



Life

and Marine Protected Areas

How Effective are Europe's MPAs?

Conclusions of the 2021 ex-post visits
to closed projects



Summary Report

Prepared by Lynne Barratt (NEEMO EEIG)

March 2023

Prepared by



This report has been prepared by Lynne Barratt based on conclusions of the 2021 ex-post mission reports compiled by NEEMO monitoring experts.

Ex-post evaluations by: Quirin Renard, Sara Mora, Georgia Valaoras, Camilla Strandberg, Lucija Kursite, Chiara Spotorno, Michele Lischi, João Salgado, Malamo Korbetis, Mitja Kaligarič, Viktorija Maceikaite, Sonja Jaari, Bent Jepsen, Inta Duce, Jörg Böhringer and Sara Luchetti.

The report has been edited by Maja Vasiljević.

Acknowledgements

The input to the ex-post from former beneficiaries, habitat and species experts and current marine protected area (MPA) managers and volunteers has been invaluable in preparing this assessment.

In addition, individual technical monitors would like to acknowledge the following people and organisations who provided support and information above expectations. We thank you all and hope that this report truly reflects your thoughts and opinions.

From Parc Naturel National des Calanques, France: Alain Mante

From Nature Conservation Consultants, Greece (and formerly Hellenic Ornithological Society): Tasos Dimalexis and Jakob Fric

From the Hellenic Ornithological Society, Greece:
Danae Portolou, Roula Trigou and Panos Kordopatis

From the Klaipėda University, Lithuania: Darius Daunys

From the Regional Ministry for the Environment of Andalusia, Spain:
Rosa M^a Mendoza Castellón and Soledad Vivas

From the Fundación Biodiversidad, Spain: Víctor Gutiérrez

From Museu da Baleia da Madeira, Portugal: Luis Freitas

From Assopaguro Diving Club, Italy: Vittorio Gradoli

From Regione Lazio, Italy: Luca Marini

Citation

NEEMO (2022) LIFE and Marine Protected Areas: How Effective are Europe's MPAs? Conclusions of the 2021 ex-post visits to closed projects: Summary Report by Lynne Barratt.

Cover photo: LIFE+ INDEMARES

Disclaimer

This document has been prepared for the European Commission however it reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Contents

Abbreviations and acronyms	II
Summary	III
1 Introduction	1
1.1 Marine Biodiversity in European Seas	1
1.2 LIFE and the Marine Environment	3
1.2.1 Events	3
1.2.2 Publications	4
2 The 2021 Ex-Post Study	6
2.1 Policy Landscape	6
2.2 Project Selection	7
2.3 Ex-Post Objectives	9
2.4 Methodology and Specific Issues Addressed	9
3 Ex-Post Synthesis	11
3.1 Threats/Pressures	11
3.2 Conservation Objectives	20
3.3 Conservation Measures	22
3.3.1 Restoration	22
3.3.2 Strictly Protected Areas	25
3.3.3 SAC/SPA Designation	28
3.3.4 Community/Stakeholder Engagement	30
3.4 Management	34
3.4.1 Management Plans	34
3.4.2 Governance/Responsible Authority	39
3.4.3 Financing Mechanisms	42
3.4.4 Monitoring, Control and Surveillance (MCS)	46
3.4.5 MPA Networks	49
3.5 Conservation Outcomes	52
3.5.1 Impact Assessment	52
3.5.2 Sustainability	54
3.5.3 Replication and Transfer	55
3.5.4 Leverage	55
3.5.5 KPIs	56
3.6 Policy Impact	57
3.7 Lessons Learnt	59

Abbreviations and acronyms

BALTFISH	Baltic Sea Fisheries Forum
CCB	Coalition Clean Baltic
CFP	EU common fisheries policy
CINEA	European Climate, Infrastructure and Environment Executive Agency
DG ENV	EC Directorate-General for the Environment
DG MARE	Directorate-General for Maritime Affairs and Fisheries
EC	European Commission
EEA	European Environment Agency
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EMFAF	European Maritime, Fisheries and Aquaculture Fund
EMFF	European Maritime and Fisheries Fund
ERDF	European Regional Development Fund
EU	European Union
HELCOM	Baltic Marine Environment Protection Commission (the “Helsinki Commission”)
HOS	Hellenic Ornithological Society
IBA	Important Bird Area
ICES	International Council for the Exploration of the Sea
ICNF	Institute for the Conservation of Nature and Forests (ICNF) (Instituto da Conservação da Natureza e das Florestas, Portugal)
IP/IPE	LIFE Integrated Project for Environment
IUCN	International Union for Conservation of Nature
MCS	Monitoring, control and surveillance
MPA	Marine protected area
MSFD	Marine Strategy Framework Directive
NGO	Non-governmental organisation
SAC	Special Area of Conservation (under the EU Habitats Directive)
SCI	Site of Community Importance (under the EU Habitats Directive)
SPA	Special Protection Area (under the EU Birds Directive)
VELMU	Finnish Inventory Programme for the Underwater Marine Environment

Summary

Recent evidence shows that the loss of marine biodiversity in European seas has not been halted and that there remains insufficient data concerning many habitats and species across all biogeographical areas. Set against this backdrop, and the ambition of the EU Biodiversity Strategy for 2030 to protect 30% of European seas by 2030 (currently at 12%), the ex-post study to examine the contribution of past LIFE projects to effective management of marine protected areas (MPAs) is timely.

Projects supporting the conservation of marine habitats and species are less well represented in the LIFE programme than terrestrial projects, but the twenty projects selected for this ex-post study covered 4 biogeographical regions and represented 12 Member States. There were good examples of improved protection measures for targeted habitats and species, some cases of improved conservation status and/or trend, improved knowledge of habitat distribution, species ecology and restoration techniques. Nevertheless, this ex-post study suggests that much more needs to be done to build on this work to protect European marine habitats and species.

The threats recorded by the ex-post studies are substantial. Contamination was rated the top threat, ranging from eutrophication (particularly in the Baltic), chemical pollution and marine litter. Recreation and tourism were noted as significant pressures mostly in the Mediterranean and to a lesser extent in the Atlantic. Seabed disturbance, such as the use of bottom contact gears and anchoring was also considered an important pressure in almost half of the projects, including in several projects on seagrass beds. Seabed damage caused by anchoring/mooring was reported as a major issue in Mediterranean seagrass meadows. Solutions to these threats ranged from establishment of mooring buoys to installation of anti-trawl devices. By-catch, involving marine mammals, sharks, turtles and seabirds, were reported in all biogeographical regions and some innovative solutions have been developed in the LIFE projects. Invasive species are an increasing problem in the marine environment and the majority of projects tackling this threat addressed the impact of terrestrial predators on breeding seabirds – there were no examples of removal of truly marine invasives. Approximately 38% of projects have reported quite a wide range of other threats including dredging, oil and gas exploration, offshore wind, mining, coastal development, and extractive industries such as gravel. Few of the projects reported that all the threats had been eliminated, but where the main threats have been eliminated then the results can be exceptional provided that the habitat remains protected.

In terms of effectively managing MPAs, setting conservation objectives is considered a high priority. It was noted that, while some conservation objectives might be set at the scale of the Natura 2000 site and imposed at the national level, site level conservation objectives were frequently missing, but this did not prevent LIFE projects making progress towards protecting the habitats and species targeted by the project. While no clear conclusions concerning successes and failures of certain measures in relation to specific pressures has emerged from this relatively small sample size, some key elements to success can be determined, even if projects were unable to fully implement them. Effective stakeholder engagement, particularly with fishing communities, dominated the discussions and proved most rewarding as well as most difficult across all the examples. Engaging with other sectors was rarely mentioned and most projects considered that getting the fishers on board was the main objective. In parallel, surveillance and control measures were seen as critically important to maintaining compliance, but it was equally noted that this required continued high levels of funding that was not often available.

In terrestrial environments, restoration techniques are commonly used to improve the status of habitats and to halt the decline of biodiversity. Such techniques are not very common in marine environments as restoration techniques are not so well developed and are significantly more costly to undertake. In many cases large scale habitat restoration has simply not been feasible to date. The ex-post study showed successful examples of restoration in three different habitat types, 1120* *Posidonia* meadows, 1150* Coastal Lagoons and 1170 Reefs. All were relatively small scale, especially when compared with similar terrestrial efforts, but this is somewhat understandable given the limitations of the LIFE programme budget. Substantial needs for marine restoration clearly exceed what is available under LIFE. Still, LIFE can continue promoting passive restoration, for example through well managed and enforced strictly protected marine areas.

Whilst the EU Biodiversity Strategy for 2030 also set the goal for 10% of the EU marine area to be under strict protection by 2030, very few of the LIFE projects reported strictly protected areas within the project or in the AfterLIFE phase and this reflects the general picture throughout European seas where less than 1% of marine areas are strictly protected.

Stakeholder engagement came across as a crucial element of effective management. Every project spent significant amount of time understanding the stakeholder groupings and putting in place effective mechanisms for engaging with these groups. Most important throughout were representatives of fishing communities and representatives of the tourism sector. Few projects engaged effectively with other sectors, particularly those associated with private or multinational/global businesses (shipping, oil and gas, renewable energy). The length of time needed to achieve effective engagement cannot be under-estimated and, crucially, efforts need to continue after the project has concluded, otherwise the effort can be entirely wasted, and trust once lost is difficult to regain. The costs of this engagement are rarely factored into the costs of establishing and managing MPAs.

Management plans are essential for ensuring effective implementation of measures designed to improve the conservation status of habitats and species. However, many MPAs operate without an agreed/approved management plan. On examination, it seems that the management plans had often been developed and submitted to regional (or even national) authorities to approve. In the absence of such approvals, the management authority would often operationalise the management plan to ensure that the MPA was being implemented according to the management plan objectives.

In the same way that management plans can operate on a national level or site level, the governance of MPAs is also multi-layered. The competent or responsible authorities can designate areas for protection and set out broad guidelines for how they should be managed. Governance on a site-by-site basis could be devolved to a public body, special purpose entity, a protected area authority, a co-management board, or a non-governmental organisation (NGO). In general, it seemed that co-management boards and NGOs performed better than public bodies and that continuity was more of an issue for structures set up within the project (co-management boards). Lack of interest and conflicting interests were the issues with public bodies, and NGOs produced the most consistent and cost-efficient results and were able to lever the most funds and maintain stakeholder connections. Poor governance was cited by many projects as a limiting factor in the effective implementation of MPAs. It seems that having an enthusiastic and active organisation dedicated to marine conservation and management of a protected area, and adequate financing, are key factor for success. In addition, conservation efforts are more effective when the management organisation is closely connected (both physically and sympathetically) with the MPA and the other stakeholders. This model lends itself to adaptive management, sensitive to changing circumstances and evolving knowledge. Management organisations that are disconnected from the ground experience difficulties in delivery.

Insufficient financing to effectively implement MPAs was seen as a limiting factor in many cases. There were several different financing models represented in the different countries, but the majority of financing comes from EU, national or regional public funds. There are very few examples of where private financing has been harnessed to support MPA management or development. Given the significant amount of work that will need to be accomplished to a) reach the 30% and 10% targets, and b) ensure that the correct level of management is in place to effectively protect the target habitats and species, then public financing (already insufficient for existing MPAs) is unlikely to be able to deliver the necessary actions. Some projects have demonstrated the effective use of private financing in MPA management in the AfterLIFE phases. The use of private funds to support concrete actions, provide human resources and monitoring, control and surveillance (MCS) activities cannot continue to be overlooked. Interestingly, projects did not report the use of the European Maritime and Fisheries Fund (EMFF)/European Maritime, Fisheries and Aquaculture Fund (EMFAF)¹ and felt that there was too high an emphasis on fishing sector. Inevitably, MPA managers will need to look for mixed financial models and explore options like blended finance to lever the funds required.

MCS is crucial to the sound management of MPAs and even more important in the offshore areas and when strictly protected areas will be established. The ex-post study revealed that MCS activities were very costly and were often neglected due to resourcing issues. Again, there are several different institutional models depending on which organisation has the mandate for carrying out arrests and fines. No real pattern emerged except that patrols conducted by the site personnel with back up support from the mandated authority appeared to work well, especially if combined with remote means of tracking vessels.

There is no doubt that establishing networks of MPAs is more effective in delivering conservation objectives than a single isolated MPA could be and there were good examples of where networks had been identified and designated, even if implementation was lacking. Some of the projects had a major objective of establishing a network of protected areas. While these could be identified during the project lifetime there were few cases of legal designation at the end of the project, mainly due to political delays and lack of will, but in some cases due to a desire to effectively implement existing MPAs before designating new ones that they did not have the resources to manage. In one case the consultation process was holding up progress. In some cases, the sites had been designated by the time of the ex-post but were not implemented, and some had secured follow on projects with exactly this aim in mind. Establishing networks of MPAs proved even more difficult in the few cases where transboundary issues were involved. Some projects did not have this as an objective but were already part of a network and some MPAs appeared to be quite isolated.

The data show that, for the twenty projects in the ex-post study, the actual impact of three projects was significantly greater than expected when the project was evaluated at the final report stage. In other words, the projects performed much better than expected in the AfterLIFE phase, due mainly to the impressive ability of these projects to lever funding and sustain or increase the impact of the results. Four projects registered a moderate increase between the estimated and actual results in the AfterLIFE phase, which was due to increased assessment of long-term sustainability in all cases with minor contributions from other parameters. The impact of five of the projects suggested that predictions of impact in the AfterLIFE phase had been accurate at the end of the project. For the remaining seven projects there was a reduction in the predicted impact in the AfterLIFE phase which was mostly attributed to an over-estimation of the impact on improving the conservation status of the target species and the long-term sustainability.

1 EMFF was the fund for the EU's maritime and fisheries policies for 2014-2020, while EMFAF runs from 2021-2027.

Some projects had an impact on policy implementation and significantly contributed to achieving compliance of activities with the requirements of the Habitats Directive. For example, methods for reducing by-catch were brought into law in Portugal and Sweden, inappropriate siting of offshore windfarms was prevented in Greece and, in Denmark, the Fisheries Regulation which introduced a trawling ban in Natura 2000 areas was seen as a result of the raised awareness created by the BLUEREEF (LIFE06 NAT/DK/000159) project. However, the project also highlighted that a barrier for further initiatives could result from the limitations for national authorities to designate zones of fishing restrictions due to the EU common fisheries policy (CFP) which requires all Member States with fishing interests in a conservation area to agree to the measures proposed.

Finally, a series of lessons learnt from the projects is presented at the end of this report, some of which could result in recommendations for the LIFE programme.



Investigating shallow water benthic reef habitats in the Spanish Mediterranean (Alicante) (INDEMARES - LIFE07 NAT/E/000732)

1 Introduction

“For years we thought the oceans were so vast and the inhabitants so infinitely numerous that nothing we could do could have an effect upon them. But now we know that was wrong. It is now clear our actions are having a significant impact on the world’s oceans. [They] are under threat now as never before in human history. Many people believe the oceans have reached a crisis point.”

Sir David Attenborough²

1.1 Marine Biodiversity in European Seas

Evidence has recently shown that despite the EU policy framework in place, the loss of marine biodiversity in Europe’s seas has not been halted. A high proportion of marine species and habitat assessments continue to be in an ‘unfavourable-inadequate’ or ‘unfavourable-bad’ conservation status or a status that is ‘unknown’, failing to meet the EU nature legislation’s objectives (EEA, 2019)³. According to the European Environment Agency’s (EEA) website (2021), from the latest information reported under the Habitats Directive and other sources (Figure 1⁴), there has been little recovery in habitats and species since 2007.



Figure 1
Overall biodiversity condition and trends in European seas

2 BBC The Blue Planet 2 Episode 8.
 3 EEA, 2019: <https://www.eea.europa.eu/publications/marine-messages-2>
 4 EEA, 2021: <https://www.eea.europa.eu/publications/europes-marine-biodiversity-remains-under-pressure>

The most important and significant threats for marine habitats are similar throughout all marine habitat types, and there is no evidence that there are improvements in addressing any of the pressures listed as significant in either the State of Nature in the EU⁵ or the European Red List of Habitats⁶ reports. Indeed, the evidence for some pressures such as plastics in the ocean suggests an increasing trend. The main pressures can be broadly grouped into those which are a function of urbanisation (coastal modifications, tourism and leisure, pollution), those related to extractive industries (dredging, mining) and those related to exploitation (mariculture, fishing).

A 2016 European Red List of Habitats assessment was carried out for a total of 257 benthic marine habitats, of which 10 occur only outside the EU-28. In total, 19% of the evaluated habitats were assessed as threatened in the categories Critically Endangered, Endangered, and Vulnerable. An additional 12% are Near Threatened in the EU-28. These figures are approximately doubled if Data Deficient habitats are excluded. The percentage of threatened habitat types differs across the regional seas. There was no significant improvement in conservation status of marine habitats for the period 2013-2018⁷.

The European court of auditors⁸ has recently highlighted insufficiencies in the EU network of marine protected areas (MPAs), in the coordination between fisheries and environmental policies, and in the use of EU funding for conservation measures. They also show that some good examples of EU-funded marine protection measures were found in the LIFE and INTERREG programmes.

The EU marine policy framework is moving forward. In May 2020, the EU Biodiversity Strategy for 2030⁹ set new targets for the MPA network, restoration of marine ecosystems, implementation of fisheries management measures in MPAs and the reduction of by-catch. In June 2022, the European Commission (EC) also proposed a new legal framework for restoration with ambitious restoration targets for the marine environment¹⁰. These new targets are ambitious and build upon other important policy initiatives like the Marine Strategy Framework, the Water Framework, Marine Spatial Planning, the Habitats Directive and the Birds Directive. There is no shortage of marine policies designed to bring about good governance of the marine environment.

Nevertheless, recent studies and reports have pointed out several deficiencies of the EU network of MPAs (insufficient coverage of the deep sea¹¹, lack of specific management plans, insufficient protection measures against trawling¹², etc.). Now, with the new Biodiversity Strategy for 2030, the EU has a clear ambition to step up the network of MPAs, tripling the covered marine area, improving the management of designated areas, and setting up strictly protected areas for one third of those. The EC is also developing a system to assess the effectiveness of marine Natura 2000 sites and other EU MPAs.

5 <https://www.eea.europa.eu/publications/state-of-nature-in-the-eu-2020>

6 https://ec.europa.eu/environment/nature/knowledge/pdf/Marine_EU_red_list_report.pdf

7 EASME, 2020: Bringing Nature Back through LIFE. Executive Agency for Small and Medium Sized Enterprises, Brussels.

8 ECA, 2020: https://www.eca.europa.eu/Lists/ECADocuments/SR20_26/SR_Marine_environment_EN.pdf

9 https://ec.europa.eu/environment/nature/biodiversity/strategy/index_en.htm

10 https://environment.ec.europa.eu/topics/nature-and-biodiversity/nature-restoration-law_en

11 <https://www.eea.europa.eu/publications/marine-protected-areas>

12 <https://science.sciencemag.org/content/362/6421/1403>

1.2 LIFE and the Marine Environment

Over the 30 years of the LIFE programme, projects have focussed much more attention on terrestrial than marine environments which is reflected, *inter alia*, in the disparities between the list of protected species and habitats in terrestrial and marine environments in the Habitats Directive. Nevertheless, LIFE has played a vital role in the identification and designation of the marine Natura 2000 network, as well as in conservation of strictly protected species. In the last five years, the marine Natura 2000 network doubled in size and now covers a more diverse range of habitats under the broad classification of 'reefs' and has significantly expanded the offshore network. LIFE has also been essential in building up the knowledge base to gradually fill the significant data gaps around marine ecosystems.

Despite the seemingly low profile, the LIFE programme has been active in hosting events and producing publications to promote the contribution of the projects to achieving healthy European seas. This ex-post assessment is the most recent in a long line of activities which are summarised below.

1.2.1 Events

1.2.1.1 Marine Platform Meeting, Madrid, March 2015

The purpose of the meeting was to aid in identifying the best practices, methods of applied management planning, costs of interventions, monitoring, and the identification of a need for additional knowledge, including priorities for development work in relation to the marine environment. The output from the meeting was taken forward to the EC's Marine Biogeographical Seminar held in St Malo. Thirty LIFE projects attended the meeting where the following topics were discussed:

Theme 1: Regional integration of Natura 2000 sites

- Cross-border collaboration
- Regional networks
- EU financing
- Indicative case studies

Theme 2: Reconciling marine activities and the Natura 2000 objectives

- Fisheries
- Other marine sectors
- Cumulative impacts
- General principles
- Indicative case studies

Theme 3: Conservation objectives: definition, assessment and use for adaptive management

- Setting conservation objectives
- Highly mobile species
- Data
- Indicative case studies.

Some of the indicative case studies identified in the Platform Meeting Report have been included in the ex-post assessment. The main conclusions can be found in the Platform Meeting Report¹³.

¹³ NEEMO, 2015: Marine Platform Meeting Madrid – March 25th – 27th 2015 – Report on Proceedings.

1.2.1.2 First Marine Biogeographical Seminar, St Malo, May 2015

The focus of the first seminar was to focus on the management of marine Natura 2000 sites, bringing together representatives from Member States and stakeholder groups working on marine Natura 2000 to discuss issues of common concern and interest in relation to the conservation and management of marine Natura 2000 sites. The programme basically followed the three main themes discussed at the Marine Platform Meeting in Madrid, and NEEMO presented the findings of the LIFE workshops at the start of each of the themed sessions. The outcomes of the seminar are presented in the meeting report¹⁴.

1.2.1.3 LIFE Marine Platform Meeting on MPA management experiences towards strictly protected areas, La Rochelle, March 2022

Hosted by the French Integrated Project (IP) MarHa (LIFE16 IPE/FR/000001) in La Rochelle, the purpose of this Platform Meeting was to examine credible options for the effective establishment and management of strictly protected marine areas in an effort to demonstrate how the 10% target might be reached. NEEMO presented the preliminary findings of this ex-post study at the meeting and provided support to the various LIFE projects that were presenting and taking part. At the time of writing this report, the proceedings of the meeting have been in development, but the NEEMO team extracted a number of policy related messages from that meeting that have already been submitted to the European Climate, Infrastructure and Environment Executive Agency (CINEA).

1.2.2 Publications

1.2.2.1 Thematic Report

In 2014, NEEMO produced a marine thematic report¹⁵ and as part of that exercise mapped all the LIFE+ marine projects up to 2013 using metrics based on the contribution of the project to the Marine Strategy Framework Directive (MSFD) and the Birds and Habitats Directives. In addition, each project was examined for its contribution to the Programmes of Measures under MSFD. Under this mapping, 32 projects from 2005 through to 2012 were classified under Descriptor 1 of the MSFD (Biodiversity is maintained), and 34 projects mapped out as contributing to the Programmes of Measures. The numbers increase with the addition of 2013 projects and the few 2014 projects onwards that have already closed. This publication formed the basis of the selection process for this ex-post report.

¹⁴ https://ec.europa.eu/environment/nature/natura2000/platform/knowledge_exchange/28_document_library_en.htm

¹⁵ Astrale, 2014. The future of Europe's Seas – contribution of the LIFE programme to protecting and improving the marine environment.

1.2.2.2 LIFE and the Marine Environment

There have been two LIFE EU marine publications:

- EC 2006, LIFE Focus – LIFE and the Marine Environment – Promoting sustainable management of Europe's Marine Seas¹⁶. This publication showcased a number of projects supporting conservation action to improve habitats and species, some of which have been included in this ex-post study.
- EU 2018, LIFE and the Marine Environment¹⁷. The emphasis of the publication was the contribution of LIFE projects to supporting the MSFD. The study drew upon the findings of the Thematic Report published a few years earlier to compile the information. Several projects which featured in the Marine Biodiversity and MPAs section also feature in this ex-post study.



Conserving threatened habitats and species for sea birds in a coastal SPA through sustainable management (LIFE Berlengas - LIFE13 NAT/PT/000458)

¹⁶ https://ec.europa.eu/environment/nature/natura2000/marine/docs/appendix_4_life.pdf

¹⁷ https://ec.europa.eu/environment/archives/life/publications/lifepublications/lifefocus/documents/marine_environment_web_2018.pdf

2 The 2021 Ex-Post Study

2.1 Policy Landscape

The main policy focus for this ex-post study is the EU Biodiversity Strategy for 2030. However, we should also remember that with the recent fitness check of the Water Framework Directive, the upcoming review process of the MSFD, the ongoing adoption of the Member States' maritime spatial plans (the deadline was 2021), and the recent proposal of the EC for a nature restoration law, it is a right time to discuss good practices and lessons from LIFE projects on the protection and restoration of marine biodiversity and the effectiveness of MPAs.

Indeed, the EC Directorate-General for the Environment (DG ENV) launched a contract in 2021 to assess management effectiveness of marine Natura 2000 sites and other EU MPAs, including through a series of workshops and testing of the draft methodology on MPAs across Europe. The project reported the findings in June 2022 to a workshop where the draft questionnaire was presented. The results of this ex-post analysis have been aligned, where possible, with the findings of that work to harness the project experience and consolidate the stakeholder learning, specifically looking at conservation objectives, pressures and threats, conservation measures and management.

The Biodiversity Strategy for 2030 set the target of legally protecting 30% of EU seas by 2030 and strictly protecting 10% of EU seas. A recent publication by the EEA suggested that since 2016 there had been a rise in the percentage of MPAs in some regional seas, but, the overall percentage of MPAs in the EU, 12%, has not changed much by 2020. Referring to regional seas, the highest MPA coverage is in the Mediterranean Sea (with 18.7%). By looking at sub-regions, the Greater North Sea including Kattegat and English Channel have 28.2% of MPAs, as the highest MPA coverage, while Macaronesia with 3.6% of MPAs has the lowest coverage. Additionally, the majority of protected areas are coastal in nature and the offshore areas are universally neglected¹⁸.

In order to keep track of progress towards the biodiversity targets, the EU recently launched the 'biodiversity dashboard'¹⁹, a tool which allows visitors to the website to check on progress towards biodiversity targets. As of 2021, the dashboard for sub target A.1.2 – Legally protect a minimum of 30% of the EU seas, Indicator A1.2.1 – Marine Protected Area Coverage showed the figure at 12% (see Figure 2).

The indicators for Target 2 concerning strictly protecting 10% of the EU's seas, Target 3 concerning effective management of all protected areas, and Targets 15 and 16 concerning restoration of marine ecosystems, are still under development.

The EC published the Criteria and Guidance for Protected Areas Designation in January 2022²⁰. This provided some valuable context for the identification of areas under legal protection (the 30% target) and those under strict protection (the 10% target). Furthermore, there is useful information concerning the adoption of ecological corridors to support trans-European networks.

18 <https://www.eionet.europa.eu/etcs/etc-icm/products/etc-icm-reports/etc-icm-report-3-2020-spatial-analysis-of-marine-protected-area-networks-in-europe2019s-seas-iii>

19 <https://dopa.jrc.ec.europa.eu/kcbd/dashboard/#COHERENT%20NETWORK%20OF%20PROTECTED%20AREAS>

20 https://environment.ec.europa.eu/system/files/2022-01/SWD_guidance_protected_areas.pdf

Subtarget A1.2 - Legally protect a minimum of 30% of the EU's sea area

Indicator A1.2.1 - Marine protected area coverage

The methodology to calculate value at EU27 level is being consolidated and may consequently change in the future due to methodological updates.
 The contribution of the nationally protected areas to the target is to be confirmed.
 Last update: 2021

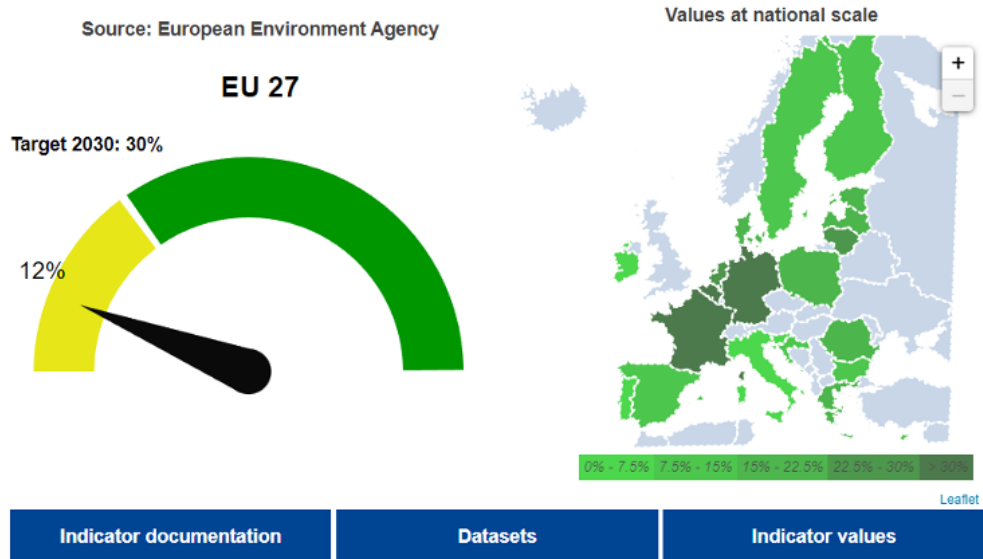


Figure 2:
 Progress towards target of
 MPA coverage for
 European seas

2.2 Project Selection

Twenty LIFE Nature projects focussing on “the effectiveness of management measures in Marine Protected Areas” were selected for ex-post evaluation in 2021. According to the pre-selection carried out, the number of projects specifically targeting the selected topic between 2005 and 2013 (LIFE+ projects only) was rather limited. Only 22 projects were eventually identified as compliant with the requirements. The pre-selection was done drawing upon the following data sources: LIFE Projects and LTDory databases and the mapping work done to prepare the Marine Thematic Report in 2014. With only 22 compliant projects, the 20 most suitable were accepted and no further assessment was needed; clearly it was not possible to arrange a spread of projects across the Member States. Nevertheless, 12 countries were represented in the study which extended to 4 marine biogeographical regions as follows:

- Mediterranean 9
- Baltic 6
- Atlantic 4
- Macaronesia 1.

The final project selection, together with the main qualifying factors, is shown in Table 1. The oldest project, MARSILES (LIFE03 NAT/F/000102) closed over 14 years ago, whilst the most recent project to close only 2 years ago was LIFE Berlengas (LIFE13 NAT/PT/000458).

Table 1: List of LIFE projects selected for the ex-post assessment

ID	Country	Project number	Acronym	Duration	Qualifying Factor	Monitor
1	PT	LIFE13 NAT/PT/000458	LIFE Berlengas	2014-2019	Within SPA, management plans developed	João Salgado
2	GR	LIFE12 NAT/GR/000688	CYCLADES Life	2013-2018	Strictly protected areas inside Natura 2000 site	Malamo Korbetis
3	MT	LIFE12 NAT/MT/000845	LIFE BaHAR for N2K	2013-2018	Extending SCIs and identifying new pSCIs for Natura 2000 network	Chiara Spotorno
4	PT	LIFE09 NAT/PT/000038	MarPRO	2011-2017	Conservation of MPAs in Mainland Portugal	João Salgado
5	SI	LIFE 10 NAT/SI/000141	SIMARINE-NATURA	2011-2016	Identification of IBA and SPA for Med Shags	Mitja Kaligarič
6	IT	LIFE09 NAT/IT/000176	POSEIDONE	2010-2014	Safeguard and restore SCIs for Posidonia	Michele Lischi
7	LT	LIFE09 NAT/LT/000234	DENOFLIT	2010-2015	Development of Natura 2000 network in offshore waters	Viktorija Maceikaite
8	PT	LIFE07 NAT/P/000646	CETACEOSMADEIRA II	2009-2013	Identifying critical areas for marine mammals	Sara Mora
9	ES	LIFE09 NAT/ES/000534	Life Posidonia Andalučia	2011-2016	New management plan defined by data collected	Sara Mora
10	LV	LIFE09 NAT/LV/000238	MARMONI	2010-2015	Biodiversity assessment and conservation status	Lucija Kursite
11	SE	LIFE08 NAT/S/000261	SAMBAH	2010-2015	ID of marine mammal hotspots for protection	Camilla Strandberg
12	GR	LIFE07 NAT/GR/000285	ConShagAudMIBAGR	2009-2012	Inventory of IBAs	Georgia Valaoras
13	FI	LIFE07 NAT/FIN/000151	FINMARINET	2009-2013	Planning the marine Natura 2000 network	Sonja Jaari
14	ES	LIFE07 NAT/E/000732	INDEMARES	2009-2014	Inventory and designation of Natura 2000 network	Sara Mora
15	DK	LIFE06 NAT/DK/000159	BLUEREFF	2006-2013	Blue corridor linking Natura 2000 sites	Bent Jepsen
16	LV	LIFE05 NAT/LV/000100	Baltic MPAs	2005-2009	Establishment of Natura 2000 network in LV, EE and LI	Inta Duce
17	DE	LIFE05 NAT/D/000152	BALTCOAST	2005-2012	Improving conservation status of an Annex I habitat	Jörg Böhringer
18	FR	LIFE03 NAT/F/000102	MARSILES	2003-2007	Legal enforcement of the islands' Maritime Park	Quirin Renard
19	IT	LIFE13 NAT/IT/000433	LIFE RES MARIS	2014-2018	Protect and restore three priority habitats in Natura 2000 sites	Sara Luchetti
20	PT	LIFE06 NAT/PT/0000192	Biomares	2007-2011	Addressing threats within an existing MPA	João Salgado

Some of the projects focused on biodiversity inventories and mapping with a view to establishing MPAs based on scientific data, where the main challenge was to follow up with the authorities responsible for protected areas to determine progress and establish conservation measures. Others had already established MPAs or were working within Natura 2000 sites and the task was focussed on sustainability, continuity and the effectiveness of the protected area. The majority of the projects dealt with habitats, two projects dealt with marine mammals and three dealt with marine birds within Special Protection Areas (SPAs) or Important Bird Areas (IBAs), although many more projects had elements or actions that targeted bird populations. One project dealt specifically with strictly protected areas.

2.3 Ex-Post Objectives

Ex-post evaluations focus on medium- and long-term effects of the project actions which may include concrete conservation measures, improved management, or increased awareness amongst stakeholders. In addition, an ex-post evaluation always includes an assessment of sustainability, including continuing site protection, maintenance of conservation measures and security of ongoing resources (human and financial). Specific objectives developed for this ex-post were:

- Examine the current status of the MPA network: expansion/maintenance
- Revisit any management plans including conservation objectives
- Catalogue the success of any concrete conservation measures and their maintenance
- Examine successes and failures
- Determine the most effective management measures
- Look at methods for monitoring effective management.

2.4 Methodology and Specific Issues Addressed

The methodology, direction of study and reporting templates were developed by the Marine Hub Leader who was also the ex-post leader and who drove the agenda and provided support throughout to all the monitors. The method was communicated to the monitors in a special briefing note developed specifically for this ex-post assessment and presented by the ex-post lead over an interactive TEAMS session with a Question and Answer session at the end. Monitors were encouraged to keep in contact with the ex-post lead and share any concerns, problems or highlights on a regular basis. Monitors were also encouraged to keep asking questions and not be too formulaic in their approach. It was appreciated that not every project would have answers to all the categories of questions and monitors were instructed not to let the template dictate the results but rather to keep an open mind and explore the most interesting outcomes of the project.

Once the monitors had identified the key questions they wished to explore, and ranked them in terms of importance, they were asked to make a list of contacts which may, or may not, involve the original beneficiary(ies). They were asked to bear in mind that there are likely to be a wide range of other stakeholders who may have inherited the project. These might include any marine park authorities or other agency which is mandated to manage MPAs in their country. Other stakeholders might include non-governmental organisations (NGOs) and/or community-based organisations who may be looking after MPAs on a voluntary basis. The monitors were asked to check if there was an organisation on the ground that could be contacted, to be inventive and not to give up if the original beneficiary cannot assist or had moved on, as was the case with a couple of projects. It was important to assess the effects of the LIFE project actions even if the people in control had never heard of the original LIFE project.

Monitors were given the choice of collecting information from interviews or by conducting site visits which undoubtedly yields the best information. However, we were mindful that COVID-19 restrictions were still in place in many locations and that monitors should visit at their own discretion.

At the specific project level, the focus of the ex-post mission was to collect information that could be relevant to answering the question '*how effective are MPAs?*' In order to achieve this, the monitors were asked to explore open questions concerning:

- **Threats/Pressures:** Were these correctly identified and adequately addressed during the project? Is there still an element of threat? Have new threats (e.g. invasive alien species) emerged since the project closed?

- **Conservation Objectives:** During the first Marine Platform Meeting in Madrid (2015) there was a good deal of focus on setting conservation objectives, which was also reflected in the First Marine Biogeographical Seminar in St Malo in the same year. Each project was asked whether conservation objectives for targeted habitats and species had been set within the MPA/Special Area of Conservation (SAC)/SPA, how these objectives had been set, and what metrics were used to assess success.
- **Conservation Measures:** What measures did the project use to improve the conservation status of the habitats and species within the MPA? Such measures might include restoration actions, establishment of 'no-take zones', or, as a supportive measure, improved stakeholder engagement.
- **Management Measures:** Improving the way MPAs are managed can be a powerful tool to reduce pressures or to achieve good conservation outcomes. Monitors were asked to explore the use of management plans, discover the effectiveness of governance structures, look into financing mechanisms and find out whether the MPA boundaries had been extended into a network through replication.
- **Monitoring, Control, and Surveillance (MCS):** No protected area would be truly viable without some kind of MCS system that underpins compliance with and enforcement of regulations in MPAs. This can operate on a variety of levels and monitors were asked to find out about formal and informal systems and the effectiveness of different approaches.
- **Conservation Outcomes:** No ex-post study would be complete without some kind of impact analysis to determine the effectiveness of the project in improving conservation outcomes both at the end of the project and during the AfterLIFE period (sustainability and replication). Wherever possible we have collected quantitative data, aligned to the current KPI database, e.g. area of habitat restored or increase in numbers of species.
- **Policy Impact:** Monitors were asked to explore any policy gaps or barriers which may be European, national, regional or local, and in some cases, projects do lead to changes in policy.

Finally, monitors were asked to compile a list of lessons learnt for each project and determine whether their project would make a good case study. Examples of good practice, innovative approaches or policy issues have been highlighted throughout this report in boxes for easy reference.

3 Ex-Post Synthesis

The main synthesis has been reorganised from the original templates to complement the work under the DG ENV contract on effectiveness of MPAs and match the type of information that might be requested in the assessment tool which is under development. In sections where there are LIFE projects that would make good case studies for particular aspects, summary information appears in boxes within the section.

3.1 Threats/Pressures

'Marine recovery can only be achieved by alleviating pressures.'

Mark Duffy²¹

In general, the projects had defined the pressures well and had mostly put in place actions to address them within the timeframe of the project, and in some cases, actions remained in place to continue to reduce the impacts originally identified. In some exceptional cases, the projects managed to eliminate targeted threats during the lifetime of the project, especially if these threats were localised like anchor damage in seagrass beds. More widespread pressures, such as marine contamination and invasive alien species could, at best, be contained and many projects reported continuing efforts to combat offsite issues. In some cases, projects reported new threats that had emerged since the project closed. These could be site specific like the development of a wind farm, or more widespread like the impact of increasing temperatures on the hydrology of coastal lagoons.

The pressures recorded by all the projects were organised into a range of most regularly recorded threats. The number of times the threat appeared is depicted in

Figure 3 and some of the more interesting individual responses are presented as evidence.

Main threats/pressures

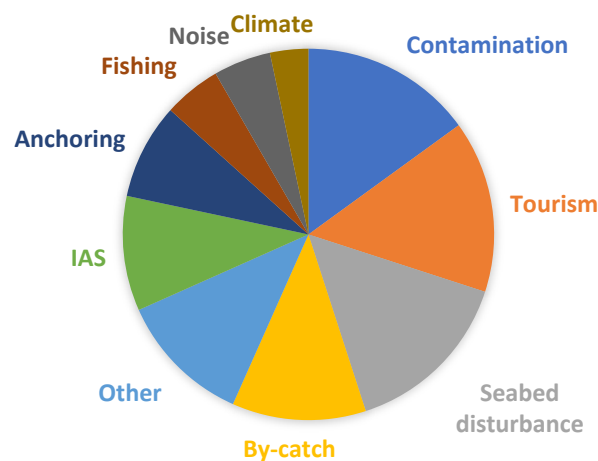


Figure 3:
Most commonly recorded
threats/pressures
in the projects

²¹ Natural England: Coastal Futures Conference 2023: Our Ocean and Coastal Future for the Next Decade. January 2023.

1. Contamination. It is not surprising that this pressure registered as an issue with 50% of the projects that recorded this as a threat. Of course, it is a wide-ranging issue that covered everything from chemical pollution to eutrophication, and included marine litter, so it is to be expected that this pressure is recorded in several projects. Understandably, alleviating these pressures is often outside the scope of the LIFE project and the threat is rarely reduced. Perhaps the most high-profile risk is associated with plastics. The increasing importance of this threat for all the species groups^{22, 23} was highlighted by several stakeholders of the Spanish project INDEMARES (LIFE07 NAT/E/000732). It was noted that consequences of micro-plastic pollution on the physiology of the different species and population trends remain to be further assessed. Also, in the case of cetaceans the observed levels of other pollutants in Spanish waters are very high. For instance, for Common bottlenose dolphin (*Tursiops truncatus*), Killer whale (*Orcinus orca*) and Striped dolphin (*Stenella coeruleoalba*), the concentration of polychlorinated biphenyls compounds is among the highest recorded for cetaceans globally²⁴. This fact could be behind the observed population declines and lack of recruitment of species such as the Common bottlenose dolphin and the Killer whale. But further studies are necessary to assess the real impact of this problem (including its accumulative effect) and the mechanisms through which it operates.

2. Recreation and tourism. This pressure also registered with 50% of the projects suggesting that it is a significant issue in all four biogeographical regions. Damage to habitats and species through recreational activities was recorded most commonly in association with seagrass beds and beach nesting birds in the littoral zone. In Greece, the CYCLADES Life (LIFE12 NAT/GR/000688) project noted that while threats related to fishing had been significantly reduced through the establishment of a Marine Wildlife Refuge, threats associated with recreational activities actually increased as more SCUBA divers, snorkellers and tourists were attracted to the location because of its increased prestige as a protected area. In Portugal, the CETACEOSMADEIRA II (LIFE07 NAT/P/000646) project set out to reduce the threat of increased shipping and recreational whale watching on cetacean populations of Madeira. The approval of a regulation for whale watching activities defining both exclusion zones, areas of operation and their respective carrying capacity²⁵ was considered a major step forward. The main problem seems to be the activity of non-licensed companies/individuals, and specially, of a few of them that deliberately commit infringements on a regular basis, compounded with the lack of enough surveillance. As regards licensed companies, even if the whale watching rules are not always fully observed, no serious infractions are reported, and the main problem refers to the fact that some of them do not operate in the area for which they obtained the authorisation, but in a different one (where the probability of finding cetaceans is higher). However, if the pressure from illegal companies/individuals continues to increase, this unfair competition could potentially lead licensed companies to stop complying with the codes of good practice.

22 <https://accedacris.ulpgc.es/handle/10553/107382>

23 <https://www.sciencedirect.com/science/article/abs/pii/S0025326X13006048>

24 <https://www.nature.com/articles/srep18573>

25 Regional Legislative Decree no. 15/2013/M; Ordinance no. 46/2014, of 22 April; Ordinance no. 13/2015 of 14 January.

The INDEMARES project in Spain also identified marine traffic collisions as a major threat in some areas such as the Canary Islands. Although some advances have been made, for example a working group on collisions has been created under the LIFE-IP INTEMARES (LIFE15 IPE/ES/000012) project to mitigate the problem, since the end of the INDEMARES project, several fast-ferries lines have been opened. Traditional vessels operating in existing lines have been substituted by fast-ferries in areas identified as important for cetaceans in the archipelago. Despite the existence of scientific information that supports the adoption of urgent protection measures in this regard, such as the case of Sperm whale (*Physeter macrocephalus*)^{26, 27}, the lack of sufficient information on the species distribution and use of the space are argued as main reasons for not adopting concrete protection measures.

Box 1 A note on plastic pollution from Spain

While plastic is undoubtedly an issue for marine species, due to its media impact (e.g. the spectacular images of animals trapped in plastics), it tends to be misused by public administrations to “show” that they are actively working on the conservation of these species/ the environment, when this might not necessarily be the case. For example, there is everywhere a proliferation of beach cleaning activities promoted by town councils and regional governments. Although this is positive and helps to raise awareness and involve citizens, it is clearly insufficient to tackle the problem of plastics themselves or the conservation of species.



Identifying critical marine areas to improve the conservation status of bottlenose dolphins in the Madeira archipelago (CETACEOSMADEIRA II - LIFE07 NAT/P/000646)

- 26 https://www.researchgate.net/publication/264121084_Increasing_numbers_of_ship_strikes_in_the_Canary_Islands_proposals_for_immediate_action_to_reduce_risk_of_vessel-whale_collisions
- 27 https://www.researchgate.net/publication/299341914_Abundance_and_Distribution_of_Sperm_Whales_in_the_Canary_Islands_Can_Sperm_Whales_in_the_Archipelago_Sustain_the_Current_Level_of_Ship-Strike_Mortalities

3. Seabed disturbance. This is recognised as a serious issue in all biogeographical regions and the impact of bottom contact gears on a range of habitat types is well documented. In this ex-post review 45% of projects reported seabed disturbance as an issue. Problems were mostly reported in seagrass areas, although coastal lagoons and shallow bays, as well as boulder reefs were also noted. In most cases the activities were reported as illegal. Some projects reported seabed disturbance as a threat but did not indicate specific habitat types. Projects reported that part of the problem concerns the lack of awareness about the ecosystem services that seagrass habitats provide, and they emphasised the importance of engaging with the fishing sector to bring about change. However, beneficiaries also observed that this type of engagement is time consuming (can take years to reach compromise), is expensive and often cannot be sustained after the end of the project. While control and surveillance clearly have a part to play in reducing the impact of bottom contact gears, there are evidently issues with maintaining these systems (see also section 3.4.4).

While possibly not ideal, several LIFE projects have adopted an approach that brings immediate results which could potentially be followed up with a more prolonged engagement approach once the benefits of protecting the seabed have been established. None of the projects formally followed this approach post-project. The Italian project POSEIDONE (LIFE09 NAT/IT/000176) effectively eliminated illegal trawling thanks to the installation of 550 concrete tetrapods in the sea at strategic points to protect the seagrass meadows. The strategic points were determined following extensive consultation with fishermen to determine where they fish so that the structures could be placed correctly to deter fishing and so that illegal trawling hotspots could be identified. The meadows were monitored some 7 years after the end of the project and the environmental status of the habitat was considered to be 'good'. However, the increase in percentage of dead seagrass mat and the fact that the lower limit of the meadow was subject to erosion in 2020 might cast some doubt on the actual status of the habitat. On an equally positive note, the fish populations were reported to be improving which confirms the improved function of the *Posidonia* meadow as a nursery area. The Coastguard, the body responsible for surveillance, controls illegal trawling by monitoring the 'blue box' systems on board the vessels. The Coastguard commented that *'the use of blue box systems alone is not sufficient guarantee [to prevent trawling] and that [they] need to be monitored in association with the presence of anti-trawling devices as the best option'*. The basic design was refined for later project Life Posidonia Andalusia (LIFE09 NAT/ES/000534) (see Figure 4) where the structures have proved to be effective against trawling but not against the use of other types of fishing gear which are also illegal in seagrass beds (e.g. trammel nets). At present, artisanal trawling is not considered as a major threat to seagrass beds in Andalusia, although further efforts are still necessary to control the use of bottom contact fishing gears in the *Posidonia* meadows. On the contrary, artisanal fishermen are currently one of the most valuable allies for the conservation of the *Posidonia* meadows because they understand that their economic activity depends on the conservation of this habitat.

Figure 4:
The evolution of
anti-trawling device
designs through the LIFE
projects



Simple tetrapod - POSEIDONE



Refined design - Life Posidonia Andalusia

In the Baltic region the BLUEREEF (LIFE06 NAT/DK/000159) project successfully raised awareness about the impact of trawling on seagrass beds, which led to the authorities proclaiming a ban on use of bottom trawling over a newly created boulder reef system in Natura 2000 areas, and thereby eliminating the threat.

4. By-catch. This was a pressure reported in all biogeographical regions by 40% of the projects. While by-catch involving marine mammals, sharks and turtles have all been dealt with by LIFE projects in the past, several of the ex-post projects highlighted the issue of seabird by-catch. In Greece, the ConShagAudMIBAGR (LIFE07 NAT/GR/000285) project carried out the first assessment of seabird by-catch in all major types of fishing gear used in the Aegean Sea and Ionian Sea. This resulted in the identification of the main seabird species affected by interaction with fisheries, the main types of fishing gear responsible for by-catch and provided better estimates of the by-catch rates for all seabird species of conservation concern in Greece. Seabird by-catch assessment will continue through ongoing LIFE projects. Discussions, support, knowledge transfer and workshops on by-catch take place through the Marine Task Force of BirdLife and the specific Seabird Bycatch Group. For example, LIFE Berlengas (LIFE13 NAT/PT/000458) workshop was held in 2019, while MAVA²⁸ and WWF²⁹ projects are currently taking place in the Mediterranean. One of the successful outcomes of the MarPro (LIFE09 NAT/PT/000038) project was the study on the inter-calibration procedures of census methodologies, by-catch evaluation methods and interactions between target species and fisheries. In the species action plan for Harbour porpoise 2021-2025 for Sweden, by-catch is judged to have the highest impact on the populations (see Box 2). The largest threat comes from static net fisheries with larger mesh sizes, for example nets set for cod (*Gadus morhua*), flatfish and lumpfish (*Cyclopterus lumpus*).

Box 2 Fisheries interaction: MarPro - Accidental by-catch in Portugal

The MarPro (LIFE09 NAT/PT/000038) project had a specific action focused on the “evaluation of the interactions between target species and fisheries”.

The information obtained, together with the results of the by-catch mitigation measures solutions essayed, allowed the drafting of good practice manuals directed towards different types of fisheries. Apart from the direct involvement of fishermen in the evaluation and identification of potential solutions, the project staff also developed a few tasks aiming at increasing awareness among the fishing sector (e.g. “Fisheries interactions with wildlife” animated video). Such process allowed the project to suggest the implementation of an optimised cost-effective monitoring scheme for cetacean and seabird population trends, as well as accidental captures by fisheries.

Information is available on the MarPro website: www.marprolife.org



28 MAVA Foundation (2019): Med bycatch Phase II – ‘Understanding Mediterranean multi-taxa bycatch of vulnerable species and testing mitigation – a collaborative approach’. <https://portals.iucn.org/library/node/49019>

29 WWF (2022): Addressing the interaction between small scale fisheries and marine megafauna in Greece. Technical Report: Phase II. Financed by the MAVA Foundation. <https://www.wwf.gr/en/?uNewsID=7648441>

5. Other threats: Approximately 38% of projects have reported quite a wide range of other threats including dredging, oil and gas exploration, offshore wind, mining, coastal development, and extractive industries such as gravel. In many cases, there may be more than one threat in any one project. Generally, projects dealing with inventories or developed on a wider geographical area reported a wider range of threats. For example, at the beginning of the project the FINMARINET (LIFE07 NAT/FIN/000151) in Finland, Baltic Sea, reported threats associated with coastal developments, small scale dredging, aggregate extraction, infrastructure (bridges, dykes and embankments) as well as dumping dredge spoils, all associated with Annex I habitats of the Habitats Directive. Although the threats were not directly addressed by the project (the aim was to collect data and provide modelling tools for habitats), the increased knowledge on the presence of valuable underwater habitats and inclusion of underwater data and habitat models in the newly developed marine management plans indicate the project may have helped to reduce some of the threats in the most vulnerable areas. Regrettably, the threats are still relevant today and have most likely become more severe especially in respect of coastal development and eutrophication in locations with less protection.

6. Invasive species: The issues concerning invasive species (including aliens) were reported from 30% of the projects, mainly those with a coastal element or where small island populations of protected species were involved. Many of the records were associated with predation on nesting birds. The oldest project, MARSILES, reports that the targeted bird populations' trends, according to reporting under the Birds Directive, is stable. Despite the relatively unchanged trends, a closer look at the local situation on the islands indicates that the underlying cause for success was the recession of the Yellow legged gull (*Larus michahellis*) populations as direct result of shutting down MARSILES' main operational landfill site upon which these predators used to feed. The BALTCOAST (LIFE05 NAT/D/000152) project is an excellent example of how these threats have been reduced and how good practice has been replicated in other projects (see Box 3).

Box 3 Measures to reduce bird predation – BALTCOAST, Germany

The role of predation of birds is a very sensitive topic with a huge impact on the survival of many coastal bird species (e.g. Pied avocet (*Recurvirostra avosetta*)) and seabirds, such as Little tern (*Sterna albifrons*) and Common tern (*Sterna hirunda*). The BALTCOAST project (LIFE05 NAT/D/000152) carried out:

- An international study on the impact of predation on threatened bird species
- Intense monitoring of predators through motion cameras
- Testing methods to protect birds (electric fences, artificial islands)
- Analysis of natural behaviour of colony breeders against predation.

The results were used for the development of the predation strategy for the whole region in 2018 and as a major input to the national strategy paper concerning predation of birds. The results were transferred to many other projects as well. Now it is common practice to tackle predation issues alongside habitat improvements – an approach inspired by the BALTCOAST project and now replicated in LIFE Limosa (LIFE11 NAT/DE/000353) and Better BirdLIFE (LIFE17 NAT/DK/000498).

7. Anchoring/mooring: Seabed damage caused by anchoring is a pressure reported by 30% of the projects and in most cases is a threat associated with seagrass meadows in the 20 ex-posted projects. In most projects the extent and scale of the problem is known, and the pressure is reduced through a combination of installation of mooring buoys and raising awareness among the user groups. Project Biomares (LIFE06 NAT/PT/0000192) adopted an Advanced Mooring System using a fixed anchor with a system of mooring line tensioners and swivels with a surface buoy that prevents damage from the mooring chains and lines on the seagrass. One of the best examples of adopting this approach was reported in the Life Posidonia Andalucia ex-post where mooring was a problem along the whole coast but especially in the Natura 2000 sites (SACs). The existing problem with the scuba diving clubs was satisfactorily solved thanks to the measures adopted during the project, although further efforts are required for the maintenance of the mooring buoys already installed. The problem today mostly concerns recreational vessels, whose number has significantly increased in the last decade. Specifically, the problem is partly due to the lack of awareness amongst the owners about the regulations and the negative impact that anchoring causes to the meadows, all of which is compounded with the lack of sufficient information campaigns and surveillance. The competent authorities are aware of this problem and they are looking for possible solutions. Conversely, in the LIFE RES MARIS (LIFE13 NAT/IT/000433) project in Italy, the placing of mooring buoys has decreased this pressure on the *Posidonia* beds. The impact is monitored by the staff of the MPA and they reported a positive response within the seagrass beds. The Coastguard, responsible for surveillance and control, checked 2,700 boats between 2016 and 2021 and issued no penalties for anchoring in the seagrass beds, a very positive outcome.

Box 4 Novel financing to reduce threats from moorings – Spain

In the frame of the LIFE Blue Natura (LIFE14 CCM/ES/000957), a project to install ecologically friendly mooring buoys in one of the most affected areas by mooring (Agua Amarga, Natura 2000 site Cabo de Gata-Níjar (ES0000046)) was financed through accessing *Posidonia* carbon credits in the CO₂ compensation markets. At the time of this ex-post assessment, the first project for the restoration of the habitat 1120* *Posidonia* meadows to be funded through these mechanisms was being drafted.

The evaluation of carbon stocks and flows was completed during the project and the elaboration of an Andalusian carbon credit certification standard, and a catalogue of carbon offset projects was launched by the Andalusian Government through the Climate Change Service in December 2021. The scheme has been developed under the auspices of the International Union for Conservation of Nature (IUCN) and represents a significant step forward in blue carbon offsetting. Anchoring damages the seagrass root system by undermining the integrity of the seagrass beds, resulting in significant losses. Once undermined, seagrasses can be further eroded by wind, waves, and tidal motion. The carbon storage potential of the seagrass, and the root mat in particular, is significant, and is lost as soon as the seagrasses are uprooted.



On a different note, in Greece, the CYCLADES Life project reports an increase in this pressure due to the prestige of the protected area attracting more scuba divers and visitors which leads to an increase in anchoring. In this case no mooring buoys were installed.

8. Other pressures: Most projects mentioned conflicting governance/stakeholders and lack of general awareness as key issues and there were many good examples of raising awareness, embracing key stakeholder groups and making them part of the solution instead of part of the problem. These issues are discussed further in section 3.3.3. Social media is often used as a tool to raise awareness, but in some cases, social networks can be counterproductive as the example in Box 5 highlights.

Box 5 Raising awareness via social networks – a cautionary note from Spain (Life Posidonia Andaluca (LIFE09 NAT/ES/000534))

Influencers informing their followers on the “best places to visit” and tourists eager to share photos/experiences in “exclusive” places (e.g. strictly protected areas) are creating increasing impacts and problems for the management of MPAs. The implementation of good dissemination campaigns for tourists regarding regulations and impacts of these activities, and the improvement of surveillance are suggested as measures to control this situation. In Cabo de Gata Nature Park, for instance, there is a local influencer with 20 000 followers who, on a daily basis, shares opinions on the best coves in the park, including those with difficult access (where rescue activities are rather complex) and low tourist pressure (and, hence, better conserved). Currently there are no legal tools to control this kind of activity in social media.

9. Emerging pressures: Not unreasonably, given the time span involved between the end of some projects and the ex-post assessment, some new threats have emerged that may not have been noted as issues at the time the project was proposed. In some projects with a significant coastal element like the German BALTCOAST project, new threats were identified as climate change and sea-level rise. In Sweden, the SAMBAH (LIFE08 NAT/S/000261) project identified the Harbour porpoise's (*Phocoena phocoena*) sensitive hearing leading to behavioural changes in response to very low levels of underwater noise pollution and pollutants such as polychlorinated biphenyls which are known to cause decreased fertility and impair immune responses in this species. Offshore wind farms are a growing phenomenon and an activity that is considered to generate different impacts such as underwater noise and marine bird collisions. These issues were recognised by the INDEMARES project and measures are included in their (as yet unadopted) management plans. The issue was recognised as a future threat by the ConShagAudMIBAGR project in Greece, see box for a more detailed account. Similarly, the CETACEOSMADEIRA II and DENOFLIT (LIFE09 NAT/LT/000234) projects, highlighted the potential threat posed by the emerging ‘blue economy’ activities like wind turbine farms and underwater

Box 6 Influencing the wind farm agenda in Greece – ConShagAudMIBAGR (LIFE07 NAT/GR/000285)

Following two years of advocacy and public pressure, the beneficiary Hellenic Ornithological Society (HOS), together with other NGOs, scientific and environmental bodies and the general public, succeeded in putting an end to construction plans involving the development of industrial-scale windfarms on 14 protected islets of the South Aegean. In May 2021, the General Director of Environmental Policy of the Greek Ministry of Environment and Energy finally rejected these unprecedented construction plans based on the multipage documentation prepared by HOS, which deconstructed the narrative set forth by the Environmental Impact Assessment (EIA) of the project.

Advice to Ministry of Environment for windfarm exclusion zones - the Hellenic Center for Marine Research and the Ministry of Environment has asked Nature Conservation Consultants (NCC Ltd.) and HOS to contribute to the national spatial planning for marine windfarms by proposing important exclusion zones. In order to provide this information, HOS analyses data from various sources, compiled from colony monitoring, telemetry, ringing, etc. from all seabird projects.

mining. Conversely, there is also emerging evidence that where fishing activities have been excluded within the footprints of these mega farms, biodiversity is increasing, and fish populations are recovering, presenting potential opportunities moving forward. Wind turbines were mentioned by the BLUEREEF project in Denmark, suggesting that the project best practice guidance could also be relevant for designing wind turbine bases to a more ecologically friendly footprint. They also note that there could be an opportunity to increase biodiversity by leaving bases in place rather than decommissioning them at the end of their life span. Project MARMONI (LIFE09 NAT/LV/000238) suggested a set of marine biodiversity indicators that could be useful in monitoring the impact from wind farms, at least in the Baltic states.

Only a handful of projects reported illegal fishing, noise, and climate disturbance as pressures and in most cases, these were not threats addressed by the projects.



*Contributing to the development of marine indicators to protect seabird populations vulnerable to fisheries by-catch
(MARMONI - LIFE09 NAT/LV/000238)*

3.2 Conservation Objectives

Setting conservation objectives was seen as an important step in management of MPAs and was raised at the first Marine Biogeographical Seminar in St Malo (see section 1.2.1.2). During the ex-post, the projects were asked about setting conservation objectives either for species or habitats within their MPA either during the lifetime of the project or afterwards. While some of the projects were not relevant (e.g. MARMONI – a project to establish a set of indicators), of the remaining projects only two appeared to have set conservation objectives at the site level. Setting site-specific conservation objectives (with relevant attributes and targets) is also a legal obligation under the Birds and Habitats Directives, to correctly reflect the contribution of the site to maintaining or reaching ‘favourable’ conservation status of the habitats and species concerned at the national, biogeographical or European level. The ex-post study found that while there were broad objectives set at the site level, the attributes or targets necessary to describe progress toward the overall objective were poorly expressed.

In Latvia, the DENOFLIT project set some very broad conservation objectives such as to ensure favourable habitat or to protect (*species*) populations in their wintering and staging sites and ensure ‘favourable’ conservation status, without actually quantifying what that might mean in relation to their ecological requirements. Apparently, the main obstacles for setting the site-specific conservation objectives are the lack of human resources and technical measures for the work in MPAs at the State Service of Protected Areas under the Ministry of Environment. The interviews held with the Ministry of Environment confirmed that the authorities are working on approving new format for setting the conservation objectives. However, specific timeline for when the conservation objectives can be established for the MPAs in question is not known. The authorities noted they rely on a strategic marine integrated project for the whole Baltic Sea that will be initiated or is being initiated by Baltic Marine Environment Protection Commission (HELCOM) secretariat, to set quantitative conservation objectives. In Estonia, the BALTIC MPAs (LIFE05 NAT/LV/000100) project noted that the overall conservation objective was for the concerned habitats to remain in ‘favourable’ conservation status and for species to maintain the

Box 7 Setting site level conservation objectives – a LIFE lesson from Greece

Although the Greek project ConShagAudMIBAGR (LIFE07 NAT/GR/000285) did not set any site level conservation objectives, the ex-post study revealed that this was not an unusual circumstance and that in 2019 Greece was referred to the EU Court of Justice over its failure to protect natural habitats and species adequately, i.e. to specify conservation objectives and measures for the Natura 2000 network as a whole. On 17 December 2020, and following the initiation of a second infringement case (2014/2260), the Court found (case C-849/19) that Greece breached EU law by not having established the proper conservation objectives and measures for all sites designated as SACs. In order to comply with this ruling, Greece will need to establish adequate conservation objectives and measures for all SACs, according to the requirements of Article 6(3) of the Habitats Directive. The setting up of conservation measures and objectives will provide with adequate tools to carry out an appropriate assessment of the project's impacts on a given Natura 2000 site. The Greek administration's plan is now to complete site-specific conservation objectives by mid-2022 in conjunction with management plans for SACs and SPAs through the LIFE IP 4Natura (LIFE16 IPE/GR/000002) project.

necessary feeding and resting habitats and minimize negative impacts; for some species also maintaining or increasing current numbers.

Other projects have adopted a similar approach as the conservation objectives are being established under national strategies. Project BLUEREEF in Denmark noted that the setting of quality targets will be made as part of the national marine strategy to be elaborated by the Ministry of Environment but that the target for 1170 Reefs, where an assessment of the condition has not already been made, is 'favourable' conservation status. In Malta, the BaHAR for NZK (LIFE12 NAT/MT/000845) project noted a series of general objectives (not related to specific habitats or species) have been drafted for Maltese MPAs.

Project MARSILES noted that the primary objective of the LIFE project was the conservation of several seabird species of community interest, namely the Cory's shearwater (*Calonectris Diomedea*), the European shag (*Gulosus aristotelis*) and, to a lesser extent, the Yelkouan shearwater (*Puffinus yelkouan*). These three species show a stable trend on a national basis but specific conservation objectives for the island populations was not, and still has not, been addressed.

The Italian project LIFE RES MARIS which set out to reduce anthropogenic pressures and invasive alien species on 1120* *Posidonia* meadows and restore some damaged areas, included specific targets at the site level. These included installation of 31 mooring buoys and restoration of 0.1 ha of habitat through transplanting. According to the ex-post assessment, these targets were achieved in the areas where seagrass was transplanted on previously damaged seagrass areas (see also section 3.3.1.1).

The SAMBAH project was set up to increase knowledge about the Harbour porpoise in the Baltic Sea and to improve their conservation, including in Natura 2000 sites. The ex-post study concluded that the project facilitated the legislative decisions to designate the main breeding area in the Baltic Sea as a Natura 2000 site for the species. Sweden holds the largest population of this species within its Exclusive Economic Zone (EEZ) and the Swedish Species Action Plan for the Harbour Porpoise (2021-2025) sets the long-term target (until 2040) to ensure that conditions in Swedish waters enable the overall population to reach 80% of their biocapacity over the next 100 years. These were direct outcomes of the project and considered an excellent achievement. The project was also a major factor in establishing the mortality thresholds for the species. For the time being, this means that human-induced mortality should not exceed mortality thresholds established by HELCOM/OSPAR³⁰ for the North Sea and Belt Sea populations. For the Baltic Proper population, human induced mortality should be zero until 'favourable' conservation status is reached and after it has been reached, human induced mortality must not exceed the population's mortality threshold. The data from the project was instrumental in

30 OSPAR is the mechanism by which 15 Governments and the EU cooperate to protect the marine environment of the North-East Atlantic. For more information, see <https://www.ospar.org>

setting these thresholds. The ex-post noted that the Swedish action plans for threatened species or habitats are not legally binding but serve as guidelines to achieve defined conservation goals and to help reach compliance with the Habitats Directive. It should be noted that there is an ongoing infringement against Sweden for the lack of measures to monitor by-catch of the Harbour porpoise and to take appropriate preventive measures.

3.3 Conservation Measures

3.3.1 Restoration

Restoration is one of the most effective ways of improving degraded habitats in terrestrial environments. However, restoration techniques in the marine environment lag far behind developments in the terrestrial sphere and so not all the ex-posted projects used restoration as a conservation measure. Of the 20 projects assessed, only 6 had any active restoration actions, and these were associated with the following three habitat types, two of which are priority habitats.

3.3.1.1 1120* *Posidonia* Meadows

Physical restoration of *Posidonia* beds has been attempted in some cases with varying degrees of success but never on a large scale. In the LIFE RES MARIS project, transplantation of *Posidonia oceanica* shoots and restoration of damaged patches of *Posidonia* beds was carried out on 0.1 ha (survival rate assessed at around 80% at the end of the project in 2018). The AfterLIFE survival rate was assessed around 46% in 2020 and around 42% in 2021 during the last (third) monitoring session. Three explanations were given by the MPA's staff: the plants died because of reduced viability of the transplanted shoots; the shoots died because they did not take root



Transplanting *Posidonia oceanica* shoots to restore damaged patches of seagrass beds in shallow coastal waters around Sardinia (LIFE RES MARIS - LIFE13 NAT/IT/000433)

for some reason; the plants were uprooted through seabed forces (wind, tide and waves). The associated beneficiary (Marine Protected Area of Capo Carbonara) stated the result is satisfactory anyway and comparable to other case studies done in Mediterranean Sea. Only one method was trialled, transplantation is more labour intensive than broadcast seed dispersal, but is likely to have greater survivorship in the short term at least.

Another common technique employed in terrestrial environments is the removal of invasive species and there is a well-documented threat to *Posidonia* meadows from the invasive green algae species *Caulerpa* spp. The project LIFE RES MARIS removed *Caulerpa* spp. using both manual and experimental techniques from an area of around 18 ha of seabed. However, there was no subsequent monitoring of the success rate and long-term studies suggest that the removal of *Caulerpa* spp. by hand will not result in total eradication although partial eradication may be possible.

3.3.1.2 1150* Coastal Lagoons

The BALTCOAST project did not carry out any restoration of marine habitats but did carry out work in coastal lagoons. In fact, a basic principle of the BALTCOAST project was to assess in detail the hydrology of the site and to develop site-specific management approaches, combining hydrology, land use options, ecological requirements of target species and the historical development of the respective site. The solutions are therefore always site-specific and have to consider various legal and other restrictions (e.g. flood protection, private land ownership, land use restrictions and legal restrictions) as well. The experiences made in the BALTCOAST projects were applied to restore various other lagoons along the Baltic coast, e.g.:

- Geltinger Birk, Germany (restoration of coastal lagoons through water management and rewetting, combined with low-intense grazing)
- Sehlendorfer Binnensee, Germany (restoration of the lagoon as part of the LIFE project Better BirdLIFE (LIFE17 NAT/DK/000498))
- Glydensteen strand, Denmark (large-scale coastal realignment project with coastal lagoons helping to act as buffer against sea level rise)
- Creation of larger wetlands in Knudshoved Odde (Denmark), within the LIFE Clima-Bombina (LIFE18 NAT/DK/000732) project.

However, these examples are still relatively small-scale solutions and limited to relatively few sites, mainly due to the complexity of the issue, the low availability of land for large-scale solutions, the intense competition of various usages along the coast (especially tourism and coastal defence) and the lack of opportunities to increase morpho- and hydrodynamic conditions on coastal habitats.

3.3.1.3 1170 Reefs

The Danish project BLUREEF took a novel approach during rebuilding of marine cavernous boulder reefs in the Kattegat. The project team gathered extensive physical, chemical and biological information which was used to develop a physical model – to simulate how the reconstructed boulder reef would behave under extreme waves and tidal regimes and to ensure that the design of the boulder reef could withstand even extreme events. In addition, the project developed a mathematical model to show that the placement of the structure would not have an impact on water flow and water quality on ecosystems downstream. This level of preparation, coupled with very careful site selection, ensured that the reef was placed in the optimum location. As a result, the new reef is extremely stable and will not move or degrade. Progress in recolonisation is shown in Figure 5. The monitoring programme revealed:

- Extensive colonisation after 4 years with increase in biodiversity of the macro algal vegetation and bottom fauna of approximately 6 and 3-ton ash free biomass respectively; the cod increased on average 3-6 fold in the reef area.

Figure 5:
The evolution of the
boulder reef restoration
in the Kattegat by the
BLUEREEF (LIFE06 NAT/
DK/000159) project

- Restored reef has proved to have an instant and positive effect on Harbour porpoise in the area. The porpoises occurred more often and also for longer periods of time and likely as a result of increased amount of prey.

Frequent visits to the reef in the years 2013 to 2021 by the Aarhus University (an associated beneficiary) scientists show that the increase in biomass continues and the species diversity is increasing.



Placement of boulders



Boulder reef after placement



Boulder reef after 4 years

No restoration of habitats was undertaken by the MARSILES project. However, after the project, 400 artificial reefs of 6 different types have been installed over a 200 ha area in the buffer zone of the Calanques National Park MPA. The buffer zone benefits from strict protection measures excluding any professional or leisure activities.

In order to study the results after 10 years of immersion of the Prado reefs, monitoring campaigns were carried out between 2019 and 2021. These results, eagerly awaited by the scientific community and the manager, showed that the biomass of the target fish species has increased significantly, particularly from autumn 2015 and into 2020.

3.3.1.4 Other Seagrass Species (1110 Sandbanks which are slightly covered by sea water all the time)

The Biomares project in Portugal was one of the first projects where the main goal was the restoration of an existing seagrass area. The seagrass area in the 1980s was estimated to cover 30 ha but this had been reduced to a patch of 0.006 ha in 2006. The seagrass restoration operation consisted of seed distribution and re-planting of three seagrass species; Eelgrass (*Zostera marina*), Dwarf eelgrass (*Zostera noltii*) and Slender seagrass (*Cymodocea nodosa*). Between 2007 and 2010, 62 plots of seagrasses, with a total of 2 460 planting units (5 276 plant sods), were created and distributed along 7 ha of the target area. Although good results were reported initially, the seagrass restoration task did not achieve the expected success due to several natural constraints, mainly the southern storms and intensive herbivory. Thus, at the end of the project, the beneficiaries reported the destruction of almost all planted plots.

However, during the post-LIFE monitoring works in 2011, it was found that one of the transplanted plots of Eelgrass had recovered, representing about 0.0011 ha. While this may seem surprising, recent studies in Australia have shown that the largest seagrass area in the world in Shark Bay, which now covers over 200 km², has originated from a single plant over a period of 4 500 years. If conditions are favourable, even remnant seagrass beds can regenerate. Further successes were recorded in October 2016, where the one plot had increased almost 9 times covering an area of 0.009 ha, with healthy densities of 450 plants/m². During 2020 there was an increased use of the area for recreation (an activity allowed within the SAC). This resulted in anchor damage within the restored beds as there were no mooring systems in place for recreational vessels. Arguably, this is a case where the required infrastructure (moorings) did not keep pace with unexpected results post-project; assuming that there were sufficient financial resources to install such infrastructure. The resulting fragmentation had reduced the total area occupied by Eelgrass from 7 ha in 2010 to 0.0226 ha in March 2021.

3.3.2 Strictly Protected Areas

As the Biodiversity Strategy for 2030 set the target of protecting 10% of EU seas by strictly protected areas by 2030, the ex-post assessments tried to understand what progress, if any, had been made towards this target. This included possible designations outside the scope of the original project but where the project may have acted as a catalyst for further action. As with other measures, not all projects contributed to this category, seven out of the twenty ex-posts mentioned some kind of (more) strictly protected area associated with the project. It is appreciated that not all these examples qualify as 'strictly protected' but they all have a level of protection that exceeds that in place for other MPAs nationally. These partial protections normally concern restricting fishing activities, which in many cases represent the main pressure especially in offshore MPAs. Provided there are no other pressures or threats within the area, then restricting fisheries may be sufficient to qualify as strictly protected areas. The MPA Guide (2021³¹) provided insight into the levels of protection that derive the most benefits. These are highly/fully protected and implemented/actively managed areas. There were few examples of MPAs where all activities were excluded except for research. While desirable, it seems very unlikely that the 10% will be met using only this type of very strict measure. From the information presented, it was clear that the 'no-take zone' approach which allows limited access to resources may be the most effective way of complying with 10%. Clearly, in some cases cited below, there is still more work to do, but given that only 0.06% of MPAs in the Mediterranean, and 0.02% of MPAs in the OSPAR region are fully protected against extractive activities³², these examples could be considered as working towards stricter protection.

Note that this synthesis does not attempt to assess the current status of strictly protected marine areas in any of the Member States.

3.3.2.1 Mediterranean Biogeographical Region

In Greece, the CYCLADES Life project reported that the only area that was strictly protected in the MPA was the north-western part of the island, which is a terrestrial part and protects the Mediterranean monk seal (*Monachus monachus*) caves on the beaches. In this terrestrial zone, no activities apart from scientific research and activities related to the protection of the species/habitats are allowed. The marine zone adjacent to the breeding caves was initially intended to be a fisheries restricted zone. However, in practice, the authorities found it difficult to control fishing activities to the restrictions issued under the permitting system. As a result, the authorities decided to put into effect a complete ban on all fishing and so today it has practically, although not legally, become a temporary 'no-take zone'. The 'no-take zone' was reviewed in 2022, although the Ministry of Environment and Energy was under pressure from the fishing sector to remove the 'no-take zone' status and re-instate the controlled fishing zone. However, the case made national press and after significant protest, the Ministry elected to reinstate the 'no-take zone' status for further 2 years³³, establishing a total ban on fishing in the protected zones of Gyaros until July 2024.

As stated by Mr. Georgios Amyras, Deputy Minister of Environment and Energy, after the signing of the relevant ministerial decision, *"the model of the Sea area of Gyaros, proves that the protection regime is bearing fruit. The increase in marine biodiversity in the region is encouraging. We give a new extension to the protection regime and we completely prohibit fishing in Gyaros, after the registration of intense fishing activities in the area. For every species of biodiversity we protect, for every ecosystem we clean up, we are achieving a significant victory against the climate crisis."* He went on to remark *"that the sea area within a radius of three nautical miles around Gyaros, has been declared protected since 2019, while at the same time a systematic study of marine biodiversity is being carried out in the framework of the European project "LIFE".*

31 <https://mpa-guide.protectedplanet.net/>

32 EU LIFE Platform on Marine Protected Areas, La Rochelle, France, March 2022.

33 <https://www.skai.gr/news/environment/gyaros-apagorevtyke-katholika-i-alieia>

In Greece, the only other 'no-take zone' designated for biodiversity protection is in the Piperi islet, in the National Marine Park of Alonissos and Northern Sporades.

In Spain, the Life Posidonia Andalucia project reported that some of the areas in the SACs, Cabo de Gata-Níjar and Acantilados de Maro-Cerro Gordo, are considered as of "restricted" use. Their corresponding management plans (Natural Resources Management Plan, Master Plan for Use and Management) specify the restrictions that applies to these reserves, where an attempt is made to carry out a stricter surveillance. Also, beacons have been installed to mark the limits of these areas, although they are not always respected due to lack of enough awareness and surveillance.

In the wider Spanish context, the INDEMARES project notes, the only areas where activities are more strictly controlled in the project's Sites of Community Importance (SCIs) are those defined in the Marine Reserves of Fisheries Interest³⁴ that overlaps with them. The success of these MPAs³⁵ is linked to the active involvement of the fisheries sector in their management, the existence of a zoning that include a fishing exclusion reserve area, the availability of sufficient means to carry out adequate surveillance and monitoring, and the implementation of permanent dissemination campaigns. However, other potentially damaging activities for habitats and species are not universally controlled and as such these areas are not strictly protected in cases where other pressures/threats still operate. The potential value of 'no-take zones' contributing to the 10% of strictly protected areas needs to be recognised where appropriate.

Box 8 Policy conflict - nature versus fisheries – BLUREEF shows the way

Project BLUREEF (LIFE06 NAT/DK/000159) made an important contribution to the regulation of fisheries, i.e. the introduction of a trawling ban in Natura 2000 sites in Denmark. While the restoration of the boulder reef has been hugely successful and other initiatives have followed, a barrier for further initiatives could result from the limitations for national authorities to designate zones of fishing restrictions due to the inherent difficulties of the applicable framework under the EU common fisheries policy (CFP). Under relevant CFP rules (Article 11 of Regulation 1380/2013), if another Member State has a fishing interest within an area (such as Natura 2000 site) then they must be consulted over any fishing restrictions that might be considered important nationally to comply with environmental legislation, which often leads to long delays in adoption of measures and/or adoption of weak measures. This of course applies to all Member States in all biogeographical regions.

³⁴ Marine reserves constitute a specific measure that contributes to achieving a sustained exploitation of resources of fishing interest, establishing specific protection measures in delimited areas of traditional fishing grounds. These areas, in whose selection their state of conservation is taken into account, must meet certain characteristics that allow the improvement of the reproduction conditions of the species of fishing interest and the survival of their juvenile forms.

³⁵ <https://www.sciencedirect.com/science/article/abs/pii/S0006320716303615>

In the Italian LIFE RES MARIS project, the MPA was subdivided into three zones and with different levels of restrictions put in place in all of them. In the Zone A, a very restricted area called in Italian “zona integrale”, navigation, anchoring, mooring, recreational and professional fishing are forbidden.

Within the heart of the MARSILES MPA, seven locations, amounting to 10.6% of the 43 500 ha surface, are under particularly stringent protection measures, including the prohibition of all kinds of fishing activities, traffic of motorboats, mooring, anchoring (depending on the boat's size), scuba diving and reduced navigation speed limits. Restrictions aside, there are no special management prescriptions that apply to these perimeters³⁶. The seven ‘no-take zones’ were selected for their particular topography, biodiversity interest and regeneration potential of fish stocks, based on the map of marine habitats produced from 2010 to 2013 in the framework of the DONIA Expert CARTHAM programmes. The presence of physical seamarks was specifically requested in 2014 by the fishers’ community. Experience has shown that they also facilitate site surveillance by the local police. On shore, complementary information boards also warn of the existence of those ‘no-take zones’ and the restrictions it entails. Two of the sites were formally part of the LIFE project.



A Mediterranean monk seal pup in Gyaros island (CYCLADES Life - LIFE12 NAT/GR/000688)

³⁶ Article 11 of the ministerial decree n° 2012-507 details all the activities that are prohibited within the ‘no-take zones’. The 200 ha constituting the implementation site of the 2015-2019 Récifs Prado project are located outside of the heart of the Calanques National Park, and are therefore not governed by the same legislation. The prefectural decree that formerly ensured their protection expired on 31 December 2019.

3.3.2.2 Atlantic Biogeographical Region

Perhaps the most impressive evolution in relation to strictly protected areas comes from the Portuguese Biomares project. Here the MPA zoning was established to harmonize the region's biodiversity and its ecological importance with the important socio-economic activities that take place in the area. For the commercial fishing, the restrictions were gradually implemented: in August 2006, two partial protection areas were implemented, and in August 2007 four more were created. In August 2008, one partial protection area was upgraded to total protection. The last implementation step occurred in August 2009, with the enlargement of the previous total protection area that now attains nearly 10% of the total MPA.

3.3.2.3 Baltic Biogeographical Region

Concerning the BLUREEF project in Denmark, while the reef does not enjoy strict protection in the legal sense, the site is protected under fishing regulations which have imposed a fishing ban in Natura 2000 sites. The site is not protected from diving and other recreational activities like boating, which are permitted, however the currents are so strong around the reef that in practice no one uses the area and so it is effectively strictly protected.

3.3.3 SAC/SPA Designation

In most cases the ex-posted projects operated within previously designated SACs/SPAs. Some of the earlier projects, such as MARSILES in southern France, contributed to the expansion of the Natura 2000 network. In 2002, there was a proposition to the EC for the classification as SCI, which enabled the implementation of this LIFE Nature project, and which would eventually result in the designation of a SAC in 2014 (FR9301602, widely extended in 2008 to cover what is currently known as the Calanques MPA but not designated until 2014) and SPA in 2018 (FR9312007). Data collected during the original project remains to this day, one of the main contributions to the ecological surveys that were used in the definition of the SAC and SPA's management plans. Unfortunately, as the former Natura 2000 seaward perimeters, set out in 2003, were based on a 500-meter buffer applied to the shorelines, these management plans do not encompass the 2008 extension to the much wider offshore area. Those marine habitats, although thereafter included in the heart of the Calanques National Park, are still to this day not under proper ecological management, except for the regulatory framework provided by the National Park itself and the Natura 2000 status.

Some good examples of a project leading to designation of additional marine Natura 2000 sites can be found in a number of ex-posted projects. In Portugal, the CETACEOSMADEIRA II project formally proposed the Cetáceos da Madeira³⁷ SCI in October 2016, officially approved in 2017. It should be noted that the limits of the current SCI do not exactly match to those proposed during the LIFE project, as they exclude waters within 1 mile of shore. None of the experts and technician consulted consider this a problem for the protection of the cetaceans since the whale watching regulations in force apply for these areas. Also in Portugal, the MarPro project legally approved two new marine SPAs and extended two existing SPAs in 2015, followed by one new marine SCI and extension of an existing SCI in 2019. In Lithuania, DENOFLIT project designated two new marine Natura 2000 sites as a result of project activities, one SPA and two SCIs. Project POSEIDONE in Italy reported that the two SCIs where the project intervened were not included in an MPA or under any kind of protection at the time of the project but were upgraded to SACs in 2019.

37 <https://natura2000.eea.europa.eu/>

Box 9 Marine Natura 2000 expansion – LIFE BaHAR

Through the LIFE BaHAR for N2K (LIFE12 NAT/MT/000845) project, 3 existing offshore Natura 2000 SCIs and MPAs, designated for turtles and cetaceans through the LIFE Migrate Project (LIFE11 NAT/MT/1070), and 3 inshore Natura 2000 SCI MPAs (designated for Annex I habitats of the Habitats Directive), were extended. This extension added 39 276 ha to Malta's Natura 2000 MPA network. Additionally, 2 new Natura 2000 SCI MPAs were designated, adding further 30 848 ha to the Malta's Natura 2000 MPA network. The LIFE BaHAR for N2K project designated in the end additional 70 124 ha of marine Natura 2000 sites/MPAs in Malta's Fisheries Management Zone. The sites were declared through G.N. 682 of 2018 - Declaration of SACs - International Importance & SPAs, and included in the Natura 2000 network through Commission Implementing Decision (EU) 2020/96.

To date, Malta has designated a total of 18 MPAs, all part of the Natura 2000 network. The main target of the AfterLIFE plan of LIFE BaHAR for N2K project was then to have conservation measures for all of Malta's marine Natura 2000/MPAs in place by 31 December 2019. The Environment and Resources Authority is currently in the process of defining the objectives and measures for the management of these sites.

In this regard, the Authority is considering input from the general public, organisations and interested stakeholders, which had already actively participated in the LIFE BaHAR for N2K process.

Proposed designations do not always go according to plan. The SIMARINE-NATURA (LIFE 10 NAT/SI/000141) project in Slovenia set out to expand the existing SPA network to protect Mediterranean shag (*Phalacrocorax aristotelis desmarestii*) populations in the Gulf of Trieste. While the terrestrial habitat, which covers breeding and roosting sites, is well served by three SPAs, the project wanted to establish an additional SPA in the open sea to protect the offshore feeding grounds. The proposed designation was based on previously identified IBA. The project closed in 2016 and the main project outcome, the designation of this new offshore SPA, has yet to be realised. The ex-post evaluation revealed several reasons why the Ministry of the Environment and Spatial Planning has not progressed the SPA. The first issue surrounds a challenge concerning the coherency of the SPA, that Slovenia considers should be a transboundary one, at least with Italy. Contacts with the Italian Ministry for Environment, Land and Sea Protection elicited a response (based on the expert opinion of the Italian Institute for Environmental Protection and Research), that there were sufficient coastal designations in the Italian and Slovenian Gulf of Trieste for the Mediterranean shag. They further claimed that feeding areas are mainly coastal and that there was a low density of shags in the offshore Gulf of Trieste. Based on these opinions, the Slovenian authorities withdrew their support for declaring a new SPA. The opinions were challenged by BirdLIFE Slovenia (coordinating beneficiary of SIMARINE-NATURA project) and other stakeholders based on data collected by them. The situation remains unresolved and in 2021 the EC launched a formal infringement procedure due to non-designation of the offshore SPA for Mediterranean shag³⁸ (infringement no 2021/2068), based on the Slovenian Ministry's proposal in 2016 and 2017. While neither the content of the letter to the Ministry, nor the Ministry's response is public, a public statement made by the Ministry on 7 October 2021 provided the following response '*on the basis of expert facts, the IBAs in the Central Gulf of Trieste are based on a misapplication of ornithological data*' and the Ministry therefore '*assumes the discretion not to designate the area as an SPA*'.

38 <https://www.iusinfo.si/medijsko-sredisce/dnevne-novice/284481>



*Using marine technology to explore the potential for establishing a marine protected area network in Malta
(LIFE BaMAR for N2K - LIFE12 NAT/MT/000845)*

3.3.4 Community/Stakeholder Engagement

Engagement with stakeholders was a key activity in all projects which continued into the AfterLIFE period and often beyond. Common stakeholder interactions across the projects were with the fishing, tourism and recreation communities.

The MarPro project in Portugal focussed on actions to protect cetaceans and seabirds within the Natura 2000 network. During the project implementation, the involvement of different stakeholders alongside the project execution was a keystone to ensure success. They engaged with fishers, the maritime authorities and ocean users in general to report cetacean strandings. Fishermen were also involved in the trials of alternative fishing gears to mitigate by-catch which led to the Good Practice Manuals and Code. The link to financial sustainability was seen as crucial to the success of collaboration with the fishing community. They also noted that maintained support after the project is critical to achieve a sustained involvement of fishermen in the long-term.

Further from Portugal, during the project execution and post-project periods, the beneficiaries were able to involve all LIFE Berlingas stakeholders in the efforts to overcome potential threats for the SPA management. Thus, local fishermen participated directly in the search for solutions for the over-exploitation trend and for the high interaction levels registered between fishing and seabirds. To tackle this problem, most of the fishing fleet operating within the target SPA have been monitored to assess by-catch and mitigation measures for this problem have been tested in vessels operating with different gears. Currently, fishermen continue to use some of the tested solutions and mentioned that higher support is necessary to increase their use (more devices should be made available). Given that the project was assessed only

2 years after closure, it is perhaps understandable that engagement is still high. However, as the MarPro project demonstrates, if the fishermen are not supported financially to continue to use the alternative methods, it is uncertain how long their enthusiasm for conservation will remain.



Towards a better understanding of seabird movements at sea – tracking Mediterranean shags with GSM logger devices (LIFE Berlangas - LIFE13 NAT/PT/000458)

In contrast, Biomares, a project about the restoration and management of biodiversity in an existing marine park, sadly showed that because there was never real involvement of the stakeholders in the management of the park, there remains to this day a poor relationship between stakeholders and local authorities with the MPA management entity. Fishermen and tourism operators expressed a desire during the ex-post assessment to participate more directly in the management of the MPA.

The importance of continuity is emphasised by the Life Posidonia Andalusia project in Spain. The project reported that huge effort was done during the project to disseminate the value of the *Posidonia* meadows and to engage the local community and stakeholders in their conservation (e.g. through the development of participatory processes for the elaboration of the management plans, by means of the creation of the volunteer divers POSIMED network), which led to the creation of a social positive momentum for the conservation of this habitat. After the end of the Life Posidonia Andalusia project, these efforts, including the POSIMED network, were sustained via LIFE Blue Natura (LIFE14 CCM/ES/000957) until 2016.

The purpose of the CYCLADES Life project in Greece, that was implemented from 2013 to 2018, was to improve the status of the Mediterranean monk seal and they adopted a novel approach to stakeholder engagement. The project adopted a co-management approach to designing the MPA zoning system and conservation measures, but the innovation came through

the engagement of professional mediators to activate a consensus decision-making process. This meant that the discussions regarding the measures had to be agreed by every participant (no one could veto) and during the discussions any disagreements were resolved on the spot. Also, according to experienced members of the Co-management Committee, what made a difference was that the local community drafted the measures in the MPA and no external consultant or scientific body/consortium was outsourced to do a large study. This was the first attempt in Greece of the implementation of the co-management and ecosystem-based management approach in practice.

A good example of communications after the project comes from the SAMBAH project, where during the ex-post assessment, it became clear that a lot is being done by different parties that were not involved in the original project to improve conditions for the Harbour porpoise in the Baltic. Many of the recommendations and conclusions made by the project have now been championed by the Baltic Sea Fisheries Forum (BALTFISH) and the Coalition Clean Baltic (CCB), who are not only political activists, but are also trying to secure future funding from the European Maritime, Fisheries and Aquaculture Fund (EMFAF) to test alternatives to gillnets and compensate fishermen for possible reduction of their activities where fishing with gillnets overlaps with Harbour porpoise habitats and natural ranges.

In the SIMARINE-NATURA project in Slovenia, the beneficiaries reported that the fishing community was not averse to the conservation actions associated with the Mediterranean shag as they did not see them as a competitor. Instead, the mariculture sector raised issues associated with birds using the SPA marker buoys as roosts and their excrement fouling the mariculture ponds with subsequent human health implications. Following consultation, the buoy design was changed to discourage them from roosting.

An interesting observation comes from the MARSILES project, which closed 14 years prior to the ex-post and so was unlikely to have any original stakeholders left who were involved in improving the conservation status of the bird populations on two of the islands in the archipelago, Frioul and Rioul. Set against a backdrop of sometimes intense tourism pressure on these easily accessible islands, a new project LIFE HABITATS CALANQUES (LIFE16 NAT/FR/000593) is making some progress towards involving the general public in nature conservation. Latest events have however demonstrated that the impact of mass tourism³⁹, especially in post-COVID-19 times, outweighs by far the emerging enthusiasm of the local population.

Another tourism related project was CETACEOSMADEIRA II, a project to identify critical marine areas for Common bottlenose dolphins in the Madeira archipelago. In this project, the development of an agreed code of conduct with the whale watching sector was essential to effectively develop a regulation that is feasible to be implemented in practice, and to make it easier for the sector to accept its implementation. This fact takes on a special importance today due to the absence of appropriate surveillance mechanisms, which means that the responsibility for the correct application of the regulation rests fundamentally on the will and capacity of these companies.

Few projects mentioned the role of volunteers. In the ConShagAudMIBAGR project in Greece, HOS established a network of some 200 IBA caretakers throughout the country at IBA sites, some of which are marine IBAs. These are local volunteers who monitor species and disseminate information as well as observe and notify authorities of illegal actions. These local volunteers are still observing and disseminating information. The Biomares project also noted that two volunteer programmes were launched to monitor the seagrass meadows and the presence of a sea bream which predates on seagrasses. These volunteer programmes operated through Facebook but it is not certain whether they are still operational. Also, in Portugal, the LIFE

³⁹ Reports from 2014 highlight the need to acquire data on tourist numbers in marine areas by areal monitoring. There is however no evidence of the existence of such data today. GPS data would only offer a biased estimate, as it would exclude all clandestine ships. Meanwhile, the number of tourists inland is reported to have increased by 300% over the 2012-2020 period.

Berlengas project involved a large number of volunteers in monitoring and conservation actions executed during the post-project period and engagement with tourists. This was part of the LIFE Volunteer Escapes – Volunteer with Solidarity Corps for Activities in Portugal with Ecological Sense (LIFE17 ESC/PT/000003), the project ended on 30 June 2021 and the current status of the volunteer programme is unknown.

At the national level, we would expect to see a wide range of stakeholders involved in designation of all forms of MPAs. Both the BALTIC MPAs and DENOFLIT projects reported extensive consultation with concerned stakeholder groups. Indeed, the BALTIC MPAs project (2005–2009) was the first such experience in raising discussion on marine protection issues in Latvia. Subsequently, DENOFLIT launched an even more comprehensive approach as according to national (Latvian) legislation, establishment of protected areas process involves negotiation phase with all relevant stakeholders, including wind farm developers, fishery sector, shipping authorities, etc. During the designation process, a local advisory board was set up and proved to be useful in clarifying data interpretation aspects needed from inventory experts during the site designation procedure. It also served as a useful dialogue platform in completing the site designation documents.



Andouin's gull equipped with tracking devices provide valuable information for understanding seabird behaviour and the delineation of Marine Important Bird Areas in Greece (ConShagAudMIBAGR - LIFE07 NAT/GR/000285)

3.4 Management

3.4.1 Management Plans

Management plans are a fundamental tool for ensuring effective implementation of measures designed to improve the conservation status of habitats and species. Yet a surprising number of MPAs appear to operate without a management plan that has been approved by the relevant authority. In many cases, the effectiveness of the management measures is greatly enhanced if some of the main threats are addressed and removed. Indeed, in some cases this is sufficient to bring about an improvement in the targeted habitats and/or species, provided it is accompanied by effective monitoring.

3.4.1.1 Baltic Biogeographical Region

During the BALTIC MPAs project, management plans were prepared for 2 MPAs each in Latvia, Lithuania and Estonia. The plans were formally adopted in Latvia and Estonia but not in Lithuania, although importantly, the recommended measures were implemented. In Latvia, the management plans, which were in force until 2018, are being revised under the auspices of the LIFE REEF (LIFE19 NAT/LV/000973), and anticipated for adoption by 2025. The first assessment results show that most of the foreseen activities are implemented to full extent or partly. All the foreseen measures for ensuring protection of species and habitats are established. Also, the system for monitoring of nature assets and ecological quality of MPAs is established and implemented by the Latvian Institute of Aquatic Ecology (also associated beneficiary in the LIFE REEF project) as a part of the national environmental monitoring programme. The major shortcomings in implementation of the management plans are related to the establishment of the governance system for the MPAs. In Estonia, the management plans were in force until 2022 and a revision is planned soon. Protection of species and habitats is also ensured by the EIA and Natura 2000 assessment of the economic activities planned in or in the vicinity of MPAs, which are carried out quite thoroughly. Although there are no plans to revise or adopt the plans in Lithuania, the implementation of the measures (e.g., preventing effects from new human activities – wind energy parks, sand extraction, beach nourishment) was ensured through establishment of MPAs, maritime spatial planning, EIA studies, as well as measures for implementation of Water Framework Directive and MSFD. Also, the monitoring of reef status is implemented (methodology is being updated currently) and irregular monitoring of wintering birds and reduction of bird by-catch is performed (pilot projects on methods). The MPAs in Lithuania are officially governed by the State Service for Protected Areas under the Ministry of Environment, that delegate part of functions to administration of regional/national parks functioning under their jurisdiction. These administrations mainly manage terrestrial parts, and therefore have limited resources for protecting MPAs.

Furthermore, the DENOFLIT project, which identified two additional marine Natura 2000 sites offshore in the Lithuanian EEZ, did not succeed in developing the management plans as foreseen in the AfterLIFE plan approaching 7 years after project closed. According to the national responsible institutions, this is not considered as a key concern and/or priority as the areas are offshore and provisions of both established MPAs are already defined by individual regulations. It appears that the responsible institutions consider that the conservation of habitats and species is ensured through the application of other measures such as the EIA of newly planned economic activities. Meanwhile, the measures set out in the AfterLIFE plan appear to have no current means of implementation.

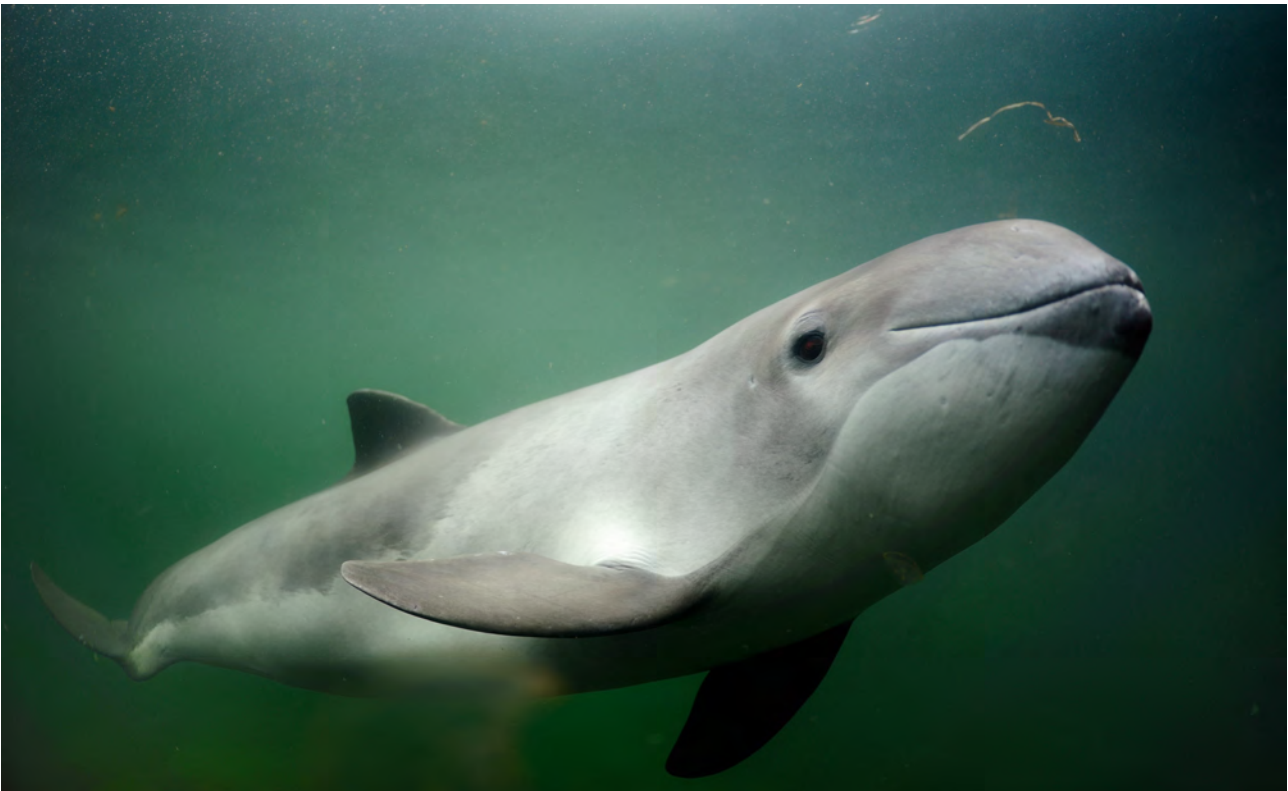
In Finland, the FINMARINET project was not designed to develop management plans as part of the project, but data collected during the project was used as background material for the production of Finland's first marine management plans, released in 2020 and 2021 (including underwater habitats) under the CoastNet LIFE (LIFE17 NAT/FI/000544) project. Furthermore, there are still several areas within marine management in Finnish waters that need further strengthening. To ensure proper management and expansion of the MPAs and further development of the Finnish Inventory Programme for the Underwater Marine Environment (VELMU), a

marine LIFE-IP BIODIVERSEA (LIFE20 IPE/FI/000020) has recently been approved. The project will especially be focusing on expansion of the knowledge base, identification of anthropogenic pressures in the marine area, clarification of the roles of authorities and actors involved in marine management, restoration, and expansion of the MPA network, sustainable use of marine resources, and integration and mainstreaming of protection of marine biodiversity into other sectors and financing programmes.

The BALTCOAST project prepared site-specific management plans for all but one project site. These plans were used for the preparation of the Natura 2000 management plans (mainly for the non-marine sites). All the main elements of the site-specific management plans have been incorporated in the Natura 2000 management plans. However, while there is much to be commended there are still some deficiencies, particularly with regard to marine habitats. In this coastal project, the management plans for two sites, although agreed, still had outstanding issues according to the ex-post assessment:

- Various crucial sites for the protection of targeted bird species were located outside the Natura 2000 site.
- Very few concrete actions are listed as necessary measures and the main actions are listed as voluntary measures.
- There is still too much disturbance caused by recreational activities and what exists is not adequately controlled or enforced.
- Concrete restoration actions are largely restricted to land parcels owned by NGOs or in public land, private landowners are not engaged, so large-scale restoration does not happen.

According to the BLUEREEF project, all Danish Natura 2000 areas are managed according to a Natura 2000 management plan, and the project was not part of elaborating the plan. However, the 2016 revision of the plan did build on the result of the project; the existing plan has now expired and a new planning period 2022-2027 has commenced. In this case, management



Using static acoustic monitoring devices to map the distribution and behaviour of Baltic Sea Harbour porpoises (SAMBAH - LIFE08 NAT/S/000261)

requirements are limited as threats have been removed and the protection of the reef has been significantly improved through the ban of fishing with trawling gear, effected in 2018.

In Sweden, the only management plan directly targeting the Harbour porpoise in the Baltic Proper, is the one for the new Natura 2000 area SE0330308 Hoburgs bank och Midsjöbankarna. This area was designated in 2016 based on the SAMBAH project results. The work with the management plan has been ongoing since, led by the County Administrative Boards of Kalmar and Gotland as the area is under their jurisdiction. The plan was approved on 20 December 2021⁴⁰.

3.4.1.2 Atlantic Biogeographical Region

A management plan for the Portuguese LIFE Berlengas SPA was drafted and proposed by the beneficiaries, but it was never adopted by the government despite the fact that the public entity responsible for the management of nature conservation was a project beneficiary and directly involved in drafting the plan. However, as with several other projects, the recommended measures within the plan are being implemented by a co-management board and includes actions proposed in the AfterLIFE plan. It is notable that fishermen and tourist enterprises voiced opinion that they should have a stronger voice in planning rather than being told what to do without proper consultation.

Also in Portugal, the Biomares project reported that there is no approved management plan for the Arrábida-Espichel SCI. The management plan has been drafted and includes part of the conservation measures identified in the project. It is currently under public discussion, but there was a general opinion by the interviewees that the marine section is weak. It appears that the management is undertaken on a day-by-day basis without any long-term strategic approach and once again, the fishing and tourism stakeholders complain about a lack of consultation. However, due to the enthusiasm of the beneficiaries, most of the actions embedded in the AfterLIFE plan are being implemented and the project works have continued or are being reinforced.

The MarPro project drafted management plans for the 4 proposed SPAs and 4 proposed SCIs in Portugal. All plans were fine-tuned with relevant public sector authorities, went through a consultation process and were submitted for approval. Only two of the SCIs have so far been approved 4 years after the end of the project. In addition, even for the SCIs that have been approved, the measures included in the plans are not being implemented in full, but beneficiaries continue to do what they can to address many of the issues.

3.4.1.3 Mediterranean Biogeographical Region

The ex-post report of the ConShagAudMIBAGR project summarises the current situation in Greece regarding management plans for Natura 2000 sites. There are existing management plans for seven Natura 2000 sites with a marine area (drafted between 2001 and 2016), but only one is legally approved (National Park of Schinias). Management plans for all Natura 2000 sites are currently being drafted again through the project 'Assembly of Special Environmental Studies and Management Plans for Natura 2000 sites in Greece'. In addition, some actions within the LIFE IP 4Natura (LIFE16 IPE GR 000002) relate specifically to site management plans for some MPAs. Actions to reduce threats from invasive species (rats and yellow legged gulls) and by-catch (mainly through monitoring) have continued well after the end of the project. Other sections of the management plan are being implemented under the auspices of the LIFE IP4NATURA project.

Furthermore, the CYCLADES Life project developed a site-based Ecosystem Based Management Plan, which was formally adopted by the Greek state after the end of the project, in 2019. The

40 <https://www.lansstyrelsen.se/download/18.63dca67817dc1ece7ef7b17/1639996089199/Hoburgsbankoch%20Midsjo%CC%88bankarna%20SE0330273.pdf>

final version of the Plan included fewer regulations and measures than those proposed by the project. Additionally, the approved Plan was temporary, lasting only a mere two years. The Plan was re-approved in July 2021 by the Ministry of Environment, but this legal document is only valid for one year. This essentially creates a temporary situation of protection of the MPA, making it vulnerable to various administrative decisions and creating uncertainty for stakeholders. A recent update (September 2022) revealed that the Ministry of Environment has extended the ban on fishing activities in the area for a further two years and so the area remains protected, and monitoring and surveillance continues.

Another project focusing on the Mediterranean sub-species of the European shag was SIMARINE-NATURA. In this case the three coastal Natura 2000 sites were included in the management plans up to and including 2028. Moreover, some of the measures were transposed into the management plans for the two coastal protected areas that contain three communal roost sites. However, because of the non-designation of the offshore SPA in the Central Gulf of Trieste, no conservation objectives and management measures have been formalised for the offshore foraging areas.

In Spain, the INDEMARES project was responsible for establishing a network of offshore MPAs in Mediterranean waters. The development of the management plans is significantly delayed. The main consequence of the lack of approval of management plans is the absence of legal framework as a basis to regulate activities. This also has implications in so much as without these management plans, possible restrictions on use of the areas could not be taken into account



African striped grunts (Parapristipoma octolineatum) in the Cabo de Gata Coastal Reserve in Spain (INDEMARES - LIFE 07 NAT/E/000732)

for the preparation of the maritime spatial plans. In addition, the ex-post revealed a lack of coordination between responsible bodies, and lack of harmonisation with regional regulations, together with the distance (which can sometimes be hundreds of kilometres) of the managers from the managed areas (disconnected management) as a significant barrier to implementing management measure in practice.

In Life Posidonia Andaluca, all site management plans except one (8 of them) were approved before the end of the project, while the update of the management plan for the SAC Cabo de Gata-Níjar remains to be done. One of the consequences of the delay in updating the SAC plan is the current lack of regulations concerning some marine recreational activities which is becoming a major issue due to the increasing pressure of tourism in the area during the last decade. However, several actions are still in place (monitoring programme, surveillance, socio-economic studies, maintenance of artificial reefs and mooring buoys, e-library, dissemination materials) or have been implemented until recently (POSIMED network). Nevertheless, in some cases their implementation/maintenance has been reduced to a minimum due to the lack of human means and funding support (e.g. surveillance, maintenance of the mooring buoys and of the e-library).

The POSEIDONE project in Italy reports that the management plans for both target sites were formulated and approved by the Lazio Region by the end of the project. Then they were upgraded (including the increase in the area of both sites) and prescribed conservation measures (adopted by the Region) once the sites became SACs in 2019. The management plans (and then the conservation measures) include a lot of prescriptions (called “Active interventions and actions to be encouraged” in the conservation measures), none of which have been implemented. The first management plans included the installation of anti-trawling devices which had actually been done during the project. The person in charge at the Region explained that the conservation measures represent a sort of “wish list”, rather than the description of measures that are needed and realistically feasible. Many of the persons interviewed stated that the only needed measure was the elimination of illegal trawling which was enough to guarantee the restoration of the habitat.

In Malta, in the framework of the BaĦAR for N2K project, no management plans have been approved so far but conservation measures are in the process of being agreed (it was expected in spring 2022, but still pending). It is not certain whether the many measures included in the management plans have been implemented in any of the designated areas.

In France, the MARSILES project did not develop any management plans and the Calanques National Park MPA is not presently under any proper management plan or holistic conservation strategy, nor is it expected to be in the near future.

3.4.1.4 Macaronesian Biogeographical Region

The CETACEOSMADEIRA II project was to be commended on leading to successful designation of an SCI, encompassing the coastal waters of the islands Porto Santo and Desertas as a critical area for Common bottlenose dolphins in Madeira. The SCI was proposed by the Regional Government of Madeira in 2016, three years after the project ended. The management plan for the SCI has not yet been approved, however, the recent Madeira law Despacho 221/2020 sets out an 18-month window for the development of the management plan for the SCI and it seems that the drafting of the plan has begun. While some activities have been carried out to reduce the impacts on the target species, the ex-post project identified that further efforts are still necessary to ensure the long-term conservation of these species. These measures would include: set up of long-term monitoring programmes as a basis for an effective and adaptive management of these species, set up of appropriate surveillance schemes, especially as regards whale watching activities, and further research on the real impact of the existing pressures (underwater noise, marine traffic, fisheries and plastics) and of their accumulative effect.

3.4.2 Governance/Responsible Authority

In the same way that management plans can operate on a national level or site level, the governance of MPAs is also multi-layered. The competent or responsible authorities can designate areas for protection and set out broad guidelines for how they should be managed. Governance on a site-by-site basis could be devolved to a public body, special purpose entity, a co-management board, or an NGO. It identifies who can make decisions, who has the authority to act on behalf of the organisation and who is accountable for how an organisation and its people behave and perform. In this assessment we were interested to compare the effectiveness of different governance models at the site level.

3.4.2.1 Public Bodies

In the LIFE RES MARIS project in Italy, the governing body is the Municipality of Villasimius, Marine Protected Area of Capo Carbonara. The MPA was identified in 1982 and founded in 1998, then the foundation decree was replaced in 2012. The Rules of the MPA were published in 2017. The director of the MPA noted that there is the will to enlarge the boundaries of the MPA and include other two neighbouring municipalities and that the request has already been submitted to the Ministry of Ecological Transition.

Also in Italy, the POSEIDONE project revealed an interesting situation regarding governance. Although the two sites targeted by the project were within an SCI (later designated as a SAC in 2019), they were not within an MPA and so governance of the two sites was unclear. Initially, the site was managed by the beneficiaries under a management body established at the Municipality of Montalto di Castro and monitoring for the sites is assigned to the Regional Agency for the Environment. In 2019, the Lazio Region (Direction for Environment) was designated as the managing body for the SCI. However, the Municipality does not contribute to meetings and appears to be totally dissociated with the governance of the sites. It seems that if a site is designated as a national MPA, it results in well-structured and efficient management in comparison with sites that are not designated as MPAs but are 'only' SCI or SAC. These project sites are fundamentally operated on a voluntary basis now in the absence of support from the public bodies.

In Portugal (represented by 4 projects in this ex-post assessment), the bodies responsible for the designation and management of all MPAs up to 200 nm (nautical miles) are the Institute for the Conservation of Nature and Forests (ICNF) in mainland, and the Institute for Forests and Nature Conservation (IFCN) in Madeira. They are also entities responsible for the implementation of the management plans for the sites. However, the ex-post studies conducted in this country reveal that the lack of political commitment of the decision-makers, regarding the monitoring and conservation of marine species, is an important problem. It seems that the coordination and communication between the authorities managing the environment and those managing the sea related conservation issues is not effective and leads to poor management. It is reported that 'decision-makers only care about these issues when "important" strandings or accidents [...with marine mammals...] are highlighted by the media'. In addition, the ex-posts reported that the management of sites in general in Portugal is not being implemented through a participative process. In fact, based on several opinions, the management plans are not being implemented due to the lack of resources and funds, but also due to the absence of a proper coordinated structure. Furthermore, the Resolutions of the Ministries Council (Resolução Conselho Ministros) 17/2019 and 18/2019 (related to the approval of the proposed SCIs) provide for the establishment of a coordination group, managed by the maritime authority, which should "propose measures to minimize the impacts arising from the management of the sites on ecosystems and economic activity and promote and evaluate the execution of the respective management plan". However, in reality, during the MarPro project interviews it was reported that this coordination group is not working effectively.

According to the DENOFLIT project in Lithuania, both marine Natura 2000 sites have been officially assigned to either a National or Regional Park Administration that are part of the State Service of Protected Areas under the Ministry of Environment. The administrations are

responsible for assessing the status of protected areas and Natura 2000 sites, implementing monitoring of species of EU importance and ensuring the implementation of protection measures required to conserve and restore status of natural habitats and species to 'favourable' conservation status. It seems these administrations lack resources and do not have the technical capacity to conduct monitoring, which continues to be carried out by the Environmental Resources Authority via contracts with the Marine Research Centre at the Klaipėda University. In Latvia, the MPAs are officially governed by the Nature Conservation Agency, and in Estonia they are officially governed by the Environmental Board – in both countries there is no specific unit/organisation with responsibility for MPAs.

In Spain, the situation is complex. The competences in the marine environment are distributed between the state and the autonomous communities, whose coordination is very challenging and requires clear improvement efforts. Improving this coordination is, in fact, one of the main objectives of the LIFE-IP INTEMARES. This lack of appropriate coordination between responsible public bodies at the national and regional level is compounded by continuous political changes within the institutions which has an impact on effective management of marine habitats and species. At a regional level the governance framework is also complex. However, in this case, the regular direct contact among technicians and managers greatly facilitates an appropriate coordination. The frequent lack of input at the local level reduces the effectiveness of conservation measures as the municipalities have a responsibility for managing some of the main threats to the marine environment from land-based sources. During the ex-post study, there was a call from the local fishermen to simplify the regulatory framework as *'there are so many rules, that finally one thinks that none of them are important'*.

In Finland, the FINMARINET project revealed that the Metsähallitus, Parks & Wildlife Finland is the main organisation responsible for the management of marine and terrestrial protected areas in Finland. Metsähallitus is tasked to prepare management plans for each Natura 2000 area and national park, these are approved either by the Ministry of Environment or the regional ELY centres depending on the national importance of the protected areas. The protected area management principles are partly determined directly by national legislation and partly by Metsähallitus, being the landowner and site manager. Metsähallitus is in general responsible for the implementation of the management plans in protected areas. To date only two management plans which take the marine environment into account have been prepared.

The Natura 2000 management bodies in Greece are historically dysfunctional as they have no legal rights to enforce the legislation and because they are underfunded. Also, at the moment they are not operating normally as the transition to the new Conservation Management Units under the Natural Environment and Climate Change Agency has not been completed.

In Denmark, the overall competence for management and monitoring of the marine environment including Natura 2000 has been transferred to Danish Environmental Protection Agency but other national bodies also have a role to play. Fisheries are part of the Ministry of Foodstuffs, safety issues are regulated by the Danish Maritime Authority, and construction by the Coastal Authority, which is part of the Nature Agency.



Protecting algae-dominated shallow water habitats in the Western Gulf of Finland (FINMARINET - LIFE 07 NAT/FI/000151)

3.4.2.2 Special Purpose Entity

The MARSILES project in France reveals an interesting history of governance evolution from public body to special purpose entity. At the time of the project, the area was under the governance of Marseille City, but following a series of delegations and mergers, the Calanques National Park was established in 2012. While the LIFE project did contribute to that outcome, the initiative's true origin dates back to 1999, when a diverse public interest group was created to stand against Marseille City's aggressive urban expansion policy. That group, made up of various stakeholders (prefect, mayor, representatives of the Ministry of Environment, regional administration, nature conservation associations, hunters, fishers, etc.) was the true foundation of the Calanques National Park, created 13 years later. Although all management duties were passed on to that new organisation, several of the former members of the now-disbanded group are still taking part in the Natura 2000 Steering Committee⁴¹. Today, the national park status offers the ideal governance framework, ensuring long-term protection and availability of specific high-end expertise. From that viewpoint, its creation is the culmination of a years-long struggle, and a major win for local nature conservation. The Park has however been unreasonably slow in defining an MPA management plan, which to this day has not yet even been considered.

3.4.2.3 Co-management

Since 2021, the Berlengas Nature Reserve in Portugal, which has a significant terrestrial as well as coastal elements, is governed by a co-management model. Such model was defined by Decree law 116/2019 for co-management in nature conservation areas, and in 2021, the government established the composition of the Co-management Board for the Berlengas (via Despacho 4430/2021). The composition of the Board includes representatives from the municipality (Mayor of Peniche), the ICNF, higher education institution (Instituto Politécnico de Leiria), NGOs (represented by the Portuguese Society for the Study of Birds (SPEA) and Association for the Promotion and Development of the Peniche Sea Science and Technology Park).

In Greece, the CYCLADES Life project established a Co-management Committee during the project. This was an extremely effective governance structure at the site level. Regrettably, the Co-management Committee which operated during the project dissolved at the end of the project.

3.4.2.4 NGO

The Greek project CYCLADES Life provides one of the most interesting case studies because the bodies with statutory responsibility for the MPA management appear to be dysfunctional and management has been taken over by WWF Greece in an informal but effective manner and in collaboration with the relevant authorities. The two national parks in Zakynthos and Northern Sporades have been governed for a long time by the respective Management Bodies of the sites with significant contribution of NGOs. In Zakynthos, the NGO ARCHELON has been monitoring Loggerhead turtle (*Caretta caretta*) nesting beaches for over 25 years, and similarly in the Northern Sporades, the NGO MOM has been monitoring the Mediterranean monk seal population for the same period.

In Malta, MPAs are currently under the control of the Environment and Resource Authority, while some conservation, monitoring and educational activities are managed by local NGOs and research centers. During the ex-post study of the BaHAR for N2K project, it was noted that the Environment and Resource Authority is apparently carrying out consultations with the two main nature conservation NGOs in Malta (BirdLife Malta and Nature Trust) for the takeover of the

⁴¹ The implementation of the Natura 2000 policy in France has two major characteristics: (1) Each SCI is governed by a steering committee, featuring all relevant stakeholders including local land users, which appoints an organisation in charge of the site's management. This organisation is expected to draft a so-called "document of objectives", which is basically the site's management plan. (2) The SCI designation does not come with any legal obligation for local land users; only contractual tools can be used to implement conservation measures in the field.

management of some MPAs. This was done at the specific request of the NGOs during the first consultation period in 2019. *“To avoid tension and conflicts amongst the different stakeholders operating in the area of MPAs, potential impacts, threats, and opportunities have to be identified and addressed. It has to be guaranteed from both, governmental side and private sector, that all planned activities will be implemented in close cooperation and consultation with the responsible management authority for MPAs, at all times considering the sustainable maintenance of Malta’s MPAs”*. A decision is pending the publication of the conservation measures.



Conservation, monitoring and educational activities in Malta's Natura 2000 network (BaHAR for N2K - LIFE 12 NAT/MT/000845)

3.4.3 Financing Mechanisms

There were several different financing models represented in the different countries, but the majority of financing comes from EU, national or regional public funds. There are very few examples of where private financing has been harnessed to support MPA management or development.

3.4.3.1 Predominantly EU Funding

In Latvia, routine administration at the level of the competent authorities is financed from the state budget. Monitoring and surveillance are covered by the state budget and the Environmental Protection Fund. All other project, inventory and research activities are financed from the EU funds/projects.

There is only a limited amount of state funding available for monitoring in Lithuania. For specific projects, the responsible national and regional authorities request financing from the EU.

In Spain, the ex-post report of the INDEMARES project provides a good overview of funding mechanisms envisaged for marine MPAs in the future:

- LIFE programme: the pillar for the conservation of the construction and management of the marine Natura 2000 network in Spain, mainly through LIFE-IP INTEMARES.
- EMFAF: even if from a strategic point of view the Spanish Operational Programme is overall well aligned with the funding requirements of the Spanish prioritised action framework (PAF) under the Habitats Directive, in practice there are significant funding gaps. This is due to the large number of intermediary management entities throughout the territory and the seemingly lack of appropriate coordination between them. In addition, the managers of this fund (in Spain) maintain a more traditional vision of their role as promoters of the economy of the marine environment without assuming their role as custodians of conservation. There are notable exceptions, but these are rare. Among them, it is the Pleamar Program, managed by the Fundación Biodiversidad, which, as a result of the LIFE-IP INTEMARES has clearly directed these funds towards the conservation and management of the Natura 2000 marine areas.
- Other EU funds: The European Regional Development Fund (ERDF) is an important mechanism for setting up monitoring and surveillance programmes and there is an expectation that the recovery funds will also help boost MCS activities.

On the islands of Madeira, the Madeira Whale Museum has been a key institution operating the management and conservation measures for cetaceans (despite it being the statutory responsibility of the regional government). Their activities on the follow up work of the CETACEOSMADEIRA II project are mainly financed through a varied array of EU funds (LIFE, INTERREG, MSFD, EEA grants and ERDF), although the Machico Municipality also contributes through their own funds. There is no financial support from the regional government or from the European Maritime and Fisheries Fund (EMFF)/EMFAF. The conclusions from the ex-post study highlight that the EMFF is administratively complex, and that access depends on the criteria of the Directorate-General for Maritime Affairs and Fisheries' (DG MARE) who do not seem to sufficiently consider the importance of conservation issues.

In contrast, the monitoring of Mediterranean shag in Slovenia between 2020 and 2021 was funded by the EMFF/EMFAF. Further financing of the monitoring scheme has been proposed with the EMFAF 2021-2027, but this has not yet been adopted.

3.4.3.2 Predominantly National Funding

In Estonia, the management of protected areas, including MPAs, is financed from the budget of the Environmental Board that includes funds from state budget and different projects (financed from the EU and/or national funds, Environmental Investment Centre). Monitoring and surveillance are covered by the state budget, Environmental Investment Centre.

The continuous funding for the management of the MPAs in Finland is national funding provided by the Ministry of the Environment of Finland. Project funding (EU and national) is also especially important for further development of the improvement of methodology and management structures.

In Spain, the majority of funding for *Posidonia* meadows in Andalusia comes from the regional government financing. This supports the management and MCS. While there is some contribution from EU funds (LIFE, Interreg and Horizon 2020), the EMFF remains unused for conservation purposes in the region. It is worth noting that the LIFE Blue Natura project (a successor to the Life Posidonia Andalusia project) is breaking new ground in securing innovative financing for the conservation/restoration of seagrass meadows through selling blue carbon credits.



Lush seagrass meadows in Spain's region of Andalusia form the basis of innovative financing through establishing blue carbon credit schemes (LIFE Posidonia Andalusia - LIFE 09 NAT/ES/000534)

In France, the MARSILES project is arguably the only project to report a reasonably secure funding situation. Although it has taken more than a decade to evolve, the administration is able to justify allocation of funds to support the Natura 2000 management plans for the SPA (2007) and the SAC (2017). Today, the site's sole manager, the Calanques National Park, is granted a yearly budget of approximately 5 million euros (as per the Park's 2016 financial report), 90% of which comes directly from the Ministry of Environment. More than two thirds of that sum is spent on personnel expenditure, which includes monitoring, surveillance, etc. Since the end of the LIFE project, the team specifically appointed to the Rioul and Frioul archipelagos has expanded from 3.5 to 7 full-time equivalent employees.

3.4.3.3 Private Funding

The BLUREEF project in Denmark is an excellent example of where private finance has been levered to supplement, and indeed secure, public financing. The investments in boulder reefs after the project have come from the EU (LIFE – approximately 1 million euros), national (present annual budget allocation 1.5 million euros) and private sources. It is worth noticing that the private Velux fund has contributed approximately 33 million euros to improving the marine environment since 2015 (not exclusively for reefs). State funding has been lagging behind in the marine environment, and the larger part of funding for nature restoration still goes to terrestrial habitats; however, recently 2.5 million euros were allocated to restoration of boulder reefs.

The CYCLADES Life project in Greece reported that extra funding was generated after the end of the project by a number of stakeholders in order to sustain the project results. Most of these were actually from grants or donations from charitable foundations. Without these contributions, it is arguable that the good work accomplished by the project would be accomplished.

3.4.3.4 Mixed Financial Models

In Greece, the ConShagAudMIBAGR reported a mixture of EU financing and private financing to further support IBAs and seabirds. LIFE features significantly in this support together with government funding through the Green Fund and EU Structural funds. Private funding from the Leventis Foundation and Marc Constantin Foundation directly to HOS have helped to support vital monitoring activities.

The recently closed LIFE Berlegas project in Portugal reports a number of different financing entities secured to deliver the AfterLIFE Plan. Municipality and University entities were able to attract funds (EMFF, LIFE and national funds) to ensure the continuity of the works on the island and within the SPA. Nonetheless, funding continues to be a limiting factor for the implementation of the proposed tasks. Recently, the authorities approved a 3 euros/day tourist tax which could assist to support the activities. Interestingly, these beneficiaries identified a critical fault with the EMFF in that the priorities of the "Mar 2020" (EMFF) have reduced opportunities towards actions related to the Natura 2000 network. Opportunities increase only when improvements to the fishing sector are included in the project. The Biomares and MarPro projects report a similar picture with respect to the EMFF.



Continuation of project inspired activities using finances from a number of different sources (LIFE Berlegas - LIFE 13 NAT/PT/000458)

3.4.4 Monitoring, Control and Surveillance (MCS)

This section refers to the control of activities within protected area in respect of the conditions laid out in the management plan. Here it is not related to monitoring the habitats and species but to monitoring the removal of the threats or pressures (see section 3.1). Because penalties are often (or should be) imposed for transgressions, the responsibility for MCS activities often rests with maritime security services who may not be fully engaged or knowledgeable about conservation issues. There are different operational models ranging from full control by the security services to monitoring and surveillance duties being carried out by park rangers with enforcement carried out by competent authorities. Only occasionally do the protected area staff carry out all functions. The functionality of the MCS system will vary between different countries and possibly within regions and will be entirely dependent on the legal requirements.

Italy: According to the two ex-posted projects, the coast guard service is mandated to carry out the MCS duties. The LIFE RES MARIS project received a report directly from the coast guard service who reported that they checked around 2 700 boats during their patrolling activity along Villasimius coasts, from 2016 to 2021. During this time, they issued some penalties for the anchoring in forbidden restricted areas but no penalties were issued for anchoring on *Posidonia* beds. We may conclude from this that the MCS activities in this case are effective. The POSEIDONE project noted the role of the coast guard was similar and mandated in law. They control the practice of illegal trawling by using the remote control of fishing boats via the 'blue box' system. It is acknowledged that this is not a sufficient guarantee for transgression and that the anti-trawling devices are actually the best option. The coast guard only patrols specific sites if they are requested to do so by the protected area management.

Box 10 Monitoring, control and surveillance: France

The MARSILES (LIFE03 NAT/F/000102) project reported that nowadays, fishing activities, as well as mooring of recreational boats, diving and other potentially impacting leisure activities, are continuously monitored by two national coastguards (i.e. the civil police, as opposed to the military authority represented by the Maritime Prefect). As civil officers, the staff of the Calanques National Park also have a right to police such activities, including fining and apprehension of offenders, but their limited manpower⁴² prevents efficient surveillance of the whole MPA. To make up for that lack of resources, a "Calanques Operational Group" was created simultaneously with the National Park itself, with the purpose of coordinating the intervention of all police corps and field officers, both inland and offshore. This initiative, under the direct authority of the Public Prosecutor, is reported to be successful, as it already enabled the dismantling of major networks of poachers, which supplied local restaurants with cheap seafood. The organisation also optimises the distribution of responsibilities between police corps, avoiding the overlapping of jurisdictions and enabling multi-task large-scale operations.

⁴² The Park employed 18 environmental officers in 2019, 6 of which were specifically assigned to coastline/islands surveillance.

Portugal: According to the interviewees within the MarPro project ex-post assessment, surveillance is minimal in coastal areas and non-existent in offshore areas. Fines for illegal activities are minimal and so do not present a deterrent. There is a lack of coordination between the relevant authorities and there is a focus on administrative issues. As a result, illegal fishing, despite the improved legislation (see section 3.6), continues to an alarming level.

A similar situation was reported during the Biomares project ex-post assessment, which indicates that this has been the most critical aspect of the MPA management identified by all stakeholders. During the project execution, there was a high presence of guards and researchers in the MPA that prevented illegal activities and allowed detection and correction of common practices from fishermen and marine tourist agents identified as potential threats to the species and habitats. However, after the end of the project such presence decreased significantly and currently is almost non-existent. Despite the existence of boats and human resources in the different entities with surveillance competencies in the MPA (maritime police, park rangers, environmental policy services), there is no cooperation among them, and thus, they act alone and without a plan. Besides, surveillance activities are scarce and only occur during daylight and never during weekends. The situation is compounded by a lack of communication and collaboration between the stakeholders and institutions with responsibility for enforcement.

The LIFE Berlengas project participants also support the same arguments and further note that the surveillance of the offshore areas is responsibility of the maritime authorities, but the lack of coordination between such entities and the ones responsible for the Berlengas Nature Reserve management, prevents planning of an effective surveillance plan embracing all the area covered by the LIFE Berlengas SPA. Interestingly, fishermen complain about the lack of surveillance as it provides an opportunity for professional fishermen to exploit resources using illegal means.

In Madeira, the results of the ex-post of the CETACEOSMADEIRA II highlight that currently there is no surveillance system of the activities carried out offshore in the SCI.

Spain: The ex-post study on the INDEMARES project provides an overview of the situation in Spain. Surveillance of marine activities is rather complex and highly demanding in terms of human and material means. In this sense, the lack of resources has prevented the development of an adequate surveillance of both the activities developed in the Natura 2000 sites and regarding the compliance with the conditions included in the authorizations to carry out certain activities⁴³. In order to solve this problem, the Ministry for the Ecological Transition and the Demographic Challenge has opened some collaboration channels with other organizations with a traditional presence on the coast (civil guard, maritime rescue, navy, etc.), with whom ties are being strengthened, as well as with some regional governments. Besides, as part of the LIFE-IP INTEMARES, new technologies applied to monitoring and surveillance of fisheries activities in the marine Natura 2000 network are being explored. In this sense, one important gap to be duly considered is the need to ensure that the new surveillance technologies can obtain legal evidence of the illegal activities (“pruebas de certeza”; e.g. cross signals GPS, georeferenced cameras adjusted to telescopes, drones, etc). However, except in the case of the marine reserves, it seems that no progress is being made in this sense.

The ex-post of the Life Posidonia Andaluca project provides some detail specific to *Posidonia* meadows. Patrolling routes basically follow the protocols developed by the project, but the frequency of these patrols has been reduced. Also, the absence of a suitable governance framework hampers the development of synergies among the different competent authorities in the marine environment, to achieve more effective surveillance systems. Regarding the control of fishing activity, the use of fishing vessel location and tracking system is compulsory since

⁴³ The exceptions are the Marine Reserves of Fisheries Interest, where surveillance activities concerning fishing activities are being implemented satisfactorily because they count with the necessary human and material means.

2012⁴⁴. At present, most of the fishing vessels in Andalusia are equipped with this device. However, the complexities of the coordination between the competent authorities for the conservation of *Posidonia* meadows and fisheries management challenge the use of this information for management purposes of this habitat type.

Greece: Only the CYCLADES Life project could report a successful MCS system. They operate a complicated system of remote surveillance in the Gyaros Natura 2000 site carried out by radar and drone supported by manned patrols using high speed boats operated by the management team of the MPA (WWF Greece) and supported by the Hellenic Coast Guard. Today, the system is operating really well and is funded by WWF Greece. The radar is connected live with the WWF



The radar equipment is transferred to Greek Gyaros island mountaintop (CYCLADES Life - LIFE12 NAT/GR/000688)

offices and the team's mobile phone. If the speed of the boat is slow and static then it is probably fishing. Then the WWF boat goes to the reported area to confirm the incident and notify the coast guard. The coast guard boat will join if the incident is confirmed and is serious. The remote surveillance system allowed the WWF field team to continue the effective monitoring of all the activity within the Gyaros area, even during the COVID-19 outbreak and the subsequent restrictions to non-commercial marine traffic in the spring and fall of 2020. Overall, the remote surveillance system has high visibility amongst the local communities, and this has been deterring illegal activities in the MPA. Illegal recreational fishing, especially with spear-guns, was considerably reduced (over 50% in comparison to the previous 3-year period) within the Gyaros MPA during the project's duration. Illegal small scale professional fishing was greatly reduced (85% in comparison to the previous 3-year period). Illegal medium-size professional fishing with trawlers was completely stopped within the Gyaros MPA during the project duration. This situation is even better after the end of the project as the designation of the MPA applied even more pressure on fishermen. Continued financing is going to be the issue moving forward.

Finland: The FINMARINET project reported that special conservation zones can be assigned for especially valuable areas. In these areas mobility and activity is restricted during parts of the year for conservation purposes (fishing restrictions, landing restrictions,

etc.). However, as these areas are in general not marked in nature or displayed on the sea maps, the restrictions are often overlooked by those visiting MPAs. The surveillance of the restrictions is to be performed by the wilderness supervision team from Metsähallitus. However, the team is severely undersized compared to the surveillance area, whereby surveillance is in practice non-existent.

⁴⁴ Decree 64/2012, of March 13, which regulates the days and hours of shellfish and professional fishing activities and the system for locating and monitoring Andalusian fishing vessels.

3.4.5 MPA Networks

There is no doubt that establishing networks of MPAs is more effective in delivering conservation objectives than a single isolated MPA could be. Some of the projects had a major objective of establishing a network of MPAs. While these could be identified during the project lifetime, there were few cases of legal designation at the end of the project. In some cases, the sites had been designated by the time of the ex-post assessment, but were not implemented. Some projects did not have this as an objective but were already part of a network, and some appeared to be quite isolated.

3.4.5.1 Unadopted Networks

In Slovenia, the SIMARINE-NATURA project prepared an inventory of marine IBAs with sound justification and brought them to the point of formal procedure for the designation of the SPAs (Natura 2000) – three coastal SPAs were designated in 2013, but the proposal for the offshore SPA was not designated. The Ministry of the Environment and Spatial Planning no longer supports the designation of a new offshore Natura 2000 site (SPA for Mediterranean shag) although there is ongoing infringement initiated by the EC (for more details see section 3.3.3).



One of the objectives of the FINMARINET project in Finland was to propose implementation and possible extension of the Natura 2000 network in marine areas. The data collected within the project, and the tools developed for conducting inventories and preparing maps for the underwater environment have continuously evolved and expanded within VELMU. The maps prepared for the underwater environment and the sites of special ecological value identified in areas outside the Natura 2000 sites will be especially important for assigning new MPAs along the Finnish coast. The project closed 8 years ago and in 2018 two areas recommended by the project have been included in the Natura 2000 network. A marine LIFE-IP BIODIVERSEA will ensure the proper management of existing MPAs and oversee the expansion of the network.

These splendid algae dominated systems will be one of the focuses of the new Integrated LIFE project which carries on the inventory work of the original project (FINMARINET - LIFE07 NAT/FIN/000151)

3.4.5.2 Partially Adopted Networks

The aim of the MarPro project in Portugal was to implement the Natura 2000 network for the target cetacean and seabird species and their habitats throughout the EEZ of mainland Portugal. The project proposed a total of 4 offshore SPAs mostly directed to the Balearic shearwater (*Puffinus mauretanicus*) and 4 offshore SCIs directed to the Harbour porpoise and Common bottlenose dolphin. At the project end date, only 4 SPAs and 2 SCIs were approved by the Portuguese government, the remaining two areas have still not been approved four years after the project end. The ex-post assessment notes that the MPAs are all managed by the INCF, but as individual areas and not as a true network of MPAs. A similar picture is reported by the Biomares and LIFE Berlangas projects, that both reported the network of MPAs in Portugal is not being implemented at all.

3.4.5.3 Adopted Networks

The data collected by the Swedish project SAMBAH were responsible for the designation of one Natura 2000 site in the Baltic for protection of the Harbour porpoise. In addition, as a direct result of the activities, three new Natura 2000 sites for the Baltic Sea population were designated and the Harbour porpoise was added to the list of species in two existing sites in Sweden. Since the end of the project, in 2021, the Swedish Agency for Marine and Water Management has developed a framework for MPAs, designed to support the development of a more ecologically representative, better connected, and more functional network of effectively managed MPAs in Sweden. There were already 16 SCIs designated in Danish waters for Harbour porpoise, but based on the results of the SAMBAH project, work is in progress in designating new areas for this species' protection. No new areas have yet been designated in Finland based on the SAMBAH results and the Harbour porpoise has not been added to any of the existing Natura 2000 sites. However, the new Marine IP in Finland, LIFE-IP BIODIVERSEA has the aim to designate new marine Natura 2000 areas south of the Åland Islands which is the area where Harbour porpoise occurs.

One of the objectives of the Maltese project LIFE BaHAR for N2K was to determine the distribution of Annex I marine habitats to identify and extend the SCIs to be included in the NATURA 2000 network. Between 2008 and 2012, five areas, covering about 190 km² in total, were identified, mainly to protect seabeds of *Posidonia oceanica*. As a result of two other LIFE projects, Project Migrate (LIFE11 NAT/MT/001070) and MALTA SEABIRD PROJECT (LIFE10 NAT/MT/000090), the number of protected areas was increased to cover more than 3 400km² for a range of marine reptiles, birds and cetaceans. In 2018, the network was extended once again, and currently stands at 18 sites covering 4 100 km², which is 35% of Malta's Fisheries Management Zone.

The main objective of the INDEMARES project was to ensure the protection and sustainable use of biodiversity in the Spanish seas through the implementation of the Natura 2000 network offshore. The project represented a cornerstone for the consolidation of the marine Natura 2000 network in Spain. In total, thanks to this LIFE project, the MPA under the Birds and Habitats Directives increased to 7.3 million ha (4.9 million ha SPA; 4.3 million ha SCI) or, in other words, from 1% to 8.4% of Spanish protected waters. The current LIFE-IP INTEMARES includes among its objectives the enlargement of this network through the identification of main gaps according to the best scientific advice and the conclusions of the marine biographical seminars. To this end, some initial proposals for enlargement are foreseen in the grant agreement of this project.

The BALTIC MPAs and DENOFLIT projects in Lithuania provided justification for the proposed boundaries of two newly designated offshore Natura 2000 sites as a result of the projects, increasing the network to 9% in offshore areas. These have a potential to support better connectivity of areas in the south-eastern Baltic Sea, specifically considering boulder reefs as stepping stones for migration of species associated with rocky bottoms.

In Latvia, the BALTIC MPAs project identified the areas and submitted the proposal for designation of the 7 MPAs. All the proposed areas were approved by the government in January 2010,

shortly after the end of the project. Before the project, no real MPAs were established - only marine extension of terrestrial areas, which were not based on actual field investigations. As a result of the project, the entire network of Latvian MPAs was established, including revision of marine borders of the existing protected areas (Natura 2000 sites). Part of the MPAs has adjacent terrestrial protected areas important also for bird species. Proposals for extension of the MPA network on offshore areas is now expected from the LIFE REEF project (2020-2025).

In Greece, one of the objectives of the ConShagAudMIBAGR was the identification of marine IBAs to promote protection as a necessary step to avoid habitat loss. Marine IBAs overlap with the marine Natura 2000 sites and following on from the project and the beneficiary's (HOS) efforts to monitor and conserve seabirds in the Aegean and Ionian Seas, the Greek government issued a joint ministerial decision in 2017 to extend the Natura 2000 network. Overall, 32 new Natura 2000 sites and 63 extensions of existing Natura 2000 sites were added to the Greek network, mainly designated for the protection of seabirds. As a result, coverage of the marine Natura 2000 network (now 903 897 ha) increased from a mere 6% of Greek national waters to 22% (just over 1 million ha). Overlap between the marine SPA network and marine IBAs has now increased to 86%, thereby laying the foundation for the protection of over 60-70% of the national seabird population and associated marine biodiversity. However, this apparent success must be tempered with a note of caution, since most marine Natura 2000 sites do not have management plans or functioning management bodies, they are "paper parks" until management measures are put into place and effectively enforced.

In Madeira, one of the main results of CETACEOSMADEIRA II project was the proposal of the SCI PTMMD0001 Cetáceos da Madeira. This is the only offshore SCI in the region and, hence, importantly completes the previously existent Madeira MPAs network, which was based on the designation of marine protected coastal areas.

3.4.5.4 Transboundary Networks

A series of LIFE+ projects explored the nature of the little-known marine ecosystems in the eastern Baltic. In Latvia, the Baltic MPAs did not set out to formally designate a transboundary network. However, during the project, MPA Irbes šaurums that was designated in Latvian waters, is adjacent to the existing Estonian MPA Vesitükimaa and this has ensured the protection in both countries of the Irbe strait, which is an important bird migration area.



*Identifying important pelagic communities, like this Loggerhead turtle (*Caretta caretta*), off the south west coast of Sardinia (INDEMARES - LIFE07 NAT/E/000732)*

3.5 Conservation Outcomes

3.5.1 Impact Assessment

For this part of the assessment, we compared the impact assessment score completed at the end of the project (estimated) with the impact assessment in the ex-post analysis (actual). It should be noted that as far as possible the same person who assessed the project at the end of the LIFE financing period also conducted the ex-post analysis and so the comparison is valid in the majority of cases. Impact is assessed in the following parameters⁴⁵:

- Conservation status improvement (30 points)
- Short-term leverage effect (10 points)
- Long-term sustainability (5 points)
- Leverage effect (20 points)
- Regional/national/international impact (10 points).

The data in Figure 6 show that the actual impact of five projects showed no change to the impact estimated at the end of the project. Four projects registered a moderate increase between the estimated and actual results, which was due to improved performance in long-term sustainability in all cases with minor contributions from other parameters. In light of the conclusions of the ex-post evaluation, the initial scoring of the MARSILES project at 78% (“very good”) was moderated to 63% (“good”). At the time of the final evaluation, in 2008, results appeared to have been met and there seemed to be reasonable assurance of a genuine improvement in the conservation status of the target species, as well as strong prospects of long-term proper management of the Natura 2000 site by the future Calanques Nature Park. As the oldest of the ex-post projects, it is perhaps not surprising that the projects’ influence has diminished over time.

The Italian project LIFE RES MARIS was initially scored at 73% but was moderated to 45% in the ex-post. Although at the end of the project the results had been achieved and the objectives met, the project did not have the predicted impact in the AfterLIFE in respect of conservation status improvements and long-term sustainability as the impact remained quite local. Similarly, the Portuguese project CETACEOSMADEIRA II, scored lower than predicted in terms of conservation status improvement. However, this is thought to be due to a different interpretation of the guidelines rather than a real difference due to lack of effort on the ground; the same observation may also apply to other projects where a reduced score for this criterion was recorded.

Three projects showed a significant increase in impact from estimated to actual results. The BLUEREEF project scored higher in all categories except for short-term leverage. Most notably, the project had a much higher long-term sustainability, but doubled the score for leverage effect obtaining a (well justified) maximum score. Project BALTIC MPAs doubled the score for conservation status improvement and long-term sustainability based on the progress made in the recipient countries with designating and implementing MPAs. Finally, the Spanish project Life Posidonia Andalucia demonstrated an increase in conservation status improvement, long-term sustainability and leverage effect.

⁴⁵ These parameters are used for the internal scoring system applied to LIFE Nature and Biodiversity projects by Technical Monitors at the end of the project.



Designing the reef reconstruction to produce maximum biodiversity benefits (BLUEREEF - LIFE06 NAT/DK/000159)

Four projects recorded a slightly lower performance (no more than 5 points difference overall) in the ex-post assessment than predicted when the project was evaluated at the final report stage. These relatively minor reductions mostly came because the projects had over-estimated their impact on improving the conservation status of the target species and their long-term sustainability. Three projects were scored with a greater than 5-point reduction between the two assessments, remembering that this metric concerns the prediction of the impact and influence the project *might* have after it has concluded and does not bear any relationship to how well the project met its original objectives and expected results.

Finally, one project (BaHAR for N2K) is not included in the impact assessment due to data deficiency.

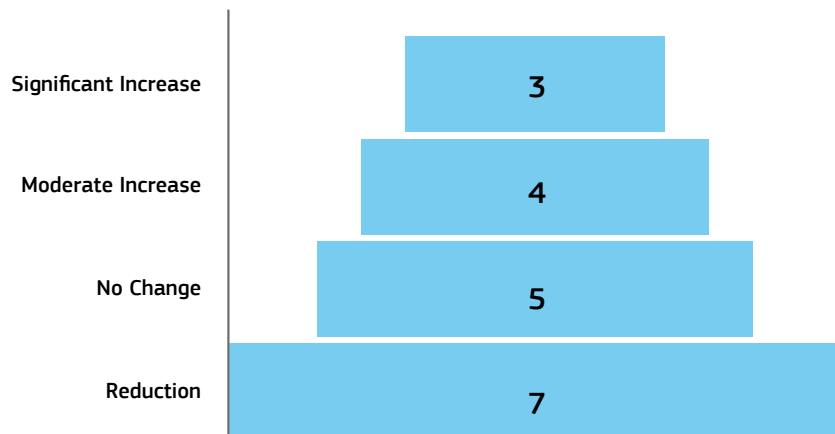


Figure 6:
Comparison of project impact at the end of the project and during the ex-post

3.5.2 Sustainability

The sustainability of a project is a combination of the way the effects (i.e. results, outcomes and impacts) lead to long-term management, stakeholder support, and critically, the protection of habitats and species.

3.5.2.1 Sustainability Demonstrated (13 out of 20 projects)

The MARMONI project has demonstrated a high degree of sustainability. The project developed a set of marine indicators to monitor marine biodiversity aligned with the Good Environmental Status of the MSFD, as well as 'favourable' conservation status of the Habitats Directive. In the end, 50% of the indicators developed have been integrated into national marine monitoring programmes adapted for the implementation of the MSFD in Latvia, Estonia and Sweden. They will be used in reporting under Article 8 of the MSFD. Also, indicators were used in HELCOM second Holistic Assessment of the Ecosystem Health of the Baltic Sea and will be used in the third assessment.

In Greece, the CYCLADES Life project scores high for sustainability because most core interventions are still in place, several stakeholders are still actively involved, new follow up projects have been initiated and funds mobilised. The project continues to conduct research, and the *Posidonia* meadows (1120*) and shallow reefs (1170) continue to be monitored. Arguably most important is the continued operation of the surveillance system, which has been rigorous in the ex-post period, with significant funds being mobilised for this purpose.

Ten years after the Biomares project in Portugal closed and despite the absence of a proper management plan for the target Natura 2000 marine area, the sustainability of the project has only been ensured by the cohesion of the project beneficiaries. The involvement of these entities in the maintenance and monitoring of the conservation works and the promotion of local natural values allowed the implementation of the AfterLIFE Conservation Plan and will continue to be implemented. This is a remarkably successful project due entirely to the dedication of partners. The same conclusions were reported for the LIFE Berlingas project in Portugal which also continues without the approval of the management plan.

3.5.2.2 Partial Sustainability Demonstrated (5 out of 20 projects)

Although the MarPro project in Portugal can claim that sustainability of the protection measures for the conservation of the target species and respective habitats was ensured through the legal approvals of the new marine and extended SPAs and SCIs, and the legal approval of the management plans, sustainability is not fully assured because:

- The management of the proposed areas (including monitoring and surveillance) have not been properly implemented due to the lack of funds and human resources.
- Solutions to mitigate fisheries by-catch (fisheries good practices manuals and a fisheries code of practice) were also produced, but again, due to the lack of funds, continued application after the project has been suspended, despite the approval of legislation supporting the application of such measures.
- The stranding network for live and dead marine animals and some educational activities are the only actions that continue ongoing 4 years after the project end date but the envisaged cooperation between relevant stakeholders did not happen.

The sustainability of the CETACEOSMADEIRA II project's actions has been ensured through the official declaration of the SCI PTMMD0001 Cetáceos da Madeira, and by the approval of the regional regulations of whale watching activities. At present, the Common bottlenose dolphin is considered to be in a 'favourable' conservation status in the Macaronesian biogeographical region. However, the management plan of the SCI has not been approved yet and there is a significant lack of human and material resources to properly manage it (including adequate funding), as a result of which monitoring and surveillance programmes have not been put in place.

In Spain, the Life Posidonia Andalusia project still has several actions being implemented, including the monitoring programme, surveillance, socio-economic studies, maintenance of artificial reefs and mooring buoys. In some cases, the implementation has been reduced due to limited human and financial resources, but the recently closed LIFE Blue Natura project has continued with some activities.

3.5.2.3 Lack of Sustainability (2 out of 20 projects)

In Slovenia, the project set out to designate a new marine offshore SPA, established specifically to protect the foraging grounds of the Mediterranean shag. This was not achieved during the lifetime of the project and is unlikely to happen as the government believes that the identification of the IBA was based on “*a mis-application of ornithological criteria*”. The situation was complicated by the disputed sea border with Croatia in the Gulf of Trieste, and despite the efforts of Italian and Slovenian BirdLife International partners, the Italian Institute for Environmental Protection and Research experts determined that the coastal SPAs were sufficient to support the Mediterranean shag populations. Sadly, the KPIs, based on number of individuals before the project, at the end of the project and 8 years after the project, suggest that populations in Slovenian SPAs show an overall continuing decline.

3.5.3 Replication and Transfer

When a LIFE project closes, the beneficiaries frequently claim that the methods and techniques developed and adopted can be replicated, however, only in ex-post assessments can the validity of this statement be examined. Clearly not all projects manage to replicate or transfer their actions but 14 out of 20 projects did successfully replicate some, if not all, of their activities. Some good examples are highlighted below.

The method developed and used in the SAMBAH project is still in use and has been replicated in several studies. In all countries that were beneficiaries in the LIFE project the monitoring has continued (Sweden, Denmark, Finland and Poland). Germany worked alongside SAMBAH and implemented the same actions, and the results were used in the SAMBAH analysis. Methods have been transferred to the USA and have been used by the World Maritime University for studies of cetaceans in Sri Lanka.

In Italy, the anti-trawl devices installed by the project have proven very successful in reducing the threats associated with bottom trawling in seagrass areas. The method, first developed by the LIFE Co.Me.Bi.S. (LIFE06 NAT/IT/000050) project, was adopted by the POSEIDONE and further refined by the Life Posidonia Andalusia project, and has been transferred to other sites, both within and outside MPAs in Italy.

In Greece, sustainability has been achieved in the ConShagAudMIBAGR through the inventory of mIBA database which is continuously updated and provided to authorities, scientific institutions and stakeholders. The methodology developed has been shared with Birdlife partners in Romania, Bulgaria, Turkey and Cyprus to develop their own mIBA inventories and Natura 2000 marine sites. Also, exchange takes place with other EU partners through the Birdlife Marine Task Force know-how. Continued monitoring has followed the end of the project through available funding.

The BLUEREEF project in Denmark produced a ‘best practice manual’ in Danish and English. In the 8 years since the project completion there have been several initiatives for restoring boulder reefs in Danish water, estimated to be in excess of 15 projects including three totalling 30 ha by the Better BirdLIFE (LIFE17 NAT/DK/000498) project.

3.5.4 Leverage

Leverage can be measured in terms of finance, designations, or continued engagement of stakeholders. The ex-post assessment showed that 14 out of the 20 projects did have either a short-term or long-term leverage impact depending on the age of the project. Some good examples are reported below.

The MARSILES project, which closed 14 years ago, is one example of leverage, although not all the subsequent successes can be attributable to the original LIFE project. Nevertheless, the project can claim a small contribution to what has followed in the last decade. In terms of a number of actual target species, both breeding couples and individuals (where monitored) show a stable trend and the area under protection has increased from 857 ha to 43 500 ha, with 4 626 ha under strict protection.

The leverage effect of the FINMARINET project has been significant. The provided LIFE funding allowed the development of systematic underwater inventory methodology, collection of underwater data, creation of high-quality underwater habitat models and the creation of systematic coordination and improved collaboration between the authorities involved in the management of marine resources. The VELMU programme was launched in 2004, and FINMARINET functioned as a catalyst for the organisation of this programme. The excellent results achieved ensured national funding has been granted annually for the VELMU programme for coordination and inventory purposes. Continued development of the VELMU programme, including marine biodiversity indicators will be done further within the upcoming LIFE-IP BIODIVERSEA project.

The inventory and seabirds database established through the ConShagAudMIBAGR project constituted a game-changer for further protection and conservation of marine areas in Greece. It was the basis for the designation of the list of Natura 2000 sites in 2017 and in the further designation of sites through the IP-4 NATURA project and other government funding of the management plans for all Natura 2000 sites which is currently underway. Furthermore, it was continuously updated after the end of the project and has expanded to include other geographic areas and other species.

The financial leverage of the BLUEREEF project in Denmark has been considerable, as after the project, boulder reefs continued to be financed from the EU, with LIFE contribution of approximately 1 million euros, in addition to national budget and private sources. Private Velux fund invested about 33 million euros since 2015 to improving the marine environment (not exclusively for reefs). The larger part of state funding for nature restoration still goes to terrestrial habitats. However, 2.5 million euros were allocated recently to restoration of boulder reefs, including a 700 000 euros allocation for establishing a marine knowledge centre, to be hosted by four scientific institutions, including two of the BLUEREEF partners (University of Aarhus and the National Institute of Aquatic Ecology). The leverage on capacity of authorities and others for constructing reefs has increased significantly over the last 10 years, as has awareness of and interest in boulder reefs and marine habitats in general; BLUEREEF is believed to have played a role in this development.

3.5.5 KPIs

Given that some of these projects closed over a decade ago, they are unlikely to be able to report on the relevant KPIs after the end of the project. Accordingly, only nine projects reported on relevant KPIs. Of those projects reporting KPIs, three showed an increase status or trend in the relevant target species since the end of the project, three showed stable and three showed a decrease in status or trend. Not all relevant KPIs were reported due to lack of baseline data.

Increase: The ConShagAudMIBAGR project reported 4 out of 5 bird species showed a stable trend 9 years after the end of the project. The eradication of invasive species (rat populations) continued from 25 islands at the end of project to 42 islands cleared in AfterLIFE. In addition, the number of MPAs increased from 35 to 72 with a consequent increase in area.

Stable: While project CYCLADES Life could not report any change in habitat indicators (*Posidonia* and reef), they were able to report on species. The Mediterranean monk seal, Yelkouan shearwater, European shag and Eleonora's falcon (*Falco eleonorae*) all reported stability in numbers of breeding pairs between the end of the project and 3.5 years after.

Declining: Project SIMARINE-NATURA in Slovenia targeted the Mediterranean shag. Overall, the species showed a small decline at the end of the project and a continued decline 8 years after the project end, despite the declaration of two new Natura 2000 coastal sites for this species. Note that the offshore foraging site recommended by the project has not been secured, although it is not clear whether this is the reason for the decline.

3.6 Policy Impact

Not all projects have a direct impact on policy, although they all contribute to the implementation of the Birds and Habitats Directive through the designation, establishment or effective implementation of the MPAs. In most cases this is as much as could be expected from any project, but some projects do have exceptional results, as shown in the following text.

The SAMBAH project set out to improve knowledge about Harbour porpoise in the Baltic to inform management decisions. The data collected by the project has contributed to the International Council for the Exploration of the Sea (ICES) advice on reducing by-catch of this Critically Endangered species. The advice has led to the elaboration of the fisheries management measures under the CFP. The joint recommendation of Member States containing some of the measures, mainly related to Natura 2000 sites, was submitted to the EC and was adopted as a delegated act which entered into force in December 2021. However, measures advised by ICES outside Natura 2000 sites are not yet implemented due to a lack of agreement between Member States to implement the measures, which means that Harbour porpoise population is still facing extinction in the Baltic Sea.

Interestingly, the beneficiaries of LIFE Berlangas identified an issue with the interpretation of the EMFF/EMFAF in that the national (Portuguese) priorities of the “Mar 2020” (EMFF/EMFAF) have reduced opportunities towards actions related to the Natura 2000 network. Opportunities only increase when improvements to the fishing sector are included in the project. Indeed, they also note that three projects concerning reducing interactions between fishermen and seabirds, funded by the EMFF/EMFAF, are being implemented in the area. These projects have allowed monitoring the seabird population, identifying/quantifying the interactions with fishing activities and testing bycatch mitigating solutions in coordination with local fishermen⁴⁶.

The results of the MarPro project led to the development of mitigation measures for the reduction of cetaceans' by-catch, particularly of the Harbour porpoise and Common bottlenose dolphin. The measures regarding the use of “xávega” fishing gears (beach seine) were adopted in 2017 (Article 5th of Ordinance no.172/2017 of 25 May). Such legislation, that requires the installation of adequate acoustic deterrent equipment (pingers) to prevent by-catch of marine mammals, is reinforced by Despacho 19/DG/2020 that has a particular reference to the MarPro project which defined the type of equipment and the best practice use.

The beneficiary of the ConShagAudMIBAGR in Greece, HOS, together with other NGOs, scientific and environmental bodies and the general public, succeeded in putting an end to construction plans involving the development of industrial-scale windfarms on 14 protected islets of the South Aegean. In May 2021, the General Director of Environmental Policy of the Greek Ministry of Environment and Energy finally rejected these unprecedented construction plans based on the multipage documentation prepared by HOS, which deconstructed the narrative set forth by the EIA of the project. In addition, they have contributed to the national spatial planning for marine windfarms by proposing important exclusion zones for seabirds.

In Denmark, the fisheries regulation which promulgates a ban on trawling within some Natura 2000 sites is seen to be as a result of the raised awareness created by the BLUEREEF project.

⁴⁶ MedAves Pesca (MAR-01.04.02-FEAMP-0023); anzol+ (MAR-01.03.02-FEAMP-0026); Co-Pesca 2 (MAR-01.03.02-FEAMP-0018).

A barrier for further initiatives could result from the limitations for national authorities to designate zones of fishing restrictions due to the framework established in the CFP.

One observation came from Spain which has implications for several Member States. The approval of the Biodiversity Strategy for 2030 poses a new challenge since it set the target for each Member State to contribute to having 30% of EU seas legally protected. The fulfilment of this objective could result in diverting scarce resources available towards the designation of new areas instead of ensuring the proper management of those already declared. In the current situation, there is a clear risk that the realization of this objective will lead towards the creation of a large network of MPAs on paper, which will possibly serve to ensure that their conservation values are taken into account more seriously when preparing impact studies for certain activities, but in which it will not be possible to carry out appropriate active management/monitoring measures. At the moment, it seems that there is no clear strategy on how to recognise and use other effective area-based conservation measures in the marine environment in practice.



Mosaic habitats form an important component of the 30% of protected areas that need to be designated by 2030 (INDEMARES - LIFE07 NAT/E/000732)

3.7 Lessons Learnt

Lessons learnt from each project were extracted and are summarised as follows:

- **Removal of threats.** One clear message is that if the main threats are removed then the effectiveness of the MPA is increased significantly. This should be a priority in all programmes.
- **Engagement with stakeholders.** There is a need to involve people in co-creation of management plans and developing of the MPA. It is critical to ensure engagement early in the process and continue with it also after the end of the project, otherwise there is a risk of things falling apart. Awareness and dissemination campaigns are not enough to decrease threats; there is a need for tailor-made messaging to bring people on board.
- **Conflict resolution.** Frequently involving other sea users (fishermen, tourists) is vitally important in bringing about compliance with conservation measures and may need to be supported with financial and technical support.
- **Monitoring, Control and Surveillance.** MCS is generally the weakest link throughout all the projects, but where effective MCS systems are in place they clearly bring great dividends. MCS activities in offshore areas are much weaker than coastal areas. Much more effort and government commitment are needed in this aspect.
- **Securing funding.** It is important to secure funding to continue protection of habitats and species. There is heavy reliance on public funds derived largely from the EU, while EMFF/EMFAF remains largely unused for conservation purposes. Two main causes have been identified as being mainly responsible for this; 1. the administrative complexities of EMFF/EMFAF, which discourage “layman’s” from requesting it, and 2. the fact that the access to these funds depends on national interpretation of the criteria. Even if this is just a perception, then something needs to change to make it more accessible and also to link EMFAF to LIFE. There is clear disconnect with securing private financing and it is time to start looking for innovative funding models.
- **Ensuring political support.** Projects reported that even if the political will is evident at the beginning of the project, the political situation can change dramatically by the end of the project. It is important to ensure political support at the appropriate level of government.
- **Speeding up decision-making.** Several projects reported that even though sufficient data was collected and analysed during the project, management plans had still not been developed or approved even several years after the end of the project. Decision-making seems to be slow.
- **Continuity.** After the end of the project, it is crucial to maintain the impact of the project interventions. The AfterLIFE Plan should be a document that guides future action.
- **Improving knowledge and understanding.** Fishing and tourism sectors primarily, but also decision-makers, are key stakeholders whose knowledge and understanding concerning the importance of conserving existing natural resources (particularly the non-commercial ones) including ecosystem services, natural capital and blue carbon, needs to be continually improved.
- **Enhanced collaboration.** MPA managers, the academic and research community, and the decision-makers need to strengthen collaboration so that science can inform the decision-making and promote good governance.

- **Improving governance.** Projects called for a stronger emphasis on governance and communication as these elements are weak. It needs to be recognised that we might need different governance structures at the site level (MPA) to those at the regional/national level. Governance structures need to be connected to the site, right level of understanding cannot be provided remotely. Co-management models are to be encouraged.
- **Restoration of key habitats.** Although costly, restoration of key habitats is important (e.g. seagrass beds in Mediterranean and boulder reefs in the Baltic Sea and North Sea). Furthermore, the scope and scale of restoration techniques should be continually improved.
- **Management plans.** Although almost always developed in the lifetime of the project, management plans are rarely approved even several years after the project end. There is a need to recognise the difference between the Natura 2000 management plans and site management plan – former is suggested to the Member States under the Habitats Directive, latter needs to be defined at the site level. Projects have shown that even if the management plan is not formally adopted, so long as it is implemented, a more flexible approach may be acceptable and could represent the best tool for adaptive management.
- **Creating and maintaining a network of MPAs.** It is essential to ensure a coherent and efficient management of MPAs in coordination with other sectorial policies that have interest in the sea.
- **Resolution of policy conflicts.** It is certain that there are some policy conflicts, with specific reference to cooperation between different Member States with fishing interests within a Natura 2000 designated site. Possibly, reformation of the CFP is needed.
- **Role of NGOs.** NGOs and smaller foundations/organisations can be a powerful influence in implementing MPAs and may be more effective in some countries than the public bodies that may be disconnected from the site.
- **International cooperation.** It is essential to ensure efficient international cooperation to successfully tackle similar problems concerning the same habitat, where species inhabit transboundary waters and where threats may be common to different nations. This includes countries outside the EU but with shared maritime interests.

NEEMO EEIG
Merzhauser Str. 183
D – 79100 Freiburg
Germany

