executive Agency for Small and Medium-sized Enterprises, Publications Office. 2018. <https://data.europa.eu/doi/10.2826/40733>

56 Brander, L.M.; Baulcomb, C.; van der Lelij, C.J.A.; Eppink, F.V.; McVittie, A.; Nijsten, L.; van Beukering, P. The Benefits to People of Expanding Marine Protected Areas. Final Report R-15/05, May 2015; IVM—Institute for Environmental Studies: Amsterdam, The Netherlands, 2015.

57 European Commission. Study on the Economic Benefits of Marine Protected Areas: Literature Review Analysis, European Commission, Executive Agency for Small and Medium-sized Enterprises, Publications Office. 2018

58 World Bank. Banking on Protected Areas-Promoting Sustainable Protected Area Tourism to Benefit Local Economies. 2021. <https://openknowledge.worldbank.org/bitstream/handle/10986/35737/Banking-on-Protected-Areas-Promoting-Sustainable-Protected-Area-Tourism-to-Benefit-Local-Economies.pdf?sequence=5&isAllowed=y>

59 Costello, M.J. 2024. Evidence of economic benefits from marine protected areas. Sci. Mar. 88(1): e080. <https://doi.org/10.3989/scimar.05417.080>

60 The five MPAs were: Cap de Creus Natural Park (Spain), Sensitive Area of the Kuriat Islands (Tunisia), Specially Protected Area of Kas Kekova (Turkey), National Marine Park of Zakynthos (Greece), and the Mount Chenoua and Kouali Coves protection project (Algeria)

61 Mangos A & Claudot M-A (2013). Economic study of the impacts of marine and coastal protected areas in the Mediterranean. Plan Bleu Papers 13, Plan Bleu, Valbonne

62 Cap de Creus, Kuriat Islands and Kas Kekova

63 Mangos A & Claudot M-A (2013). Economic study of the impacts of marine and coastal protected areas in the Mediterranean. Plan Bleu Papers 13, Plan Bleu, Valbonne

A more recent review (2022)⁶⁴ identified fourteen robust CBA studies in Europe indicating that, although the number of studies is growing, there are still challenges in completing comprehensive cost-benefit analyses of MPAs. A key challenge is the ability to quantitatively estimate the benefits from all the ecosystem services provided by an MPA. Studies included both quantitative and qualitative approaches, with those completed since the first review located in the UK, the Mediterranean Sea, the Baltic Sea and the Bay of Biscay (Spain)⁶⁵. The review found that for most of the studies assessed the overall welfare benefits of MPAs exceeded total costs. For example, a study of Miramare MPA in Italy found that for every one euro spent on protection, there was a return of €18 in terms of environmental, social and economic benefits⁶⁶. However, completing robust CBAs for MPAs is still constrained by the availability of quantitative data on costs and benefits linked to quantifying how protection affects marine ecosystems and the provision of ecosystem services⁶⁷.

An assessment of MPA costs and benefits in the Mediterranean using a value transfer model showed that administrative (management) costs for MPAs in Spain and Italy were minimal compared to the benefits generated. For each euro spent the annual benefits from MPAs

were €28.5 in Spain and €16.2 in Italy⁶⁸, which strongly supports the use of public expenditure for MPA management given the benefits to society.

In terms of standardised approaches to conduct CBAs for MPAs in Europe, the Italian government has supported the development and implementation of an integrated environmental accounting system for MPAs in the country, which has the potential to be used by other EU States. The approach involves using an integrated environmental accounting model called “eValue” to assess the MPA’s ecological and economical value linked to the ecosystem services generated within the MPA and the potential net benefit returned to the economy⁶⁹. The eValue is regarded as a strong communication tool to show that the wealth produced within an MPA is greater than the public investment and that the establishment of an MPA is not a limiting factor for the economic development of a location, but an opportunity to create economic, social and environmental wealth⁷⁰. An assessment of the Porto Cesareo MPA in Italy using the eValue model revealed an annual benefit-cost ratio of 3.4 and a net benefit-public funding ratio of 3.7⁷¹ that demonstrated the overall economic benefit of this MPA for society.

64 Mangi, SC, et al. 2022, Research for PECH Committee – Costs and benefits of spatial protection measures as tools for fisheries management, European Parliament, Policy Department for Structural and Cohesion Policies, Brussels.

65 See Mangi et al 2022 for CBA study references

66 Visintin F, Tomasinsig E, Spoto M, et al. 2019. Applying Environmental Accounting for Assessing the Value4money of Miramare Marine Protected Area. Italian Association of Environmental and Resource Economists, Seventh Annual Conference, Udine, Italy. (In: Mangi et al. 2022)

67 Mangi, SC, et al. 2022, Research for PECH Committee – Costs and benefits of spatial protection measures as tools for fisheries management, European Parliament, Policy Department for Structural and Cohesion Policies, Brussels.

68 De Paoli, G, Zaiter, Y., Wang, J. et al. 2026. MPAs in the Mediterranean: Why Does Protection Matter? Assessing the Role of MPAs in Protecting Marine Ecosystems, Local Economies, and Social Cohesion. ACTeon Technical Report for the Med Sea Alliance (MSA). 66 pp. <https://www.medseaalliance.org/reports/mpas-in-the-mediterranean-sea-as-a-driver-for-local-development>

69 Franzese, P.P.; Buonocore, E.; Paoli, C. et al. 2015. Environmental Accounting in Marine Protected Areas: The EAMPA Project. J. Environ. Account. Manag. 3, 323–331.

70 Visintin, F.; Tomasinsig, E.; Spoto, M. et al. 2022. Assessing the Benefit Produced by Marine Protected Areas: The Case of Porto Cesareo Marine Protected Area (Italy). Sustainability, 14, 10698. <https://doi.org/10.3390/su141710698>

71 Ibid

Reducing Operational Costs to support MPA Effectiveness

As mentioned previously (Sections 1 and 2) a key element to ensure that an MPA is working effectively is to undertake appropriate assessment and monitoring to ensure that activities that can cause environmental damage and loss of ecosystem services are detected and managed within some or all of the spatial extent of the protected area. Conducting appropriate assessments to determine whether fishing activities are detrimental to a Natura 2000 MPA functioning can be a costly and time-consuming process if undertaken as a detailed assessment for individual MPAs.

With this in mind, in 2013, Defra (UK Government) developed the Revised Approach to the Management of Commercial Fisheries in European Marine Sites in England⁷² to improve the efficiency of management of commercial fishing activities for all N2k MPAs. This process outlined the overarching policy approach and key implementation steps to ensure that all existing and potential commercial fishing operations were managed to comply with Article 6 of the Habitats Directive. Management measures undertaken are based on the best available evidence so that they are *consistent with the conservation objectives for the sites concerned*⁷³.

The revised approach was applied on a risk-prioritised, phased basis using a generic matrix (“The Matrix⁷⁴”) as a standardised decision-making tool to assess the level of risk for each type of commercial fishing activity occurring within an MPA (EMS). The matrix defines the level of risk within four levels (Red, Amber, Green,

Blue) according to the potential or actual impact of the gear type on the designated features within the total MPA network. An example of the Matrix and the definitions of the risk levels are provided in Annex 3. Risk levels for every type of fishing activity were assessed by the Inshore Conservation Fisheries Authorities (fisheries regulators) in England in collaboration with the coastal and nature conservation departments of government (Natural England and the Marine Management Authority)⁷⁵

The use of a generic risk-based approach has enabled the regulators to spend less time, effort and expense on assessing the risk to MPAs at the individual site level. It has fast-tracked the implementation of management measures to prevent damage by commercial fishing in MPAs located in England’s inshore waters within five years for all sites and site features. A similar matrix was also developed in 2014 by the European Commission’s Marine Expert Group⁷⁶ which feeds into the Common Methodology for assessing the impact of fisheries on marine Natura 2000 sites⁷⁷. The approach contains two matrices for habitats and selected species with three risk levels according to vulnerability (probable, possible, unlikely) and a fourth category of ‘limited information’ The matrices and methodology were developed as generic tools for E.U. Member States to use to generate their own national assessments processes and risk assessment matrix(ces). However, there has been limited strategic uptake of the approach across Europe for marine Natura 2000 sites to date.

72 <https://www.gov.uk/government/publications/revised-approach-to-the-management-of-commercial-fisheries-in-european-marine-sites-overarching-policy-and-delivery>

73 Fisheries Measures for Marine Natura 2000 Sites: http://ec.europa.eu/environment/nature/natura2000/marine/docs/fish_measures.pdf

74 Fisheries in European marine sites: Matrix - GOV.UK

75 Association of Inshore Fisheries and Conservation Authorities (AIFCA). 2019. Management of Inshore Marine Protected Areas by the IFCAs 2011 to 2018. AIFCA Leaflet v15. <https://association-ifca.org.uk/wp-content/uploads/2023/03/AIFCA-Leaflet-2019-v15-hires.pdf>

76 <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52025XC05392> (See Annex 5.3.)

77 <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52025XC05392> (See Annex 5.2)

Coherence and efficiencies of current EU Legislation to support MPA designation and implementation

The coherence of current EU legislation to support the designation and implementation of MPAs in Europe is assessed with a focus on the Common Fisheries Policy (CFP) and the EU’s marine biodiversity commitments. The EU has set a goal to legally and effectively protect at least 30% of its marine waters by 2030⁷⁸, with 10% under strict protection⁷⁹ i.e. fully protected no-take areas. As well as designating new marine areas for protection within Europe there is a need to ensure that existing MPAs are effectively protected from activities that negatively impact biodiversity and ecosystem services. Fisheries are one of the major sources of pressure on marine ecosystems⁸⁰, particularly using mobile gear that is in contact with the seabed⁸¹. European States can unilaterally impose fishing restrictions within their own territorial waters (up to 12 nautical miles from the coast)

as specified in the CFP⁸². These restrictions can be applied both inside and outside of MPAs. Outside of territorial waters, within a State’s EEZ, the process is more complex. Under Article 11 of the CFP, the imposition of fisheries restrictions requires EU legislation that is supported by all affected Member States as fisheries management is an EU exclusive competency⁸³. This has proved to be a major bottleneck to achieving effective protection in existing MPAs in EU offshore waters, where only 1% of the MPA area is under strong protection⁸⁴. There is high fishing pressure in many of the offshore MPAs, including from mobile fishing gear such as bottom trawling⁸⁵ which has substantial costs for society⁸⁶. Article 11 has failed to deliver effective fisheries regulations in most offshore MPAs⁸⁷, with this framework reflecting a broader and long-recognised tension between environmental obligations and

78 COM/2020/380 final. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, EU Biodiversity Strategy for 2030 Bringing Nature Back Into Our Lives. <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52020DC0380> (2020).

79 SWD(2022) 23 final. Commission Staff Working Document. Criteria and guidance for protected areas designations. https://environment.ec.europa.eu/system/files/2022-01/SWD_guidance_protected_areas.pdf (2022).

80 O’Hara CC , Frazier M, Valle M et al. 2024. Cumulative human impacts on global marine fauna highlight risk to biological and functional diversity. PLoS One; 19 :e0309788, <https://doi.org/10.1371/journal.pone.0309788>

81 Perry AL, Blanco J, García S and Fournier N. 2022. Extensive Use of Habitat-Damaging Fishing Gears Inside Habitat-Protecting Marine Protected Areas. Front. Mar. Sci. 9:811926. doi: 10.3389/fmars.2022.811926

82 European Parliament and Council. Regulation (EU) 1380/2013 on the Common Fisheries Policy. OJEU 2013; 354 :22–61.

83 Ibid

84 Aminian-Biquet, J. et al. 2024. Over 80% of the European Union’s marine protected areas only marginally regulate human activities. One Earth 7, 1–16. <https://doi.org/10.1016/j.oneear.2024.07.010>

85 Oceana Europe & Seas At Risk. 2024. A Quantification of Bottom Towed Fishing Activity in Marine Natura 2000 Sites. <https://europe.oceana.org/wp-content/uploads/sites/26/2024/04/FINALBTG-natura-2000.pdf>.

86 Millage, K. D. et al. 2026. The value of bottom trawling in Europe. Ocean Coast. Manag. 108135, in press <https://www.sciencedirect.com/science/article/pii/S096456912600044X?via%3Dihub>

87 Horta e Costa, B. & Gonçalves, J.M.S. 2026. A legal bottleneck blocking EU marine protection. npj Ocean Sustainability 5 :30 <https://doi.org/10.1038/s44183-026-00212-2>

the CFP, especially for offshore waters where implementation remains uncertain⁸⁸.

Exclusive competency for fisheries management in EU EEZs means that a Member State must submit a joint recommendation to the European Commission which can be adopted through a Delegated Act once all affected Member States are in agreement. In practice this has been difficult to achieve, with only nine delegated acts related to Article 11 adopted since the measure was introduced in 2013⁸⁹. These were implemented for Natura 2000 sites, MSFD areas and MPAs in the Baltic and North Sea regions, with none currently for the Mediterranean or Southern Europe leaving many Natura 2000 sites and other MPAs in offshore waters without effective fisheries regulation⁹⁰. The European Court of Auditors highlighted the numerous issues with the mechanism with Member States avoiding initiating Article 11 procedures due to complexity, delays, a lack of guidelines for stakeholder engagement and a high likelihood of diluted measures⁹¹. When a Joint Recommendation is agreed it usually means that the measures initially proposed by a Member State are weakened due to the fishing interests of the other Member States in the area⁹².

There is a strong need to make delivery of Article 11 of the CFP to ensure the effective implementation of conservation measures⁹³ under existing EU environmental regulations. A recent article provides a clear depiction of this particular lack of coherence between fisheries and environmental legislation in the EU, outlining the key obstacles and suggesting possible solutions⁹⁴. The joint recommendation (JR) is complex with a low success rate for Member States. The lack of deadlines for each stage of the process can cause long delays in the development and agreement of the JR. There can also be a lack of robust evidence available to support the initial recommendation, which can be requested by Member States with fishing interests in the area. Lack of evidence often leads to the measures being weakened and can result in a JR that does not meet the initial conservation objectives. In many cases the process can take years and may not result in an agreed or effective JR.

Without re-opening the CFP, the JR process could be simplified and better structured to reduce paperwork and set specific deadlines for each stage, which would allow the EU to approve conservation measures for offshore areas more quickly and efficiently⁹⁵. This could be done through guidelines enacted by the Commission itself, or through a specific article included in the upcoming EU Ocean Act, whose proposal is foreseen for publication in December 2026.

88 Appleby, T. & Harrison, J. Taking the pulse of environmental and fisheries law: the common fisheries policy, the habitats directive, and brexit. J. Environ. Law 31, 443–464 (2019).

89 Horta e Costa, B. & Gonçalves, J.M.S. 2026. A legal bottleneck blocking EU marine protection. npj Ocean Sustainability 5 :30 <https://doi.org/10.1038/s44183-026-00212-2>

90 Ibid

91 European Court of Auditors (ECA).2020. Marine Environment: EU protection is wide but not Deep. Eur. Court Audit. Spec. Rep. 26, 74. https://www.eca.europa.eu/lists/ecadocuments/sr20_26/sr_marine_environment_en.pdf

92 Horta e Costa, B. & Gonçalves, J.M.S. 2026. A legal bottleneck blocking EU marine protection. npj Ocean Sustainability 5 :30 <https://doi.org/10.1038/s44183-026-00212-2>

93 Barnes, R. 2023. Legal study on the relationship between certain aspects of the Common Fisheries Policy Basic Regulation and key provisions of the Nature Restoration Regulation. Opinion prepared for ClientEarth. <https://www.clientearth.org/media/zg3dowv5/legal-study-on-the-relationship-between-the-common-fisheries-policy-and-the-proposed-nature-restoration-regulation.pdf>

94 Horta e Costa, B. & Gonçalves, J.M.S. 2026. A legal bottleneck blocking EU marine protection. npj Ocean Sustainability 5 :30 <https://doi.org/10.1038/s44183-026-00212-2>

95 Ibid

5. CONCLUSION AND SUMMARY OF KEY POINTS

This study has clearly shown that MPAs in Europe can deliver substantial benefits to the economy and society when they are effectively designed and managed. Over 40 examples of socioeconomic benefits of MPAs in Europe, primarily related to fisheries and tourism have been highlighted, mainly from the Mediterranean and North Atlantic regions (Annex 1). The success of European MPAs is dependent on a number of key criteria or enabling conditions being in place from the design stage through to implementation and ongoing management. Case studies and examples from Europe clearly show that the following criteria need to be part of the 'life' of an MPA to ensure its success:

- **MPAs are planned and managed with clear, realistic objectives (ecological and socioeconomic):** i.e. Management plan in place and actively implemented;
- **Long-term management structures are in place (e.g. management and advisory committees);**
- **Stakeholder engagement, involvement and support from the outset (design to implementation);**
- **There is adequate support / capacity for management, monitoring and strong enforcement (e.g. suitable penalties for infringements and prosecution within legal systems);**
- **There are clearly defined specific management measures for MPAs e.g. local regulations by management authorities to prevent habitat-damaging practices;**
- **Stakeholder advice leads to adaptive management to progress more progressive management measures.**

This study has shown substantial economic benefits of functioning and effectively managed MPAs are for the fishing and tourism sectors in Europe. These benefits are generated by the recovery of marine and coastal biodiversity and ecosystem services in MPAs once the key stressors are prevented or sustainably managed. Although there are economic costs to establishing and managing MPAs, these are far outweighed by the benefits accrued over time for society (see CBAs for European MPAs – Section

4). For example, a recent extensive assessment of the economic benefits of MPAs did not find any evidence of net costs to fisheries⁹⁶. There are also opportunities to improve efficiencies in MPA management processes in Europe which can reduce costs with an example provided for the use of risk-based matrices in the assessment of fisheries activities in European Marine Sites.

The majority of examples where there is evidence of benefits from MPAs in Europe are from

This study has shown substantial economic benefits of functioning and effectively managed MPAs are for the fishing and tourism sectors in Europe.



Photo: Jean-Luc Solandt / Blue Marine Foundation

nearshore and territorial waters, where there are the highest levels of protection and for MPAs where management has been effective, and where MPA monitoring is cheaper. MPAs in offshore waters generally have lower levels of protection and management is often poor due to legislative incoherence. A legal bottleneck that is blocking effective marine protection in offshore waters, highlighted in Section 5, will need to be resolved if the EU is going to meet its legal obligations to protect 30% of its waters by 2030.

Improving the protection and management of offshore and inshore MPAs in Europe is essential for a productive and sustainable blue economy. The case studies of European MPAs have highlighted how successful MPAs can be a key tool / mechanism for restoring marine and coastal ecosystems, revitalizing fisheries, boosting tourism and helping to mitigate the effects of climate change. The examples of MPA tourism-related benefits strongly indicate the importance of MPAs to coastal tourism, which made up one-third (33%) of the EU’s blue economy (Gross Value Added) and more than half (53%) of its total employment in 2022⁹⁷. Well managed productive MPAs can also support the emerging EU blue biotechnology and blue bioeconomy sectors through the provision of biomass for conversion into food, feed, energy, pharmaceuticals, packaging, clothes and cosmetics and other products⁹⁸.

Effectively managed MPAs will also enable the EU to meet its existing legal objectives by having a positive impact on biodiversity,

fisheries, the blue economy and climate adaptation⁹⁹. Functioning MPAs will contribute to numerous goals for multiple EU strategies, policies and action plans covering biodiversity, nature restoration, fisheries, the blue economy, maritime spatial planning, and climate adaptation and neutrality¹⁰⁰. Failing to manage MPAs effectively is highly likely to result in socioeconomic costs for society in a business-as-usual scenario where biodiversity and ecosystem services continue to decline and climate change accelerates.

Supporting existing MPAs to improve management where needed while also planning additional MPAs using the key criteria outlined should be regarded as a priority for Europe. A larger network of effectively managed MPAs across European waters will improve the resilience of ecosystems and enable the competitiveness and resilience of the blue economy to support coastal livelihoods, sectors and the well-being of local communities. Failure to act to resolve management issues for MPAs, especially those in offshore waters will likely contribute to negative socioeconomic consequences for European Member States in the long-term. Economic costs will continue to increase as ecosystems degrade further linked to climate and local impacts in the absence of successful MPAs. Effectively managed MPAs are a viable, low-tech, cost-effective strategy¹⁰¹ and remain the best site-based option for reversing declining biodiversity and unsustainable fisheries¹⁰².

96 Costello, M.J. 2024. Evidence of economic benefits from marine protected areas. *Sci. Mar.* 88(1): e080. <https://doi.org/10.3989/scimar.05417.080>

97 European Commission: Directorate-General for Maritime Affairs and Fisheries, Joint Research Centre, Borriello, A., Calvo Santos, A., Claringbould, D., et al. (2025). The EU blue economy report 2024, Publications Office of the European Union. <https://op.europa.eu/en/publication-detail/-/publication/0a4a79d8-353f-11f0-8a44-01aa75ed71a1/language-en>

98 Litvoet, A., et al. 2019. Blue Bioeconomy Forum: Roadmap for the blue bioeconomy. European Commission. <https://doi.org/10.2826/613128>

99 Oceana Europe, Seas at Risk, ClientEarth & Protect Our Catch. 2025. Briefing: The EU Ocean Pact and Marine Protected Areas – Supporting coastal jobs and climate resilience thanks to a healthier ocean. 5 pp. <https://europe.oceana.org/reports/briefing-the-eu-ocean-pact-and-marine-protected-areas/>

100 Ibid

101 Roberts C.M., O’Leary B.C., McCauley D.J. et al. 2017. Marine reserves can mitigate and promote adaptation to climate change. *Proc. Nat. Acad. Sci.* 114: 6167–6175. <https://doi.org/10.1073/pnas.1701262114>

102 Costello, M.J. 2024. Evidence of economic benefits from marine protected areas. *Sci. Mar.* 88(1): e080. <https://doi.org/10.3989/scimar.05417.080>

MPA CASE STUDIES

1 – 3: Examples of key criteria for success | 4 – 6: Examples of benefits from functioning MPAs



Figure 2. European MPA case study locations from the Mediterranean (see Table 1).

Table 2. European MPA Case Studies

Case Study / MPA	Country	Year	Size (km)	Case #
Gyaros MPA ¹⁰³	Greece	2019 / 2022	250 (NTZ)	1
Posidonia Balears ¹⁰⁴ (11 MPAs)	Balearic Islands, Spain	Various (1982 – 2019); 2020	618 (43.5 NTZ)	2
Bonifacio Strait Nature Reserve ¹⁰⁵	Corsica, France and Sardinia, Italy	1999	796 (11 NTZ)	3
‘Western Mediterranean’ (six MPAs)	France and Spain	Various (1974 – 1995)	Various (1 – 85)	4
Portofino MPA ¹⁰⁶	Italy	1999	3.46 (0.16 NTZ)	5
Kosterhavet National Marine Park ¹⁰⁷	Sweden	2009	390	6

103 <https://medpan.org/en/resource-center/mpa-success-story-gyaros-adopts-broad-participatory-approach-promote-protection-sea>

104 <https://atlasposidonia.com/en>

105 <https://bonifacio.co.uk/discover/bonifacio-life-size/bouches-de-bonifacio-nature-reserve/>

106 <https://medpan.org/en/resource-center/mpa-success-story-reserve-try-balance-nature-protection-and-high-human-pressure>

107 <https://www.vastsverige.com/en/kosterhavet>

1. Gyaros MPA, Greece



Key criteria for success:

Full stakeholder agreement and representation

Photo: Alexandros Avramidis / Blue Marine Foundation

Gyaros is a former prison and exile island in the northern Cyclades in the Aegean Sea. It hosts the largest population of monk seals in the Mediterranean which use the island's sea caves for breeding. The island's waters also contain important marine habitats including Posidonia seagrass and maerl beds. Gyaros was listed as a Natura 2000 site in 2011, and partially protected in 2019, with full protection established in 2022 and endorsed by a Presidential Decree in 2026. All types of fishing have been banned in the MPA covering 250 km².

The success of the MPA has been primarily attributed to the full involvement of all stakeholders and interested parties in a participatory system and the formation of a co-management committee which contains representatives from local and national government, fishers, marine research and conservation NGOs¹⁰⁸.

Through the participatory system all stakeholders were able to have direct involvement and participation in the co-management of the MPA¹⁰⁹. The co-management committee developed an

ecosystem-based, holistic and integrated proposal for the protection of Gyaros which was agreed through open and transparent dialogue and meetings.

MPA success is also strongly linked to the ability to collect evidence to determine whether the initial protection measures were working and then adapt these measures when this evidence showed that partial protection was not preventing overfishing. The protection measures were amended in legislation to ensure full protection from all types of fishing only three years after the MPA was established.

¹⁰⁸ https://www.wwf.gr/en/our_work/nature/marine/marine_protected_areas/gyaros

¹⁰⁹ <https://medpan.org/en/resource-center/mpa-success-story-gyaros-adopts-broad-participatory-approach-promote-protection-sea>

2. Posidonia protection in the Balearic Islands, Spain



Photo: Dimitris-Poursanidis / Blue Marine Foundation

Key criteria for success:

Strong government support and innovative tools / and management that allow anchoring for recreational vessels

The protection and conservation of Posidonia oceanica seagrass meadows in the Balearic Islands shows how local management efforts can be developed that allows sustainable use of shallow marine areas while also protecting the key habitats such as seagrass beds¹¹⁰. The Balearic Islands government approved Decree 25/2018 in 2018 that established a framework for the protection and conservation of Posidonia meadows. The decree prohibits fishing with mobile gear, the extraction of aggregates, dumping of dredged materials and uncontrolled anchoring within seagrass beds. The substantial impact of anchoring by recreational vessels on seagrass beds was first assessed by the Posidonia Balears project in 2000 (LIFE00 NAT/E/007303) using citizen science SCUBA divers to collect data, which has continued with government support to the present day as the Posidonia Monitoring Network¹¹¹.

To effectively implement the Decree with a focus on anchoring, the government established the Posidonia Surveillance Service involving a fleet of patrol boats to advise and assist vessels to anchor safely without damaging the seagrass beds¹¹². This is supported by a regularly updated comprehensive geospatial analysis of seagrass beds around the islands to know the exact location of the habitat. This information is available to vessel users via the Posidonia GOIB app so that they can anchor safely without damaging the seagrass. The government has

also established a number of anchoring areas where low impact mooring buoys have been installed in sites where there is a higher risk of impact on seagrass beds from uncontrolled anchoring. Overall, the key aspects that have enabled successful protection of Posidonia meadows in the Balearics are strong government support, and innovative local management measures and tools that allow vessels to continue to anchor around the islands while also minimising damage to the seagrass habitat.

¹¹⁰ <https://atlasposidonia.com/en/>

¹¹¹ <https://atlasposidonia.com/en/posidonia-monitoring-network/>

¹¹² <https://atlasposidonia.com/en/surveillance-service/>

3. Bonifacio Strait Nature Reserve, France and Italy

Photo: Greenpeace Italy / Blue Marine Foundation

Key criteria for success:

Cross-border management approach, strong enforcement, monitoring and stakeholder involvement

The Bonifacio Strait lies between the islands of Corsica and Sardinia in the Mediterranean Sea and is an international marine park jointly managed by France and Italy. The marine park, established in 1999, is one of the few trans-boundary fully coordinated MPAs in Europe. The MPA was given legal identity by the European Grouping for Territorial Cooperation (EGTC) which has enabled the setting up of the joint management of the park between France and Spain including a rotating presidency every 3-4 years¹¹³. The EGTC has also facilitated the cross-border coordination for scientific research and monitoring, enforcement and the management of tourism. The marine park has a strong enforcement component with constant monitoring by teams from both countries. There is also a long-term involvement of key stakeholders such as fisher corporations who have contributed to the design and implementation of fishing regulations and also provide data as part of fisheries monitoring.

The effective management of the marine park enabled a 250% increase in fish stocks by 2015, including key commercially targeted resources such as lobster, seabass and seabream¹¹⁴. Diving-related tourism in the

MPA generates substantial revenue of over one million USD¹¹⁵. Revenue generated locally by fishing and tourism are high enough to cover MPA management costs in this MPA and a number of others in Southern Europe¹¹⁶.

¹¹³ <https://www.enezgreen.com/en/the-bonifacio-strait-international-marine-park>

¹¹⁴ Marengo, M., Culioli, J. M., et al. (2015). Comparative analysis of artisanal and recreational fisheries for *Dentex dentex* in a Marine Protected Area. *Fisheries Management and Ecology*, 22(3), 249-260. <https://doi.org/10.1111/fme.12110>

¹¹⁵ Roncin N., Alban F., Charbonnel E., et al. 2008. Uses of ecosystem services provided by MPA: How much do they impact the local economy? A southern Europe perspective. *J. Nat. Conserv.* 16: 256-270. <https://doi.org/10.1016/j.jnc.2008.09.006>

¹¹⁶ Ibid

4. Western Mediterranean MPAs, France and Spain

Photo: Alexandros Avramidis / Blue Marine Foundation

Six MPAs:

Cerbère-Banyuls and Carry-le-Rouet (France); Medes, Cabrera, Tabarca and Cabo de Palos (Spain)

MPA Benefits:

Fisheries enhancement through 'spillover', ecotourism

The six MPAs in the Western Mediterranean Sea were established between 1974 and 1995 and were all considered to be functional from 2000¹¹⁷. They contain a range of habitats including seagrass beds, rocky reefs, maerl beds and soft sediments on both the continental coastline and offshore islands. The MPAs contain both areas closed to fishing and where fishing is restricted. A study of the fisheries catch and effort data assessed the level of spillover or biomass export from these MPAs for different commercial species (finfish and shellfish)¹¹⁸.

Analysis clearly showed that catches and revenues were higher next to the MPA boundaries for all types of fishing gear used. The level of catch decreased as the distance from the MPA boundary increased which was a strong indicator of spillover (biomass export) from the MPA to the adjacent fishing grounds¹¹⁹. The spatial extent of spillover varied between 0.7 and 2.5 km from the MPA depending on species mobility. This study is a clear example of the fisheries benefits that MPAs can provide for artisanal fishers in the Mediterranean and shows that coastal MPAs are an effective management tool for artisanal fisheries in the region¹¹⁹.

In addition to fisheries, non-extractive activities in the Western Mediterranean MPAs can generate significant revenue. An analysis of non-extractive tourism revenue for Medes MPA in Spain estimated that SCUBA diving and glass-bottom boat trips generated €5.26 million in revenue in 2005 which made up 84% of the revenue for this MPA¹²⁰. The MPA also directly generated €0.21 million for the local economy through diving taxes. The amount of revenue from tourism and fishing are very likely to be higher for the present day.

¹¹⁷ Goñi R., Adlerstein S., Alvarez-Berastegui D., et al. 2008. Spillover from six western Mediterranean Marine Protected Areas: evidence from artisanal fisheries. *Mar. Ecol. Progr. Ser.* 366: 159-174. <https://doi.org/10.3354/meps07532>

¹¹⁸ Ibid

¹¹⁹ Ibid

¹²⁰ Merino G., Maynou F., Boncoeur J. 2009. Bioeconomic model for a three-zone Marine Protected Area: a case study of Medes Islands (northwest Mediterranean). *ICES J. Mar. Sci.* 66: 147-154. <https://doi.org/10.1093/icesjms/fsn200>

5. Portofino, Italy

Photo: Jean-Luc Solandt / Blue Marine Foundation

Key criteria for success:

Clear, realistic management objectives including the local economy, strong stakeholder involvement and support

Portofino MPA in north-west Italy, established by a national government decree in 1999, covers 3.46 km² with three management zones to regulate access and use, including a small no-take zone (0.16 km²). The MPA is close to densely populated coastal areas and a popular location for recreational activities such as SCUBA diving. Key attributes are the populations of red corals, both ecologically and commercially important fish and Posidonia seagrass beds. The MPA is managed by a management consortium involving three municipalities, the Metropolitan City of Genoa and the University of Genoa. Management objectives are to protect the environment and marine resources but also to promote and enhance compatible local economic activities¹²¹.

Effective management through the consortium has resulted in a strong recovery of fish populations in both the fully and partially protected zones of the MPA. High biomass of grouper and sea bream were recorded inside the MPA¹²² with higher fish density and species richness recorded in the no-take and buffer zones compared to outside¹²³. There has also been a substantial recovery of the red coral population which is expected to recover to levels previously

seen fifty years ago¹²⁴. Development and close regulation of the diving industry have seen a large but sustainable increase in the number of charter vessels and recorded dives operating in the MPA, with the sector contributing almost €100,000 annually via taxes¹²⁵. Overall, the Portofino MPA is valued at more than €10 million in terms of natural capital and returns an aggregated net benefit of €14 million to the local economy each year. Economic benefits are at least two times greater the MPA costs¹²⁶.

¹²¹ <https://www.portofinoamp.it/chi>

¹²² Guidetti P, Baiata P, Ballesteros E, et al. (2014) Large-Scale Assessment of Mediterranean Marine Protected Areas Effects on Fish Assemblages. PLoS ONE 9(4): e91841. doi:10.1371/journal.pone.0091841

¹²³ Calò A., Di Franco A., Francour P. et al. (2018) FishMPABlue2 Project Deliverable 3.3.2: Results of the "ex ante" environmental-socio-economic monitoring activities (<https://medpan.org/en/resource-center/mpa-success-story-reserve-try-balance-nature-protection-and-high-human-pressure>)

¹²⁴ Bavestrello G, Bo M, Bertolino M, (2014) Long-term comparison of structure and dynamics of the red coral metapopulation of the Portofino Promontory (Ligurian Sea): a case-study for a Marine Protected Area in the Mediterranean Sea. Marine Ecology (2014) 1–10.

¹²⁵ Lucrezi S., Milanese M., Markantonatou V., et al. 2017. Scuba diving tourism systems and sustainability: Perceptions by the scuba diving industry in two Marine Protected Areas. Tourism Manag. 59: 385–403. <https://doi.org/10.1016/j.tourman.2016.09.004>

¹²⁶ Paoli C., Vassallo P., Pozzi M., et al. 2020. Towards strong sustainability: a framework for economic and ecological management of marine protected areas. Vie et Milieu - Life and Environment, 2020, 70: 209–223.

6. Kosterhavet Marine National Park, Sweden

Photo: Jean-Luc Solandt / Blue Marine Foundation

MPA Benefits:

Increases in fisheries catch and revenue, and coastal tourism linked to effective MPA implementation and national park status

The Kosterhavet Marine National Park (KHNP) on the west coast of Sweden was established in 2009 as Sweden's first national marine park and covers an area of 390 km². The MPA contains four zones that restrict access and fishing but does not include no-take zones. The KHNP contains a range of coastal and marine ecosystems including seagrass beds and Sweden's only cold-water coral reef. The main objective of the KHNP is to protect the area's unique marine environment and ensure the survival of its cultural island heritage¹²⁷. It provides an interesting example of an MPA where rural development co-exists with robust nature conservation.

The KHNP has provided numerous economic benefits and helped to support the island community both culturally and economically. Small-scale fishers operating in the national park have benefitted through an increase in catches for both passive (74%) and mobile gear (78%) with an increase in the number of fishers using these gear types between 2012 and 2015¹²⁸. The association with the national park has also increased demand for locally caught seafood, particularly when sold to restaurants and the public (locals and visitors). Seaweed farming within the national park has also developed with a higher demand for algae products

related to the KHNP¹²⁹. The establishment of the national park has also increased the number of international visitors, the number of visits in the off-peak season and the number of people coming for a nature-based experience¹³⁰. Existing tourism companies have benefitted financially, and the number of tourism-based products has increased including ones based on local culture and nature. Overall, all stakeholders believe that the KHNP has had a positive impact on the region with economic benefits considerably greater than costs and tourism being the primary beneficiary¹³¹.

¹²⁷ Pantzar, M. (2020). Balancing Rural Development and Robust Nature Conservation – Lessons Learnt from Kosterhavet Marine National Park, Sweden, in J. Humphreys & R. W. E. Clark (eds), Marine Protected Areas: Science, Policy and Management, [e-book] Amsterdam: Elsevier, pp.299–328. <https://www.sciencedirect.com/science/article/pii/B9780081026984000162>

¹²⁸ European Commission: Executive Agency for Small and Medium-sized Enterprises, ICF Consulting Services Limited, IEEP, PML, Peri, I., et al. (2018). Study on the economic benefits of marine protected areas – Task 5 case studies – Final report, Publications Office, 2018. <https://data.europa.eu/doi/10.2826/243122>

¹²⁹ Ibid

¹³⁰ Ibid

¹³¹ Ibid

Annex 1

Table of European MPAs that have proven benefits for biodiversity and people, especially socio-economic benefits from fisheries and tourism.

MPA Name(s)	Country(ies)	Year	Criteria for Success	Key Benefits	Notes / References
Case Studies					
1. Gyaros	Greece	2019 / 2022	Stakeholder engagement / support, robust monitoring and enforcement	Protection of highly endangered marine mammal (Mediterranean Monk Seal), seagrass and maerl beds Higher fish abundance and biomass inside the MPA compared to outside	Partial protection in 2019; full protection in 2022 (NTZ). Presidential Decree in April 2026 Damalas et al., 2022 ¹
2. Posidonia Balears	Spain	2020	Local Government legislation (Decree), Stakeholder engagement / support, robust monitoring and enforcement	Protection of Posidonia seagrass meadows – maintain / increase carbon sequestration	https://atlasposidonia.com/en/
3. Bonifacio Strait Nature Reserve	France and Italy	1999	Good governance – coordination and enforcement, strong local / national support – cross-border success story Rare example of a fully coordinated cross-border MPA in Europe	250% increase in fish stocks (e.g. seabass, seabream and lobster) by 2015. Protection of Posidonia seagrass meadows – carbon sequestration Generation of US\$1,137,600 from diving-related tourism	Marengo, M. et al. 2015 ² . Roncin et al 2008 ³
4. ‘Western Mediterranean’ (Six MPAs ⁴)	France and Spain	Various (1974 – 1995)	Long-term protection and monitoring, Stakeholder (fisher) involvement, effective enforcement	Fisheries enhancement via spillover for multiple species (finfish and shellfish) Catches and revenues were higher next to the MPA boundaries for all types of fishing gear used	Goni et al. 2008 ⁵
5. Portofino	Italy	1999	Strong regulation and monitoring of human activities (SCUBA diving) and high level of protection for marine ecosystems	Excellent ecosystem status, high biomass of keystone species, well managed dive tourism generating almost €100,000 annually via taxes	Large increase in dive tourism linked to healthy marine ecosystems. Lucrezi et al 2017 ⁶
6. Kosterhavet	Sweden	2009	Strong enforcement by National Authority. Collaborative management model involving all stakeholders and sectors with improved dialogue and creation of synergies. First National Marine Park in Sweden	Fisheries benefits – increase in catches by 74% for passive gear between 2012 and 2015 Eco-tourism – over 100,000 visitors per year boosting the local economy including demand for locally caught fish	Liljenström, S./Ekografen & Björk, K. (2009) ⁷ . Peri et al. 2018 ⁸ .

1 Damalas D, Stamouli C, Fotiadis N, Kikeri M, Kousteni V, Mantopoulou-Palouka D (2022) The Gyaros island marine reserve: A biodiversity hotspot in the eastern Mediterranean Sea. PLoS ONE 17(2): e0262943. doi.org/10.1371/ journal.pone.0262943

2 Marengo, M., Culioli, J. M., et al. (2015). Comparative analysis of artisanal and recreational fisheries for Dentex dentex in a Marine Protected Area. Fisheries Management and Ecology, 22(3), 249–260. <https://doi.org/10.1111/fme.12110>

3 Roncin N., Alban F., Charbonnel E., et al. 2008. Uses of ecosystem services provided by MPA: How much do they impact the local economy? A southern Europe perspective. J. Nat. Conserv. 16: 256–270. <https://doi.org/10.1016/j.jnc.2008.09.006>

4 Cerbère-Banyuls and Carry-le-Rouet (France); Medes, Cabrera, Tabarca and Cabo de Palos (Spain)

5 Goñi R., Adlerstein S., Alvarez-Berastegui D., et al. 2008. Spillover from six western Mediterranean Marine Protected Areas: evidence from artisanal fisheries. Mar. Ecol. Progr. Ser. 366: 159–174. <https://doi.org/10.3354/meps07532>

6 Lucrezi S., Milanese M., Markantonatou V., et al. 2017. Scuba diving tourism systems and sustainability: Perceptions by the scuba diving industry in two Marine Protected Areas. Tourism Manag. 59: 385–403. <https://doi.org/10.1016/j.tourman.2016.09.004>

7 Liljenström, S./Ekografen & Björk, K. (2009). Kosterhavet National Park. Swedish Environmental Protection Agency. <https://www.sverigesnationalparker.se/globalassets/kosterhavet/filer/kosterhavet-national-park.pdf>

8 European Commission: Executive Agency for Small and Medium-sized Enterprises, ICF Consulting Services Limited, IEEP, PML, Peri, I., et al. (2018). Study on the economic benefits of marine protected areas – Task 5 case studies – Final report, Publications Office, 2018. <https://data.europa.eu/doi/10.2826/243122>

MPA Name(s)	Country(ies)	Year	Criteria for Success	Key Benefits	Notes / References
Other Examples					
Multiple MPAs in the Mediterranean	Greece, Turkey, Spain, (Tunisia, Algeria)	Various		Increased CO2 storage capacity due to increased protection of seagrass and maerl beds. Net benefits of ecosystem services would rise by 15.1% (EUR 3.5 billion) with increased protection.	Mangos and Claudot, 2013 ⁹
Alonissos	Greece			40% of residents believe that the MPA designation results in a considerable increase in local tourism 44% believe that it has a positive impact on the livelihood of people working in the tourism sector.	Trivourea et al, 2011 ¹⁰
Alonissos	Greece			Tourism accommodation owners and agencies benefited economically by the MPA. Tourists believe that the MPA constituted a significant advantage for Alonissos compared to other destinations.	Oikonomou and Dikou, 2008 ¹¹
Columbretes Islands Marine Reserve	Spain			Net gain in weight (>10%) of local lobster fishery catch. Benefits outweighed costs of reserve creation	Goni et al 2010 ¹²
Columbretes Islands Marine Reserve	Spain			Lobster export sufficient to maintain stable catch rates up to 1,500 m from the boundary. Fishing effort concentration at zone boundary. CPUE showed significant non-linear decline with distance	Goñi, Quetglas and Reñones, 2006 ¹³
Columbretes Islands Marine Reserve	Spain			Clear evidence of spillover of fish from the site (<0.5 km from the boundary) to the adjacent fishery based on continuously increased commercial fish yields at the zone border	Stobart et al, 2009 ¹⁴
Cap de Creus	Spain			Recreational boat fishers expenditure of 500€/yr/angler on goods and services directly relating to angling, 57.5% of expenditure was in one of the villages of the park.	Lloret et al, 2008 ¹⁵
Cap de Creus	Spain			Recreational shore fishermen spend about €600/yr on fishing supplies and car fuel with 20% of the expenditure made in the villages of the park	Font and Lloret, 2011 ¹⁶
Lyme Bay	England	2008	Strong collaboration between the Fisheries Authority, NGOs and local fishers. Restriction of mobile fishing gear	Increased local income generated by tourism, 95% increase in reef species and 400% increase in fish abundance by end of 2023	Renn, C., et al. (2024) ¹⁷ .
Lyme Bay	England	2008	Local management measure – mobile gear ban	Income of static gear fishermen has increased and remained consistently high	Mangi et al 2012 ¹⁸ (qualitative study)

9 Mangos A & Claudot M-A (2013). Economic study of the impacts of marine and coastal protected areas in the Mediterranean. Plan Bleu Papers 13, Plan Bleu, Valbonne

10 Trivourea, M, Karamanlidis, A, Tounta, E, Dendrinis, P and Kotomatas, S (2011). People and the Mediterranean Monk Seal (Monachus monachus): A Study of the Socioeconomic Impacts of the National Marine Park of Alonissos, Northern Sporades, Greece. Aquatic Mammals No 37 (3), 305-318.

11 Oikonomou ZS, Dikou A. 2008. Integrating conservation and development at the National Marine Park of Alonissos, Northern Sporades, Greece: perception and practice. Environ Manage. 2008 Nov;42(5):847-66. doi: 10.1007/s00267-008-9163-x. Epub 2008 Jul 15. PMID: 18626688.

12 Goñi, R, Hilborn, R, Díaz, D, Mallol, S and Adlerstein, S (2010) Net contribution of spillover from a marine reserve to fishery catches. Marine Ecology Progress Series No 400, 233-243

13 Goñi, R., Quetglas, A., & Reñones, O. (2006). Spillover of spiny lobsters Palinurus elephas from a marine reserve to an adjoining fishery. Marine Ecology Progress Series, 308, 207-219.

14 Stobart B, Warwick R, González C, Mallol S, Díaz D, Reñones O, Goñi R (2009) Long-term and spillover effects of a marine protected area on an exploited fish community. Mar Ecol Prog Ser 384:47-60 <https://doi.org/10.3354/meps08007>

15 Lloret, J., Zaragoza, N., Caballero, D. and Riera, V. 2008. Impacts of recreational boating on the marine environment of Cap de Creus (Mediterranean Sea). Ocean & Coastal Management 51 (11), 749-754. ISSN 0964-5691. <https://doi.org/10.1016/j.ocecoaman.2008.07.001>

16 Font PT & Lloret JR (2011). Socioeconomic implications of recreational shore angling for the management of coastal resources in a Mediterranean marine protected area. Fisheries Research, 108: 214-217.

17 Renn, C., et al. (2024). Lessons from Lyme Bay (UK) to inform policy, management, and monitoring of Marine Protected Areas. ICES Journal of Marine Science, 81(2), 276-292. <https://doi.org/10.1093/icesjms/fsad204>

18 Mangi SC., Rodwell LD & Hattam C (2011). Assessing the impacts of establishing MPAs on fishermen and fish merchants: The case of Lyme Bay, UK. Ambio 40: 457–68.

MPA Name(s)	Country(ies)	Year	Criteria for Success	Key Benefits	Notes / References
Lyme Bay	England	2008		Stakeholders perceive the social, economic and environmental benefits of the MPA to outweigh the perceived costs.	Rees et al 2013 ¹⁹ (qualitative study)
Lyme Bay	England	2008		Increase in annual total expenditure for recreational activities (£18 million)	Rees et al 2010 ²⁰
Lyme Bay	England	2008		Income generated inside MPA increased by £2.2 M after 3 years. Increase in expenditures of anglers and divers and turnover of charter boat operators and dive businesses	Rees et al 2015 ²¹
Lyme Bay	England	2008		Charter boat operators, dive businesses and recreational users did not think that MPA designation had immediate effects (e.g. no increased number of trips of sea anglers and divers). But, all sea anglers and one diver expressed an improvement in their recreational experiences as a result of the designation.	Hattam et al, 2014 ²²
66 MPAs in the North East Atlantic	England, France, Spain and Portugal	Various		77% of managers perceived socio-economic benefits as result of MPA implementation; 23% mentioned new income-generating activities related to fishing activities, e.g. implementing a brand or quality certification for products linked to the MPA.	Álvarez-Fernández et al, 2017 ²³ (qualitative study)
Torre Guaceto	Italy	2001	Collaborative approach between government and fishers that strengthened fishers' commitment to sustainability	Increased fish catches – 5 times higher inside MPA after 5 years, increase in fish biomass by 400% by 2016, doubling of fisher income. Strong increase in the commitment of local fishermen to environmental issues (i.e. the number of fines for illegal fishing after MPA establishment dropped to nearly zero	Restricted industrial fishing (mobile fishing gear banned) Russi, D. (2020) ²⁴ DiFranco et al. 2016 ²⁵
Torre Guaceto	Italy	2001		CPUE fell after opening the MPA buffer zone to fishing, then stabilised after three years at levels more than twice that of catches outside the MPA. In other re-opened MPAs without co-management, CPUE continued to decline similar to areas outside MPAs.	Guidetti et al, 2010 ²⁶ Guidetti and Claudet, 2010 ²⁷
Flamanville	France	2000	Enforced no-take zone, long-term monitoring	Increase in lobster density inside the reserve by 250% and a 15% increase in lobster catches adjacent to the fully protected area.	Amelot, M. et al. (2024) ²⁸
Gulf of Castellammare	Sicily, Italy		Management measure: trawling ban for selected area	Artisanal vessels operating inside the trawl ban area using static gear achieve higher catch rates than those outside. Artisanal vessels outside the ban area have become worse off due to increased activity of displaced trawlers.	Whitmarsh et al 2002 ²⁹

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MPA Name(s)	Country(ies)	Year	Criteria for Success	Key Benefits	Notes / References
Zakynthos	Greece		Three zones in MPA including no-take areas that provide areas for safe nesting grounds for loggerhead turtles	50% increase in visitors to the island, stabilisation of the loggerhead turtle population.	Togridou, A., Hovardas, T., & Pantis, J. D. (2006) ³⁰
Skaggerak Coast	Norway	2006	MPAs established are highly protected	CPUE for lobster increased by 245% in four years inside MPAs and by 87% in adjacent areas. Lobster size increased by 13% inside MPAs. Partially protected cod also increased in population density and size.	Moland, E., et al. (2013) ³¹
Medes Islands Marine Reserve	Spain	1983		Annual generation of US\$7.4 million by non-extractive tourism	Merino et al 2006 ³²
Medes Islands Marine Reserve	Spain	1983	Simulation model based on data from the MPA with some cost assumptions	Assumes that the tourism sector covers the costs of the reserves and that fishers receive income from tourist access fees. Total annual profits estimated to increase from €254,000 (fishing only) to €3.3 million eight years after the creation of the reserve. The net present value of the reserve can be between 4 and 12 times greater than that of the same area before the reserve.	Sala et al 2016 ³³
Balaeric Islands MPAs	Spain			Natural capital assessment – return of 10 euros in benefits for every one euro invested for management annually	Zerbarini et al 2021 ³⁴
La Restinga	Canary Islands, Spain			Generation of US\$739200 from diving-related tourism	Roncin et al 2008 ³⁵
Three MPAs on the Skaggerak Coast	Norway	2006	Strict fisheries restrictions – all gear banned except hook and line.	Fisheries spillover from MPAs – lobsters were larger and moved out of protected areas High level of gene flow between MPAs indicates larval spillover and drift	Thorbjørnsen S.H., Moland E., Huserbråten M.B.O., et al. 2018 ³⁶ Huserbråten, M. B. O. et al. 2013 ³⁷
Lamlash Bay, Isle of Arran	Scotland	2008	Small No-take MPA	Higher abundance and biomass of king scallops within the MPA.	Howarth L.M., Roberts C.M., Hawkins J.P., et al. 2015 ³⁸

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MPA Name(s)	Country(ies)	Year	Criteria for Success	Key Benefits	Notes / References
Parque Natural Sudoeste Alentejano e Costa Vicentia (PNSACV)	Portugal	2011	Multi-zone coastal MPA (largest in Portugal) with no-go, no-take and partially protected zones.	BACI study of long-term fisheries landing data shows that both landings and income per unit effort increased inside the MPA after implementation. Significantly higher landings recorded for octopus, conger eel, sole and rays	Belackova, A., Bentes, L., Buhl-Mortensen, L. et al. 2025 ¹ .
Port-Cros National Park (PCNP)	France	1963 (1999)	Initial ban on mobile gear use. Fishing Charter implemented in 1999 that included the banning of recreational fishing (e.g. speargun)	Artisanal fishing effort and yields remained stable after charter implemented while PCNP remained a hot-spot for dive tourism. Successful retention of fisher livelihoods and MPA conservation objectives	Cadiou, G., Boudouresque, C. F., Bonhomme, P., & Le Dire´ach, L. 2009 ² .
Lundy Island Marine Nature Reserve	England	1986	Presence of a no-take zone	MPA provides non-market recreational benefits with a mean consumer surplus of £359 - £574 per trip and higher values linked to the designation of a no-take zone	Chae, D. R., Wattage, P. & Pascoe, S. 2012 ³
Multiple Mediterranean MPAS	Spain, France, Italy, Greece, Croatia	Various	Five key attributes: □ Strong enforcement □ Management plan □ Fisher engagement in MPA management □ Fishers represented on MPA board □ Promotion of sustainable fishing	Presence of these attributes leads to healthier fish stocks, higher fisher incomes and better social acceptance of management practices. Enables achievement of conservation goals and profitable small-scale fisheries (win-win).	Di Franco, A. et al. 2016 ⁴ .
Multiple MPAs in Southern Europe	Various	Various		Increase in mean expenditure for recreational fish-ers and scuba divers. Mean local added value due to the expenditures of non-resident MPA recreational fishers and scuba divers: respectively €88,319/yr and €551,481/yr per MPA. Yearly local income related to services to non-resident recreational users: €640,000/yr per MPA. Mean jobs created for MPA management: 8/yr. Mean jobs generated per year by local expendi-tures of non-resident recreational fishers and scuba divers: respectively 2.1 and 13	Alban et al, 2008 ¹
Tabarca; Cerbère-Banyuls and Carry-le-Rouet MPAs	France and Spain	Various		Significantly higher catches (biomass) for some target species near MPA borders fishing on seagrass beds. Spillover was sufficient to provide local benefits to ar-tisanal fisheries (both juvenile and adult spillover).	Forcada et al, 2009 ²
Multiple Western Mediterranean MPAs ³	France and Spain	Various		Gradual increase of CPUE of 2–4% per year for the study period (30 years).	Vandeperre et al, 2011 ⁴

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Annex 2

MPA Guide¹ – Enabling Conditions

Enabling Conditions across all stages of establishment	1. Clearly defined vision and objectives 2. Long term political will and commitment 3. Sustainable finance 4. Public participation with contextual and procedural fairness 5. Evidence-based decision-making 6. Knowledge integration e.g. across academic disciplines, local, indigenous, practitioner domains. 7. Coordination with related governance institutions. 8. Collaboration across jurisdictions. 9. Transparency and communications. 10. Upward and downward accountability to legal mandate and to stakeholders. 11. Recognition and support of existing governance by indigenous peoples and local rights-holders, including sovereignty, self-determination and rights of access, use and management. 12. Conflict resolution mechanisms.
Enabling conditions from proposed/committed to designation	All the enabling conditions above, plus: Ecological design principles: 13. Viability based on MPA position, size, spacing, shape, and permanence. 14. Representativeness and replication of habitat. 15. Incorporation of species and habitats of unique conservation value. 16. Design for connectivity and resilience. 17. Precautionary approach considering current and emerging threats. 18. Consideration of existing threats and mitigation. Social design principles: 19. Inclusion of social objectives for multi-dimensional human well-being. 20. Recognition of pre-existing human rights, tenure, uses: extractive and non-extractive. 21. Consideration of pre-existing resource use and socio-economic status. 22. Accounting for unequal costs and benefits to different social groups. 23. Impact and benefit-sharing with distributional fairness.

Enabling conditions from designated to implemented	All the enabling conditions above, plus: 24. Sufficient and properly organised staffing and funds. 25. Appropriate and adequate administrative structures and processes. 26. Stakeholder engagement plan. 27. Compliance and enforcement (including graduated sanctioning). 28. Education and outreach. 29. Clarity of rules, rights, boundaries.
Enabling conditions from implemented to actively managed	All the enabling conditions above, plus 30. Ongoing monitoring evaluation, and knowledge-sharing. 31. Adaptive management. 32. Support for livelihoods, e.g. development programmes, capacity building, hiring. 33. Effective management of broader seascape and external pressures. 34. Ongoing efforts to build trust, strong local leadership, partnerships with local users. 35. Local collaboration in monitoring, enforcement, and management. 36. Ongoing consideration of cultural values, traditions, and activities in site management.

¹ Grorud-Colvert, K., J. Sullivan-Stack, C. Roberts, et al. 2021.The MPA Guide: a framework to achieve global goals for the ocean. Science 373. <https://doi.org/10.1126/science.abf0861>

Annex 3

A screenshot of the Matrix used for the Revised Approach, with definitions for the four levels of risk for fisheries activities in European (N2k) Marine sites.

Fisheries in EMS Matrix – Generic fisheries template													
Red													
Amber													
Green													
Blue													
Fishing gear type	Generic sub-features	Subtidal sand (high energy)	Subtidal gravel and sand	Subtidal muddy sand	Seagrass (SACs)	Seagrass (SPAs)	Marl	Mussel bed on boulder and cobble skews	Estuarine rock (boulder, cobble and bedrock)	Estuarine fish community	Subtidal mud		
	Features												
	Equivalent sub-features												
	Towed (demersal)	Beam trawl (whitefish)											
		Beam trawl (shrimp)											
		Beam trawl (pulchreling)											
		Heavy otter trawl											
		Multirig											
		Light otter trawl											
		Pair trawl											
	Anchor seine												
	Scottish style seine												
	Towed (demersal/pelagic)												
	Towed (pelagic)	Mid-water trawl (single)											
Matrix SAC feature-subfeature matching SPA feature-subfeature matching													

Risk Level Definitions¹:

- RED:

Where it is clear that the conservation objectives for a feature (or sub-feature) will not be achieved because of its sensitivity to a type of fishing, - irrespective of feature condition, level of pressure, or background environmental conditions in all EMSs where that feature occurs - suitable management measures will be identified and introduced as a priority to protect those features from that fishing activity or activities.
- AMBER:

Where there is doubt as to whether conservation objectives for a feature (or sub-feature) will be achieved because of its sensitivity to a type of fishing, in all EMSs where that feature occurs, the effect of that activity or activities on such features will need to be assessed in detail at a site specific level. Appropriate management action should then be taken based on that assessment.
- GREEN:

Where it is clear that the achievement of the conservation objectives for a feature is highly unlikely be affected by a type of fishing activity or activities, in all EMSs where

1 <https://www.gov.uk/government/publications/revised-approach-to-the-management-of-commercial-fisheries-in-european-marine-sites-overarching-policy-and-delivery>



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