

D39 Report on selected areas: a) Gulf of Lion; b)Tyrrhenian Sea; c) Northern Ionian Sea; d) Northern Adriatic Sea; e) Ionian Sea and the Central Mediterranean Sea



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MSP-MED D39 Report on Selected Areas

Introduction: Transboundary MSP and MSP-MED's GA requirements

The MSP Directive (2014) explicitly and repeatedly stresses the importance of "Effective cross- border cooperation between Member States" as a key driver for the establishment of plans. The transboundary cooperation is a minimum requirement for plans (Art.6) however, let alone the respect of Unclos provisions and existing international treaties, the Directive does not enter into the specificities of cooperation mechanisms: "Given the differences between various marine regions or sub-regions and coastal zones, it is not appropriate to prescribe in detail in this Directive the form which those cooperation mechanisms should take". The MSP-MED project, therefore, established a dedicated work package, WP 4 Cooperation among Member States and with third countries and a series of tasks within WP4 to allow exchanges of information and "identify common issues, driving or hindering transboundary/cross-border MSP implementation in the Mediterranean and provide suggestions to strengthen drivers and/or remove obstacles" (MSP-MED GA, 2020).

The activities reported in this deliverable were part of 4.2 Establishing a solid transboundary cooperation in MSP among bordering Mediterranean Member States.

This task focused on transboundary dialogue on common objectives and transboundary planning on selected areas and selected sea uses. The employed methodology was structured around three main axes: a) Transnational priorities regarding MSP implementation (identifying areas and main sectors of concern); b) Analysis of the main criticalities/issues and concerns for the correct implementation of transboundary MSP; c) Proposals of mechanisms, instruments and planning measures for the identified areas. These aspects were assessed and capitalized during different programmed activities in selected areas, that have been identified by the partnership:

• 4.2.1 Gulf of Lion (FR-SP) activities on the shared maritime area between France and Spain.

4.2.2 Tyrrhenian Sea (IT-FR) activities on the shared maritime area between France and Italy.
4.2.3 Northern Ionian Sea (GR-IT) activities on the shared maritime area between Greece and Italy

• 4.2.4 Northern Adriatic Sea (SL-IT) activities on the shared maritime area between Slovenia and Italy.

• 4.2.5 Ionian Sea and the Central Mediterranean Sea (IT-MT) activities on the shared maritime area between Italy and Malta. (MSP-MED GA 2020).

The Covid-19 pandemic caused a great delay in this task; in-presence events were considered preferable in terms of quality of the exchange and positivity of impacts. Therefore, it was only in june 2021 that the activities started again. A set of technical meetings among project partners took place in July and September 2021, also involving authorities, the reports are presented as annexes to the main body of the present



deliverable, they are the Greece-Italy Technical Meeting, the Spain-Italy Technical Meeting and the France-Italy-Spain Technical Meeting. These events were useful to start the discussion on point a) of the aforementioned methodology.

The mentioned delay caused the 4.2.2 event to be postponed to July 2022 but the EC suggestion to support the Westmed Initiative Malta Hackathon meant another change of schedule that in turn determined the impossibility of organizing, in presence or remotely, the workshop. And this despite its design having been realized, the alignment of time constraints did not allow the participation of autthorities from both countries at the same time. To accomplish the objectives of the task, a survey was created and submitted to identified participants to inform a document that is now part of this deliverable.

D39 is, hence, structured around the four meeting reports and one analysis of survey, offering a comprehensive set of conclusions to draw a picture of the current topics identified as interesting for cooperation among Member States in the framework of Mediterranean MSP.

4.2.1 Gulf of Lion (FR-SP)

Introduction

This section aims to showcase the cooperation action between France and Spain developed in the framework of work package 4 (WP4), "*Cooperation among Member States and with third countries*". However, this action was linked to activities of work package 2 (WP2) "*Setting-up of maritime spatial plans*", specifically in the Gulf of Lions Case Study, in order to, building on task results, inform national maritime policies.

It is important to highlight that the cooperation in MSP between Spain and France did not start with MSPMED. The MSPMED project, in fact, built upon outputs from the previous project SIMWESTMED, and specifically its case study in the Gulf of Lion.

Activities developed

As previously explained, cooperation between Spain and France was developed through linked activities in work packages 2 and 4. The specific tasks developed are framed in the following elements of the MSPMED Grant Agreement:

In WP 2, the task 2.2. France and Spain: *Planning the offshore Gulf of Lion with respect to the ecosystems*, in which the workload was divided in 3 sub-tasks:





- Sub-task 2.2.1: To build and promote a global view of ecological stakes and their evaluation in the Gulf of Lions, especially related to cetaceans, sea turtles, seabirds and deep habitats;
- Sub-task 2.2.2: To provide knowledge about interactions between Mediterranean ecosystems and maritime uses, with a specific focus on offshore windfarm development in the Gulf of Lions area;
- o Sub-task 2.2.3: To assess the effects of noise pollution caused by intense activities, such as maritime transport and offshore windfarms, on the pelagic component and especially cetacean species.

In relation to WP4, the works carried out were included in task 4.2. "Establishing a solid transboundary cooperation in MSP among bordering Mediterranean Member States". For this task, two workshops have been organized as follows:

- o Sub-task 4.2.1. Gulf of Lion cross border workshop on the shared maritime area between France and Spain.
- o Additionally, a Transboundary Workshop between Italy, France and Spain regarding underwater noise assessment for decision support in MSP and related policies was included with the amendment of the project.

In the framework of subtask 2.2.1 and 2.2.2, 12 meetings were held between the French and Spanish experts to assess the ecological stakes and the impacts of potential development of offshore windfarms (OWF) in the Gulf of Lions¹. The results of these technical meetings were presented to Competent Authorities (CA) of both countries in a restitution workshop that concurred to Task 2.2 of WP2 and Task 4.2.1. of WP4, the report of which can be consulted in Annex.

On the other hand, for task 2.2.3. of assessment of underwater noise, a technical workshop was organized for experts of Spain, France and Italy to share experiences, projects and initiatives regarding underwater noise². Following this workshop, a meeting with competent authorities from Spain, Italy and France was organized to analyze how underwater noise

Deliverable 7. Knowledge synthesis about ecological stakes related to seabirds, marine mammals, sea turtles and canyon deep habitats. Available at: <u>https://mspmed.eu/wp-content/uploads/2022/08/D7-1.pdf</u>

Deliverable 8. Knowledge about interactions between Mediterranean ecosystems and maritime uses, with a specific focus on windfarm development in the Gulf of Lion area. Available at: https://mspmed.eu/wp-content/uploads/2022/08/D8-1.pdf ² Deliverable 11. Underwater noise Workshop report. Available at:

https://mspmed.eu/wp-content/uploads/2022/09/D11_UWN_workshop_report_FINAL.pdf

¹ Deliverables of these activities can be consulted in the project's website:



assessments could support MSP and related policies³ (Additional trilateral meeting included with the project amendment in task 4.2.).

Finally, these resulted in 7 deliverables, which can be consulted in the MSPMED website.

³ Deliverable 52. Transboundary Workshop – Italy, France & Spain. Underwater noise assessment for decision support in MSP and related policies. Available at:

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https://mspmed.eu/wp-content/uploads/2022/09/D52-Trilateral-Meeting-France_Italy_Spain_FINAL.pdf





Figure 1. Spanish and French coordination between actions in the MSPMED project.





Main conclusions

The most significant advantage in the cross-border cooperation between Spain and France has been the involvement of stakeholders in the Gulf of Lions to establish a dialogue at the technical level. In this sense, the dialogue established has been an opportunity to share knowledge from scientific experience to inform on ecological stakes, OWF development and underwater noise in the Gulf of Lions, specifically regarding sharing data to get the appropriate and updated information of the environment (a correct picture of environmental stakes in the study area), in order to carry out analysis and assessments on a larger scale or on longer time series. And, furthermore, to increase the model validation, methodologies and technics, as well as to enhance knowledge on species distribution.

Beyond the technical exchange, as step forward (in the framework of the restitution workshop (4.2.1) and the trilateral meeting between Spain, France and Italy), a dialogue was conducted between experts and the competent authorities from both countries. The aim of this discussions was the transfer of scientific knowledge to decision makers.

Therefore, the experts and competent authorities (MSP and biodiversity protection) from Spain and France highlighted the willingness to continue the collaboration in the future to maintain discussions on the topics (ecological interests, impacts of OWF development and underwater noise). Scientific experts must be associated in the design of these monitoring programs that should address various scales, from local to transnational (therefor, cross-border cooperation is needed).

This collaboration could inform MSP plans to make their implementation more effective, to learn about true impacts and concrete issues that need to be tackled in MSP plans of each country and at transboundary level.

Finally, it was acknowledged that the cross-border cooperation needs to be sustainably supported by national authorities and can not only rely on short term projects often financed by European funds (EMFAF, Horizon Europe, Cost, etc.). In addition, Regional Sea conventions could also foster transnational cooperation on maritime planning by providing a frame to expertise sharing on environmental stakes or on the understanding of environmental impact of human activities in the marine environment (notably offshore windfarms development).

Annexes:

I Planning the offshore Gulf of Lion in respect with ecosystems -Building on task results to inform national maritime policies

Msp-Med Towards the operational implementation of MSP in our common Mediterranean Sea





4.2.2 Tyrrhenian Sea (IT-FR) and Spain involvement

Introduction

The exchanges between Italian and French partners have been frequent, it was the reason for which the first in presence steering committee, took place in Paris. During that occasion a Three-lateral technical meeting with Spanish partners and CA was organized back-to-back and was the occasion to share reciprocal plans advancement. The event (minutes available in annexe) as well as the exchange that took place in Madrid between Italian and Spanish partners (Ibid.) played an important role in defining the following months of the project.

Activities developed

This approach was the basis for the Trilateral meeting SP-FR-IT of Barcelona (D52) and the Trilateral meeting on surveillance FR-IT-MO (D37).

The consultation continued via email to determine the scope of the Bilateral meeting IT-FR, it was only but logical to go into depth and expand towards Italian shores the discussions in terms of cetacean protection and enforcement of surveillance.

The PSSA proposal under review and soon to be submitted to the IMO by France, Italy and Spain was identified by authorities as the topic to be discussed, capitalizing on previous events and with the objective of discussing how MSP plans would lather interact with the PSSA.

It was decided that regional authorities should be involved in the exchange as well as ministries to allow sharing of more detailed measures. Surveillance authorities would suggest meaning of monitoring and enforcement.

The event organization suffered from a number of issues: the postponing of its agreed date in order to have the bilateral event in Malta back-to-back with the Westmed Initiative hackathon, and later the difficulties in involving authorities from both countries at the same time caused the event (background document in annexes) to be cancelled.

The partners considered that the topic and occasion was too important to be discarded, hence the decision to create a survey and submit it to prospect intervenants, authorities and experts.

The results of the survey fuelled a study document that is part of the current report.



Main Conclusions

The exchanges and studies carried out in this task have highlighted the need to develop guidelines to harmonize how different countries may implement transboundary sensible areas into national MSP. In addition, joint data collection and exchange of data appears to be fundamental to support the enforcement of the PSSA and many overlapping points can be identified with MSP. Further connections with scientists and international initiatives regarding research of large migratory mammals may be fostered by what can be regarded as a pilot study to drive the Restore our oceans achievements in the Mediterranean basin.

Annexes: II Study document III Background document of Bilateral Event IV IT-SP Technical meeting minutes V IT-FR-SP Technical meeting minutes

4.2.3 Northern Ionian Sea (GR-IT)

Introduction

The exchange between Italy and Greece saw a starting point in June 2021 when a technical meeting was held in Athens among project partners. The event was the occasion to reinforce channels of communication after the pandemic and to present reciprocal national advancement in MSP process. The full minutes of the event are available as annexe to the current document.

Part of the event was dedicated to the foreseen cooperation about the Northern Ionian Sea basin, where the two countries share a common border. It was addressed by reflecting on issues of common concern that could become matters of cooperation among the two nations. The identified topics were:

-Transboundary Governance,

-Maritime Transport, especially decarbonisation at Interreg Level, in regard to Blue Growth or Blue Hydrogen.





-Coastal landscape from the sea and broad seascape (from land perspective and at sea).

The identified topics were later shared with the Italian Competent Authority. The latter was the one selected, ideally it would build on the Florence Convention (2000) identifying ways of applying it in regard to marine and maritime landscape.

Workshop development

This selection of the topic made it relevant to enlarge it to a broader scope, becoming the focus topic of the Pan-Eastern event. The Bilateral event was therefore organized back-to back to the event to build on the knowledge shared in that occasion (see SMP-MED D40 for more information on the meeting) during which time for discussion was somehow limited compared to the number of presentations provided by east-Mediterranean involved countries.

The bilateral event was, therefore, an important moment to have a round table involving Italian and Greek ministries of culture, experts in the regulation, study and protection of Underwater Cultural Heritage.

Main Conclusions

The main result of the day of exchanges was a set of suggestions for the EC and national governments to foster consideration of landscape and UCH in MSP plans, especially at transboundary level. The suggestions took the form of the *Statement on the Future of Landscape, Seascape and Underwater Cultural Heritage in MSP: Italian-Greek joint suggestions to develop a Mediterranean approach* (attached to the Report of the event).

Annexes: VI IT-GR Technical meeting minutes VII Report of Bilateral event GR-IT

4.2.4 Northern Adriatic Sea (SL-IT)

Introduction

The approach used to study the shared area between Slovenia and Italy was slightly different from the ones used in the IT-MT and GR-IT ones. The area of interest being relatively smaller, different levels of governance were involved. The partners proceeded in





sharing a tentative list of topics that was agreed upon by Competent Authorities and regional governances. In particular the event was designed to discuss on:

• relevance of tourism and maritime transport in the area within the Slovenian and Italian MSP processes and in relation to MSFD implementation,

- evidence-based concerns about interactions among maritime uses (e.g. tourism, maritime transport, and other relevant uses in the area) and between maritime uses and environmental protection in the area,
- analytical tools to support impact and conflict analysis in MSP,
- possible common initiatives fostering the coexistence between tourism, maritime traffic and marine ecosystems and biodiversity protection in the area.

Workshop Development

Invitations were then sent, in agreement with CAs, to Slovenian maritime authorities including the Slovenian water agency, to the port of Koper authority, to the municipalities of Ankaran, Koper, Izola and Piran. The Italian Insitute ISPRA (Ministry of Environment), the Italian Regions Veneto and Friuli Venezia Giulia (planning and fisheries directorates), to the port authorities of Venice and Trieste.

In addition Miramare MPA and Strunjan Park directorate were informed. Research institute and NGO were also contacted (Marine biology station Piran, Blue World).

As the agenda was defined it became clear that it could be of interest to have the event back to back with the EUSAIR's Thematic Steering Group for Environmental Quality (TSG 3) workshop with the Eusair representatives presenting the programme current actions and objectives.

The event was structured around initial presentations of national plans, with Italy describing in detail what Friuli Venezia Giulia and Veneto region had decided in terms of measures in sub-areas (Italian planning process revolves around great input of regional bodies).

A second session with three main topics: Impacts and conflicts/synergies, Tools to support impact and conflict/synergy analysis in MSP, Discussion on opportunities for transboundary cooperation and an open table closed the event.

Main conclusions

As shown in the attached report the exchange was appreciated by the involved parties with a good attendance that was replicated during the TSG3 event of the following day when the





project and event results were presented and informed future prospects of cooperation in cooperation action and projects.

Annexes: VIII Report of Bilateral event SL-IT

4.2.5 Ionian Sea and the Central Mediterranean Sea (IT-MT)

Introduction

Building on the interest triggered by the Italy-Greece and Eastern experience the Italian and Maltese partners considered that cultural assets could be of interest also in the shared area in the Ionian and Central Mediterranean Sea. The Italian Ministry of Culture and the Superintendency of the Sea showed interest in taking part in the exchange, similarly the Maltese Superintendence of Cultural Heritage and the Heritage Malta's Underwater Cultural Heritage Team gave a positive opinion.

Workshop Development

The event was therefore organized to take place back-to-back with the Westmed Initiative Hackathon and in the same venue as suggested by DG Mare and asked by representatives of the Initiative.

The event was therefore designed with presentations of the two states MSP planning approach with focus on UCH, the national specificities in terms of UCH management (in the Italian case the Sicilian case was presented per se, being an autonomous region).

The event was introduced by an MSP Platform presentation sharing the results of a recent study on MSP and UCH.

Main Conclusions

The event was closed by a moderated open table that highlighted possible means of cooperation and information sharing between the two countries.

Annexes: IX Report of Bilateral event IT-MT





Results and lessons learnt

The results of the activities carried out in the framework of the task showed a great appreciation of knowledge sharing, that had already emerged from the technical workshops of T2.7.

The task proved that there are many issues that are of concern at transboundary level, and this without even entering the difficult topic of marine borders, now under agreement⁴.

It emerged that some issues need to be enlarged because the bilateral dimension is not sufficient, it was clearly the case of cetacean movements and conflicts with maritime uses in the western Mediterranean, namely shipping routes crossing several borders.

It appears that data harmonization, data filling and sharing at EU level will ease some of the challenges ahead, but establishing reliable and fast channels of communication between policy makers and enforcers seems of utter relevance. Shared tools may also support agreed management.

In terms of research and innovation it appears that further projects will be needed to fully develop blue corridors, joint monitoring and management tools.

The partners designed workshops that could open new possibilities in terms of study of how some topics are addressed by MSP at Mediterranean level(Landscape, UCH), considering the specificity of the basin in this regard.

Topics and issues that are well known were approached involving several levels of governance and operational branches in terms of research, surveillance and enforcement that had the opportunity to benefit first hand from the exchanges.

Different traditional methods of facilitation and moderations were employed: whiteboards and stickers, roundtables, polls.

The reports and studies that constitute the core body of this annexe are a material that, paired with D40 can guide the evolution of Mediterranean MSP providing suggestions to practitioners, governments, the EC. A core pattern is the need to develop Mediterranean

⁴ The Italian Ministry of Foreign Affairs and International Cooperation (MAECI) was kept informed of all events involving Italian partners to ensure that the project did not interfere with ongoing diplomacy.



communities of practice, involving all level of governance, technicians and practitioners for the different transboundary uses and MSP proved a useful framework to make this happen.

The institutional network of project partners was a pivotal element to engage with the great number of stakeholders, the good communication among partners and the good relationships between involved countries were the assets that made the organization of events possible but the strengthening of the same channels can also be listed among the results of this task.

Essential references

Directive 2014/89/EU establishing a framework for maritime spatial planning

Specific references are listed in each of the annexed documents





Annexe I – Planning the offshore Gulf of Lion in respect with ecosystems

Building on task results to inform national maritime policies



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MSP-MED | France-Spain workshop

Cross-border Workshop January

18th 2022 - 9.30h-12.30h

What is addressed in the task 2.2 of the MSPMED project?

In this action, we have taken a large vision of the "Gulf of Lions" area, lying from South of Barcelona to Marseille. But actually, assessments and reflexions could concern the whole Wes-Med sea basin.

Within the work package dedicated to supporting Member States within setting-up Maritime Spatial Plans, the OFB (Office Français de la Biodiversité) and IEO(CSIC) (Instituto Español de Oceanografía) team, in collaboration with FEM (France Énergies Marines), aims at providing a common and updated knowledge about ecological stakes in the Gulf of Lions and their interactions with human activities, concretely with offshore windfarms (OWF). In line with the importance of conducting a coordinated and coherent transboundary MSP process, the Gulf of Lions case study, thus, has several objectives:

- Task 1: To build and promote a global view of ecological stakes and their evaluation in the Gulf of Lions, especially related to cetaceans, sea turtles, seabirds and deep habitats;
- Task 2: To provide knowledge about interactions between Mediterranean ecosystems and maritime uses, with a specific focus on offshore windfarm development in the Gulf of Lions area;
- Task 3: To assess the effects of noise pollution caused by intense activities, such as maritime transport and offshore windfarms, on the pelagic component and especially cetacean species.

Tasks 1 and 2 rely upon the expertise of scientists and managers involved in data acquisition, analysis and evaluation processes in the study area. These two tasks were carried out by an in depth desk analysis of the MSPMED team and then by sharing expertise through a sequence of several technical expert meetings on the main ecological components: marine birds, marine mammals and sea turtles, benthic habitats, pelagic habitats, fish and cephalopods.

Task 3 aims to analyse underwater noise generated by the marine traffic, which is proven to adversely affect the marine environment producing different types of effects on the pelagic component, especially on cetaceans. With this regard, underwater noise has been analysed using AIS data from maritime traffic to generate underwater noise propagation models in the Gulf of Lions. In addition, a tentative assessment on a hypothetical pilot OWF has been modelled to evaluate how underwater noise from OWF could also have an effect in the marine environment, in addition, to the noise produced by maritime traffic. Next step will be to overlap underwater noise propagation models with cetaceans' distribution to evaluate how underwater noise is affecting these species in the Gulf of Lions.

Which are the objectives of this workshop?

The first objective is to present the main outputs and findings of the tasks to French and Spanish administrations in charge of MSP, environment and energy policies and to the experts involved in the technical meetings.

Then, a feedback of the task implementation will be done and exchanges will focus on perspectives to consider findings and recommendations in maritime policies at national and transboundary scale and opportunities to go on with dynamics created by the project:

- What are the benefits of the crossborder collaboration from a scientific point of view? What could be the benefits of the crossborder collaboration from the maritime policies point of view?
- How does the resulted evaluation on environmental stakes or on interactions could be considered in national MSP (design of the plans, stakeholder consultations, SEA/EIA, licencing...)?
- Do cooperation structures or processes already exist to foster this technical cooperation (Regional Sea Convention, MSFD, EU assistance mechanism, PSSA...)? If the answer is no, do you consider appropriate to establish a technical working group to continue with the work started in the MSPMED project? How could it be organised?

Program		
09:30	Welcome and introduction	
09:40	 Presentation of the main outputs Knowledge synthesis on environmental stakes (15' + 10' of Q&A) Knowledge on interaction between offshore windfarms and ecosystems (15' + 10' of Q&A) Effects of noise pollution (15' + 10' of Q&A) 	
10:55	5' Break	
11:00	Feedback on the method from 2 or 3 involved experts	
11:15	Open discussion on perspectives to go on with engaging dynamics	
12:30	End	

Programme

Main outputs of the 3 subtasks

Task 1: Knowledge synthesis on environmental stakes

The presentation aimed at illustrating the process of knowledge mobilization about cetacean, sea turtles and seabird in the Gulf of Lions area. After an overview of existing datasets and their properties, the knowledge synthesis was presented through a scheme linking ecological data, the primary results that can be deduced from such data, the subsequent -commonly used-methods and the final ecological parameters that are obtained, and then used as a baseline information in evaluation processes.

The results of technical meetings conducted with French and Spanish experts were then detailed, with a specific focus on remaining knowledge gaps relative to the distribution (e.g. functional areas, predictability) and abundance (e.g. estimates, trends) of cetacean, sea turtle and seabird species in the Gulf of Lions. Several perspectives to bridge those gaps were then highlighted, referring to four main axes that rely upon transboundary cooperation and coordination: data sharing, new data acquisition, increased analytical effort, and facilitated knowledge sharing.

Exchanges following results presentation reaffirmed the need and willingness for supported data sharing mechanisms, at national and crossborder scales. Moreover, question of knowledge appropriation by decision makers was addressed, pointing at the need to put efforts on knowledge transferability.

Task 2: Knowledge on interaction between offshore windfarms and ecosystems

FEM presentation aimed to present the method developed for this task and the main results. As floating offshore windfarms projects are still underdeveloped at european scale, the approach lead was **prospective** and aimed to identify and characterize the existing interactions between activities, pressures and ecological receptors in order to prevent the risks of interaction. Two axes were carried out in parallel: (i) a study of "activity-pressure" interactions to produce a matrix that identifies the types of pressure generated by the various types of activities linked to the development of floating OFW; and (ii) a study of "pressure-ecological receptor" interactions to give the foundations of the potential interactions. Technical meetings were allowed to give the foundations of the potentially existing interactions, which could be used later for a risk-based approach, and led to recommendations for better consideration of marine ecosystems in future offshore floating windfarms projects.

Following the presentation, it was pointed out that taking pressure intensity, depending on the intensity of uses, is still a challenge in this kind of approaches. Challenges also remain to evaluate cumulating of various pressures on the same ecological component.

It was also said that effect evaluation remains often difficult from a theoretical point of view. It is needed to get further information on windfarm planning options, beyond already known turbine technology (floating turbine in the Mediterranean Sea): location, size, number of turbines... This statement is in favour of a "scenario testing" approach.

Task 3: Effects of noise pollution

The presentation addressed the methodology used to analyse AIS data, to model underwater noise by maritime traffic for the period of January to June 2021 in the case study area. Technicalities as with regard to frequency bands and other parameters were presented. For instance, particularities of the Gulf of Lions bathymetry and bottom sediment influence sound propagation. Temporal and spatial extension of noise generated by ship traffic was presented for the 5 months calculated, showing an area of higher pressure in the transect between Barcelona and Marseille ports. Method used to model underwater noise produced by OWF was presented, highlighting assumptions and limitations of the process. This study was conducted simulating a tentative modelling for the installation of 8 windmills in front of the Catalan coast. The noise map considering both contributions of noise was presented, together with the calculation of the spatial and temporal sound pressure level extension. Next steps will involve the evaluation of the potential adverse impact of noise in some cetacean species.

Questions about the amount of input datasets that could feed the model raised the need to proof model outputs with in situ measurements.

Perspectives to extent the modelling to a broader area (ideally the West-Med basin scale) were also discussed. This question raises the need of computational resources to do so, seemingly affordable during the present year.

Experts testimony on the approach

Léa David (EcoOcéan Institut) who contributed to cetacean and birds working groups and Dorothée Vincent (OFB), expert on phytoplankton and pelagic habitats, provided a short feedback on the approach carried out in this MSPMED task.

Both of them recognized the added value of exchanging among experts of each ecological component but stressed the need to also adopt an ecosystem approach, focussing on the functional links between components.

Comparison between cetacean/birds and plankton showed that the most relevant approach could vary from a compartment to another: when a species-based approach suits quite well evaluations on cetacean and seabirds, addressing plankton require a community-based evaluation.

They also stressed the need to pursue the exchange dynamic engaged by the project, and so the need for a long tem support from national authorities.

Open discussion

The closing discussion focussed on 3 main topics:

- Perspectives for cooperation on scientific expertise
- Ways to support a durable cooperation
- Challenges to inform policy making with appropriate knowledge

Toward an improved expertise at crossborder scale

The most obvious advantage in crossborder cooperation on scientific expertise is the opportunity to share data to carry out analysis on a larger scale or on longer time series. To do so, coherence, or better, alignment of monitoring protocols should be enhanced. Data sharing also offers the opportunity to perform multi-approaches evaluations, mobilizing datasets acquired with different monitoring methods.

Modelling is now often used to evaluate distribution patterns in large scale areas. These models have to be validated with field observations. Data sharing is a way to increase model validation and so to enhance knowledge on species distribution.

Crossborder cooperation on scientific expertise can also foster the development of new analysis methods and technics.

How to support this crossborder cooperation?

It is largely acknowledged that the crossborder cooperation needs to be sustainably supported by national authorities and can not only rely on short term projects often financed by European funds (EMFAF, Horizon Europe, Cost...).

Another way to support cooperation could be to rely on the EU MSP assistance mechanism, since expertise fostered is used to inform planning decisions. Such an initiative could be supported by French and Spanish administrations.

Regional Sea conventions could also foster transnational cooperation on maritime planning by providing a frame to expertise sharing on environmental stakes or on the understanding of environmental impact of human activities in the marine environment (notably offshore windfarms). It was mentioned an already existing group in OSPAR (ICG-ORED) that could be replicated through the Barcelona convention.

The MSFD implementation is another way to exchange and link scientific expertise, although the need to involve a broader scientific community was mentioned.

Regarding in particular offshore windfarms, the setting up of a national scientific observatory and sea basin scientific committees is under reflexion to support knowledge acquisition and scientific expertise on renewable field. Fostering and organising a crossborder expertise group could be an objective of these organisations, in cooperation with neighbouring countries 'authorities.

Finally, it was also highlighted the importance to articulate national or sea basin expertise with more local levels such as regional councils or expert groups.

How to properly use scientific knowledge in policy making?

Both French and Spanish authorities expressed the need to get appropriate and updated

information on environment (a correct picture of environmental stakes). Then, based on this assessment, the planning process can focus on various scenarios testing to support decision making.

Stakeholder engagement is an acknowledged challenge in maritime planning. Therefore, appropriate and popularised information is crucial to support public consultations. However, knowledge limits must be clearly explained.

It was also mentioned that most of the EU Member States are at the step of implementing their first maritime plans. The current priority should be to properly monitor this implementation to learn about true impacts and concrete issues that need to be tackled. Scientific experts must be associated in the design of these monitoring programs that should address various scales, from local to transnational (therefor, crossborder cooperation is needed).





Annexe II – Study Document Italy-France





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Table of acronymes

PSSA	Particulary Sea Sensitive Area
ECDIS	Electronic Chart Display and Information System
EMSA	European Maritime Safety Agency
ENC	Electronic Nautical Chart
EU	European Union
IMO	International Maritime Organization
MoU	Memorandum of Understanding
MS	Member States
MSFD	Maritime Strategy Framework Directive
MSP	Maritime Spatial Planning
MSI	Marine Safety Information
NAVAREAs	Maritime geographic areas where governments are responsible for
	navigation and weather warnings
NAVTEX	NAVigational TEXt Messages
NW	Navigational Warning
RAMOGE	Agreement signed by the Principality of Monaco, France and Italy in
	1976
RAMOGEPOL	Emergency response plan implemented in 1993 by France, Italy and
	Monaco to fight against pollution
SafeSeaNet	Vessel traffic monitoring and information system
SAFETYNET	International automatic direct-printing satellite-based service for the
	promulgation of Maritime Safety Information (MSI) and Search and
	Rescue (SAR) information
SAR	Search & Rescue
WFS	Web Feature Service

Illustrations

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1. Introduction

The MSP-MED project follows the indications provided by the Directive and aims to foster harmonization of plans in the Mediterranean region. The WP4 - *Sharing Experiences Across Countries* – was in particular thought to facilitate exchanges, mainly through transboundary meetings. As part of the activities foreseen in WP 4 the transboundary cooperation between Italy and France was foreseen initially to take place during a Bilateral meeting. Following a first online cross-border Italy/France/Monaco workshop held in the framework of the RAMOGE agreement (D37) in February 2022, and Trilateral event Spain-France-Italy on underwater noise (D52) in May 2022, a second cross-border workshop was envisaged to address the topic presented in this document. However, due to the MSPMED project numerous events and tight deadlines with the project coming to an end, the partners CORILA and Shom agreed to produce this note on the basis of information shared by stakeholders on the occasion of previous workshops, meetings, and recent updates.

Detailed reasons for changing of strategy are reported in the main body of D39.

Facing the impossibility of organizing the event the project partners (CORILA-IUAV-CNR and Shom) opted for the development of a survey and its submission to prospect panellists and audience of the designed Bilateral workshop (Annexe III of D39). Those were, in fact, the main involved actors in the proposal submitted to the International Maritime Organisation (IMO) Secretariat regarding a possible PSSA (Particularly Sea Sensitive Area) in the Western Mediterranean. The area was proposed jointly by France, Italy, Spain and Monaco to the European Council and officially sent to the IMO in early September this year.

This document, based on information shared at national level and on a questionnaire addressed to key stakeholders, aims to help understand and communicate on the **proposal for the creation of a Particularly Sea Sensitive Area (PSSA) in the North Western Mediterranean** recently provided for review to the International Maritime Organization. Object of several past and future meetings organised at national and cross-border levels between authorities of France, Italy, Monaco and Spain, this proposal is a **first of its kind** case and represents a challenge, considering the size of the proposed perimeter, the intensity of marine traffic in the area, and the number stakeholders and activities involved and likely to be impacted. The PSSA proposal is therefore a very **concrete example of ongoing Maritime Spatial Planning (MSP) at cross-border and cross-sectoral levels**, and helps communicating on the MSP process, objectives, challenges in the Mediterranean, and understanding its key aspects.

This note aims to contribute raise awareness around this PSSA proposal, and provide an overview of the associated context, perimeter, measures, process and next steps.





2. Context

A Particularly Sensitive Sea Area (PSSA) is "an area that needs special protection through action by IMO because of its significance for recognized ecological or socio-economic or scientific reasons and which may be vulnerable to damage by international maritime activities." Areas can be designated as PSSA if they fulfil "a number of criteria, including: ecological criteria, such as unique or rare ecosystem, diversity of the ecosystem or vulnerability to degradation by natural events or human activities; social, cultural and economic criteria, such as significance of the area for recreation or tourism; and scientific and educational criteria, such as biological research or historical value. [...] When an area is approved as a particularly sensitive sea area, specific measures can be used to control the maritime activities in that area, such as routeing measures, strict application of MARPOL discharge and equipment requirements for ships, such as oil tankers; and installation of Vessel Traffic Services (VTS)" (IMO, 2019)

The Mediterranean Sea is a hot spot where cross-border and cross sectoral cooperation has become essential. The RAMOGE Agreement (named initially after the 3 cities Saint **Ra**phaël, **Mo**naco and **Ge**noa of the 3 respective participating countries), for example, was ratified in 1976 by Italy, France and Monaco and falls within the framework of the Barcelona Convention and the Action Plan for the Mediterranean Sea. This agreement was presented on the occasion of an MSPMED workshop organised in February 2022, reuniting the authorities of the 3 States and involving stakeholders from MSP and maritime surveillance (see workshop report D37). The associated RAMOGEPOL plan coordinates for example the actions of the 3 States of France, Monaco and Italy, in the event of pollution outbreaks to ensure sustainable and integrated coastal management and thus preserve the marine environment.

1. North Western Mediterranean Sea: a risky area for cetaceans

The preservation of Marine biodiversity is a priority for Mediterranean States given its challenges and importance on the economy.

Ship strikes were identified as a major cause of death of cetaceans.







Studies showed that both fin whales and sperm whales, two cetacean species identified as vulnerable by the International Union for Conservation of Nature¹ (IUCN), are at high

risk of collisions in the North Western Mediterranean Sea.



This high risk is related to the intense maritime traffic and the concentration of these two species in the region.

Figure SEQ Figure * ARABIC 2 Sperm whale, Courtesy of N. Di-Méglio / EcoOcéan Institut



¹ www.iucn.org

Msp-Med Towards the operational implementation of MSP in our common Mediterranean Sea

Figure Fin whale, Courtesy of N. Di-Méglio / EcoOcéan Institut





The risk of collision between a whale and a ship is for example more than 3 times higher in the area than in any other parts of the Mediterranean Sea, and 9% of sperm whales sighted in the area bear scars from collisions.

Figure SEQ Figure * ARABIC 4 Fin whale cut by propeller, Courtesy of EcoOcéan Institut

2. Proposal by France, Italy, Monaco and Spain of a Particularly Sensitive Sea Area (PSSA)

On 8 September 2022, France, Italy, Monaco and Spain submitted a proposal to the International Maritime Organisation (IMO) through the European Commission for the designation of a Particularly SensitiveSea Area in the North Western Mediterranean Sea. The document is available in Appendix I of this report.

This proposal aims to increase awareness of the North Western Mediterranean area as of critical importance for the fin whale and the sperm whale, and to better protect the large and medium-sized cetaceans by preventing ship strikes and pollution generated by vessels.

The proposal will be the object of discussions of the IMO Marine Environment Protection Committee 79th session (MEPC 79, agenda Item 10) that will take place from the 12 to the 16 December 2022. The document is shared on the IMO's website and is attached to this note in Appendix II.

The proposal has two objectives: (i) designate the PSSA area, and (ii) implement measures to reduce the risk of ship strikes.

Following the IMO's session in December, the measures might be submitted for study to sub-committees by 2023. If implemented, these measures would help better protect cetaceans, and have positive impacts on the safety of maritime traffic in the area and indirect outcomes on the environment's preservation, through the reduction of greenhouse gas emissions, air pollutants and underwater noise.





3. Proposed Perimeter

The proposed area is located north of a line and bounded by the coastlines of France, Italy, Monaco and Spain.

It includes the Spanish cetacean corridor and the Pelagos Sanctuary, and takes into account the ability of cetaceans to cover long distances as well as their high concentration in the area.

The size of the area involved makes this PSSA proposal a first of its kind, and also represents an opportunity to set a precedent. Due to the intensity of the traffic in the area, the high number of stakeholders and activities involved, the measures proposed for the implementation of this PSSA were specifically discussed during the consultation with the stakeholders.



Figure SEQ Figure * ARABIC 5 PSSA proposed Perimeter in the document submitted to IMO - Source: Shom





4. Proposed measures

Measures of a voluntary nature were proposed to reduce the risk of ship collisions with cetaceans, among which: the establishment of an appropriate safety distance, the adoption of a safe speed in the presence of cetaceans, the reporting of collisions, the broadcasting of information on the presence of cetaceans, or the equipping crews with binocular infrared goggles. More specifically a 13 knots speed limit for all vessels was proposed, alongside with the recommendation to use infrared glasses to help cetaceans detection and use of the NAVTEX device to inform other ships about cetaceans presence.

According to the impact assessment associated with the proposal, due to the voluntary character of the measures, economic impacts should remain low.




5. Process and steps

The submission of the PSSA proposal represents a major step towards the creation of a PSSA in the North Western Mediterranean Sea. To reach this stage, an active cooperation was set which involved numerous interactions and meetings. The process is described hereunder.

1. Process overview

The proposal is part of the action plan "The Mediterranean: A Model Sea by 2030" (PAMEx), launched during the One Planet Summit in January 2021 and presented at the IUCN Congress in Marseille (France) on 3 September 2021. The event was followed by an extended consultation of coastal states, environmental associations and NGOs, representatives of the maritime world and international organisations.

Following national consultations, an agreement was reached between the four coastal States on the delimitation of the perimeter and on the associated protection measures to be implemented within the PSSA.

On 8 September 2022, the proposal for the creation of the PSSA in the North Western Mediterranean Sea was issued by France, Italy, Monaco and Spain, and submitted to the International Maritime Organisation (IMO) through the European Commission (submission document available in Appendix I).

The document is on the agenda of the 79th Marine Environment Protection Committee that will be held between the 12 and 16 December 2022 in London. The document currently available for consultation on the IMO's website (under document MEPC 79/10, and is provided in APPENDIX II of this note.

As previously mentioned, the first objective is to designate the area. The second will be to look into measures proposed.

The measures proposed might be submitted for further study to sub-committees by 2023.

Before the IMO EMPC session end December, another meeting is planned by the end of October reuniting the four States involved.

The EU community coordination should take place from November 25 until 1 December 2022.





2. Major Steps

The specific steps until the submission of the proposal to the IMO are shown in the calendar below. The steps up to June 2022 were shared by the Ministry of the Ecological Transition in France had given a detailed calendar of actions taken until June. The topic was at the time linked with the topic of underwater noise addressed by the MSPMED workshop (D52).

ECOLOGICUE	Cale	ndar
	Past Events	 6th September : IUCN workshop 18-19th October : PSSA workshop in Paris November : information papers MEPC 77 17th December : PSSA workshop in Roma 5th April : Online metting - first presentation of the draft IMO file by France 12th April : Transmission of written feedbacks of Italy/Monaco/Spain > integration in the draft file by France 20th April : Online meeting - drafting group Perimetre 21th April : Online meeting - drafting group Perimetre
	April	
	May	 Between 25 and 29 April – online meetings if necessary Beginning of May -> agreement on the file which will be transmitted to consultations Consultation of stakeholders (nationals and internationals)
	June	 10th June : Transmission of written feedbacks after stakeholders consultations of France/Italy/Monaco/Spain -> integration in the draft file by France 21th June : Online meeting - Presentation of the consolidated IMO file 30th June : Agreement on the file which will be transmitted to the IMO
	July	• 6 july : Online meeting
	September	 8 September: Submission of proposal to IMO by EU (Appendix I) 29 September: Dissemination, availability on IMO website, ref MEPC 79/10 (Appendix II)
	October	End October: PSSA meeting Italy/France/Monaco/Spain
	November	End November: EU Community Coordination (25 November to 1 December)
	December	12-16 December: Maritime Environment Protection (IMO), London





6. Design of the survey

The survey was designed to investigate the possible interaction between said PSSA and MSp in the Western Mediterranean and was structured as follows; after a brief introduction and privacy disclaimer a section was dedicated to personal data (Name, Surname, Email address, Institution and Role, Category of institution).

6.1. Process section

The main body of the survey was divided into a PROCESS section divided into three questions:

2.1 How did the PSSA proposition consider the Maritime Spatial Planning directive and the Maritime Strategy Framework Directive? (and/or other existing policies and ongoing planning activities in the area) Please answer only if your institution is concerned by the question

2.2 How did the process of designing the PSSA involve different levels of governance and institutional actors at national level? Please answer only if your institution is concerned by the question

2.3 Would the PSSA recommendations and measures be implemented through national/regional legislation? If yes how? Please answer only if your institution is concerned by the question

Aim of the section was to determine the PSSA process design in regard to MSP. Details were asked to understand if MSP had been contemplated in the design of the proposed PSSA, especially in terms of relevant European directives and main policies. A second point was to highlight which levels of governance had been involved in the process and if the PSSA would be later integrated in national legislation and at which level.

6.2. Challenges section

The second session CHALLENGES was again sub-divided into three questions:

3.1 Would the PSSA recommendations and measures be implemented through national MSP plans? Please answer only if your institution is concerned by the question

3.2 How should the PSSA be integrated into national MSP plans? In case of integration, what will be the adjustment of MSP plans needed? (at regional level, please consider also the sub-area) Please answer only if your institution is concerned by the question





3.3 Which are the institutions that would be in charge of enforcing the proposed area? And in the hypothetic case of its integration in the MSP plans? Please answer only if your institution is concerned by the question

This section was conceived to have a clear overview of the relationship between national MSP plan/s and the PSSA. The questions were conceived for national and regional representatives in order to gather ideas on how PSSA recommendations may be integrated into MSP plans. The objective was to start a reflection on best ways to integrate PSSA in different countries (e.g. measures) and who would later be entitled to enforce the PSSA-related regulations.

6.3. Opportunities section

The third section, OPPORTUNITIES was also composed of three questions:

4.1 How will the PSSA involve and interact with existing agreements (ACCOBAMS, PSSA Strait of Bonifacio...) and protected areas (Pelagos Sanctuary, Tuscan archipelago...)? Please answer only if your institution is concerned by the question

4.2 How may the PSSA be an opportunity for strengthening transboundary cooperation (knowledge sharing, common tools for monitoring and assessment, common measures, knowledge transfer, etc.) Please answer only if your institution is concerned by the question

4.3 In general, what are the expected benefits of the PSSA in your opinion and with regards to your area of expertise/action? Please answer only if your institution is concerned by the question

This section intended to investigate the transboundary role of PSSA, its interaction with existing agreements and international instruments for management (e.g. MARPOL). Cooperation and monitoring tools were also considered. More general opinion on possible effects/benefits were also asked for

Eventually an open space for suggestions was left available.

7. Results of the Survey

The surveyed people are employed by the following institutions:

- Ocean Born Foundation
- Ministry of Transport, Spain





- SAR and maritime traffic monitoring Office / General directorate of maritime affairs, fishery and aquaculture (DGAMPA), France
- · Préfecture maritime de la Méditerranée, France
- Direction interrégionale de la Mer Méditerranée (DIRM-Med), France
- French ministry of ecological transition, France
- Direction des affaires maritimes (Gouvernement monégasque), Monaco
- · Shom, France
- Office française de la biodiversité / Délégation de façade maritime Méditerranée, France
- EcoOcéan Institut
- · Italian Navy Hydrographic Institute, Italy
- Italian Region

Hence the surveyed people represent a reliable source of information, and offer, despite the limited number, a good range in terms of involved countries, however by the time of the elaboration of this document Italian authorities were still developing their answers; therefore the document cannot be regarded as finalized.

Regarding the design of the PSSA, it emerges that the proposal was built to meet the environmental objective of Marine Strategy Framework Directive (MSFD – D01 MT OEO3), reducing ship strikes with cetaceans. It also respected Monaco's maritime spatial regulation and maritime environmental policies.

It also emerges that the institutions involved in the design were the Ministries of Transport and Environment, Ministries of Ecological Transition from Italy, France and Spain, as well as Ministries of Foreign Affairs, therefore ministerial level was involved. Lower governance levels were consulted according to singular states approaches.

In France a large panel of public, private and associative actors have been involved and in terms of institutional actors they were involved at the local level (notably the Interregional Directorate of the Sea, the Maritime Prefecture, the Pelagos France) and at national level (Central Administrations of the Ministries in charge of the Environment and the Sea, OFB, Ministry of Foreign Affairs).

Several workshops were needed to establish said involvement and they also touched the private sector (e.g. maritime transport).

In regard to national law implementation, the PSSA once adopted as an IMO Resolution would become a binding legal instrument on a State provided that its contents are





incorporated into national law. And this because the resolution does not have the same value as a Convention and at this stage binding implementation is not compulsory.

However, it was indicated in the submission to the IMO that national stakeholders are expected to exchange information in order to transcribe recommendations into national laws, therefore States are strongly encouraged to go in the direction of implementation. In fact, the recommendation to legally implement them emerged during official meetings and in some cases interested departments were already involved in the process to raise their awareness of this possible outcome. A general starting point could be to develop some guidelines for Italy, Spain, Monaco and France as this work would need to be done in a concerted manner between the four States that submitted the file.

If the PSSA were to be implemented in national legislation there is the likely possibility that it will need to interact with the MSP national plans, for the moment references were only made to the environmental objective of Marine Strategy Framework Directive (MSFD – D01 MT OEO3). In the French case they would be considered during the update of the *"Document stratégique de façade* (DSF)" in 2023, which will also consider energy production planning and in which the PSSA proposal is already mentioned.

At the enforcement level, in addition to the ongoing international discussions, it appears that local and national level will have to coordinate, and this among Ministries involved and regional and local bodies. For Monaco the likelier body to enforce it is the Coast Guard belonging to Maritime and air police division and maritime affairs direction.

Since the effectiveness of the rule is not only due to its imperative nature of a norm and its content, but also to the fact of being able to monitor its application and associate sanctions with it, this is especially interesting to ensure that ships flying another flag are not treated more favourably transiting within the PSSA in order to ensure compliance with the associated protective measures. It may be necessary, in the future, to put in place incentive measures to accompany the protective measures that will be retained and brought to the knowledge of the maritime community (Eco label, reduced port fees).

A tentative reflection provided by a representative of an Italian Regional body suggests that the establishment of the new PSSA could be integrated into the Italian Maritime Spatial Management Plan by:

- The inclusion of the PSSA in the description of the context analysis, as was already done for PELAGOS and the Strait of the Bonifacio PSSA declared in 2011;

- The update of the analysis of conflicts between different uses of the sea and between uses and the environment;

- The update of strategic objectives at the Maritime Area level and specific objectives at the sub-area level;





- The updating of the table of uses concerning all Planning Units falling under the new PSSA, both at the level of territorial waters and at the level of waters beyond 12 nautical miles;

- The introduction of new Plan Measures, at the maritime Area and sub-area level, that trace those indicated by the IMO in the measure establishing the new PSSA.

The interaction with other agreements and protected areas shows some issues in conservation experts: there appears to be concerns that, if not carefully designed, a new PSSA could end up directing more traffic through the Mediterranean Sea north of Menorca. This may have significant impacts because recent findings (from Tursiops Marine Research) reveal that this zone is a breeding ground for the endangered Mediterranean Sperm Whale.

The Spanish Ministry, for instance, intends to develop the existing interactions. In general, the PSSA is expected to promote the action of ACCOBAMS as it includes the PELAGOS sanctuary and the corridor of Spanish cetaceans, bridging and merging them. In the future a memorandum of understanding between the proposer countries may bring coherence to prospect governance and management (training, innovation, control, etc.) as stated in the IMO proposal.

In fact, if the actors and representatives of the different existing agreements in the area have participated throughout the elaboration of the proposal (e.g. ACCOBAMS) and there is a need to fully harmonize management plans of areas and parks within the PSSA framework.

Considering how the PSSA can contribute to strengthen transboundary cooperation there is a concern regarding data collection and sharing that is needed and could be fostered.

France, Spain, Italy and Monaco should, by means of the Memorandum of Understanding (MoU), harmonize and facilitate the collection of data within the PSSA with the aim of better informing ships on the presence of cetaceans and implementing incentive measures to ships following the PSSA's recommendations to protect cetaceans.

This MoU should also make it possible to create synergies between the riparian States in order to support the development of new technologies for detection at sea and thus reducing ship strikes of cetaceans, as well as the implementation of incentive measures. The coastal States should consider fund research activities in connection with industry and the scientific and research community, actions to raise the awareness of shipping stakeholders on the protection of cetaceans and the implementation of incentive measures to ensure compliance with the recommendations. Emerging devices in the future could, for example, include passive acoustic monitoring, predictive modelling or tagging of cetaceans. There are currently known methods providing such information on a scale that could be of interest to minimize the risk of collision which deserves to be deployed and integrated into the chain of navigational warning broadcasts to inform navigators in due time.





A connected point of interest is on shared governance in the detection of cetaceans in the PSSA that may facilitate the said collection of data, especially:

- direct observation from navigators on ships;
- detection by any shipborne system; and
- detection by a network of acoustics buoys monitored by riparian States.

It also emerges that the proposing states should encourage the review of the adopted measures after a certain time to assess their effectiveness, the opportunity to implement new operational measures at national and international level in order to limit the pressures generated by the maritime traffic on medium and large cetaceans.

At the scientific level, relevant studies made in his area for fin or sperm whales should be supported by at least two countries involved in the PSSA proposal.

As main foreseen benefits they are mainly environmental, namely for the protections of cetaceans by reduction of ship strikes. It could also contribute in informing seafarers and the public about the need for protection in the area.

It may allow States to coordinate and work together better towards common objectives, and work as an international lever for a more ambitious strategy and should be dealt with underwater noise regulation in the future.

It may trigger an improvement for real-time observation devices that can be shared and used by all PSSA States.

The PSSA is considered to be at the appropriate spatial scale to work on the knowledge and management of mobile species and can allow the initiation of strong offshore protection zones. It is also an opportunity to ensure links with existing marine protected areas (MPAs) and to have coherent actions on mobile species at the scale of the different countries.

At a scientific level it may encourage collaboration among scientists but also scientists and decision makers and marine traffic companies. This area might be a real case with measures implemented (compared to some paper MPA) and a pilot study to monitor any effectiveness of mitigation measures.

It also emerged that there is the need to strengthen connections (through workshops and meetings) between MSP community and biological and marine protection/conservation communities and that the PSSA is hoped to send the important message towards economic sectors and civil society that it is possible to create large PSSA and implement concrete measures to preserve the environment.





8. Discussion and conclusions

The results of the survey seem to highlight that the relationship between PSSA recommendations and MSP national processes (at the time of the proposal they were ongoing) was not especially strong. However, the common relationship with the MSFD and involved stakeholders should grant a good level of integration, if needed. In fact, to this day the proposal is yet to be approved and, in case of approval the implementation into national laws is not mandatory but only recommended.

It is, however, likely that if IMO provides its acceptance for the PSSA and countries opt for a binding implementation, the recommendations would interact with MSP plans that, in the involved countries, have all considered nature protection. In this sense, after approval by IMO, the Memorandum of Understanding [ASD1] should highlight several points that are yet not been fully defined. In the meantime, there is the possibility that guidelines would be discussed to harmonize different national approaches at the transnational coordination committee and, hopefully, they would consider MSP plans. A key point is data collection, monitoring and sharing and transboundary level that has several points in common with MSP needs and Ecosystem Based Approach, once more the ongoing development of MSP plans could inform or find synergies with the establishment of a joint strategy on the topic.

The fact that the PSSA may act as a key case study for log-mobility of species and related conservation is regarded as an interesting outcome, especially if it triggered transboundary research initiatives and projects. Furthermore, the message that the PSSA would send in terms of marine protection is really strong in raising awareness but could also support the Restore Our Oceans initiative and UN SDG 14 achievement within the UN Ocean Decade timeslot.

In conclusion the PSSA is indeed a topic of interest in the area and surely is a ground for dialogue between Italy and France, but not limited to those countries; Spain and Monaco are also involved and it may play a role in driving other conservation measures in cooperation with non-EU countries in the basin.

The work carried out in this document can be regarded as an enhancer of the possible integration or synergies between this PSSA and MSP national plans, also in regard to transboundary monitoring and management actions.

9. References

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<u>CEREMA (2021)</u>. Protecting large cetaceans from the risk of ship strikes in the Mediterranean Summary of the preparatory study for the submission to the International Maritime Organisation (IMO) of a file for the designation of a Particularly Sensitiv e Sea Area (PSSA) in the Western Mediterranean.





Directive 2014/89/EU establishing a framework for maritime spatial planning Marine Spatial Planning (MSP) Toolkit (Chapter 4) Marine Spatial Planning A Step by Step Approach toward Ecosystem-Based Management (Chapter 4)

MSPglobal International Guide on Marine/Maritime Spatial Planning

<u>COMMISSION STAFF WORKING DOCUMENT Union submission to the the 79th session of the International</u> <u>Maritime Organization's Marine Environment Protection Committee proposing to designate a Particular</u> <u>Sensitive Sea Area in the North-Western Mediterranean Sea to protect cetaceans from international shipping</u>

IMO (2019) Particularly Sensitive Sea Areas web presentation

Appendix II.1: EU Submission document Appendix II.2 : IMO document MEPC 79/10 Appendix II.3 : MSP-MED Questionnaire





Council of the European Union

> Brussels, 4 August 2022 (OR. en)

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COVER NOTE

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date of receipt:	2 August 2022
То:	General Secretariat of the Council
No. Cion doc.:	SWD(2022) 213 final
Subject:	COMMISSION STAFF WORKING DOCUMENT Union submission to the the 79th session of the International Maritime Organization's Marine Environment Protection Committee proposing to designate a Particular Sensitive Sea Area in the North-Western Mediterranean Sea to protect cetaceans from international shipping

Delegations will find attached document SWD(2022) 213 final.

Encl.: SWD(2022) 213 final



EUROPEAN COMMISSION

> Brussels, 2.8.2022 SWD(2022) 213 final

COMMISSION STAFF WORKING DOCUMENT

Union submission to the the 79th session of the International Maritime Organization's Marine Environment Protection Committee proposing to designate a Particular Sensitive Sea Area in the North-Western Mediterranean Sea to protect cetaceans from international shipping Union submission to the 79th session of the International Maritime Organization's Marine Environment Protection Committee proposing to designate a Particular Sensitive Sea Area in the North-Western Mediterranean Sea to protect cetaceans from international shipping

PURPOSE

This Staff Working Document contains a draft Union submission to the International Maritime Organization's (IMO) 79th Marine Environment Protection Committee (MEPC 79). The IMO has indicatively scheduled MEPC 79 from 12 to 16 December 2022.

The draft submission suggests designating a Particular Sensitive Sea Area (PSSA) in the North-Western Mediterranean Sea (NW Med PSSA). The area is limited by the coastline of France, Italy, Monaco and Spain and, towards the South includes sea areas under the jurisdiction of the mentioned coastal States. Due to the significance of the ecological, socio-economic and scientific values of the area, several national and international measures are in place. The designation of a PSSA and the associated protective measures will contribute to protect cetaceans by minimizing the risk of ship strikes and support scientific research on the matter.

EU COMPETENCE

Directive 2008/56/EC establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive)¹ in its article 13 paragraph 4 includes spatial protection measures, contributing to coherent and representative networks of marine protected areas, adequately covering the diversity of the constituent ecosystems, such as, among others, marine protected areas (MPAs) agreed by the Union or Member States concerned in the framework of international or regional agreements to which they are parties. In addition, the Marine Strategy Framework Directive in its Annex I includes underwater noise in its descriptors for determining good environmental status, including the protection of cetaceans. The criteria and methodological standards for the determination of good environmental status are further defined in Commission Decision 2017/848/EU². Europe's seas and oceans are natural and essential allies in tackling the climate and biodiversity crises. The new communication on the Sustainable Blue Economy³ sets out a detailed and realistic agenda for the blue economy to achieve the European Green Deal's objectives.

Furthermore, in relation to biodiversity preservation and existing MPAs in these marine waters in particular relation to MARPOL Annexes I and II, Member States have to meet the obligations stemming from existing EU rules. These are laid down in Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora⁴, the Directive 2005/35/EC on ship-source pollution and on the introduction of penalties for infringements⁵ and Directive 2019/883 on port reception facilities for the delivery of waste from ships, amending Directive 2010/65/EU and repealing Directive 2000/59/EC⁶.

In addition, Directive 2002/59/EC on establishing a Community vessel traffic monitoring and information systems as amended⁷ promotes and regulates the use of routing systems and mandatory ship reporting systems by EU Member States. In accordance with Article 23 (c) of this Directive, EU Member States and the Commission shall work together to put in place, where necessary, mandatory reporting systems, mandatory maritime traffic services and appropriate ship's routing systems, with a view to submitting them to the IMO for approval. The PSSA process would entail that IMO would develop measures including mandatory reporting systems, mandatory maritime traffic services and/or

¹ OJ L 164, 25.6.2008, p. 19.

² OJ L 125, 18.5.2017, p. 43

³ https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2021:240:FIN

⁴ OJ L 206 22.7.1992, p. 7

⁵ OJ L 255, 30.9.2005, p. 11

⁶ OJ L 151, 7.6.2019, p. 116

⁷ OJ L 208, 5.8.2002, p. 10

ship's routing systems, shipping routes or re-routing, traffic separation schemes or similar.

In light of all of the above, in so far as far as the present submission may lead to the undertaking of international commitments in an area already largely covered by EU rules, which risk being affected or altered by such commitments, the present draft Union submission falls under EU exclusive competence.⁸ This Staff Working Document is presented to establish an EU position on the matter and to transmit the document to the IMO prior to the required deadline of 9 September 2022.⁹

⁸ An EU position under Article 218(9) TFEU is to be established in due time should the IMO Marine Environment Protection Committee eventually be called upon to adopt an act having legal effects as regards the subject matter of the said draft Union submission. The concept of '*acts having legal effects*' includes acts that have legal effects by virtue of the rules of international law governing the body in question. It also includes instruments that do not have a binding effect under international law, but that are '*capable of decisively influencing the content of the legislation adopted by the EU legislature*' (Case C-399/12 Germany v Council (OIV), ECLI:EU:C:2014:2258, paragraphs 61-64). The present submission, however, does not produce legal effects and thus the procedure for Article 218(9) TFEU is not applied.

⁹ The submission of proposals or information papers to the IMO, on issues falling under external exclusive EU competence, are acts of external representation. Such submissions are to be made by an EU actor who can represent the Union externally under the Treaty, which for non-CFSP (Common Foreign and Security Policy) issues is the Commission or the EU Delegation in accordance with Article 17(1) TEU and Article 221 TFEU. IMO internal rules make such an arrangement absolutely possible as regards existing agenda and work programme items. This way of proceeding is in line with the General Arrangements for EU statements in multilateral organisations endorsed by COREPER on 24 October 2011.

IDENTIFICATION AND PROTECTION OF SPECIAL AREAS, ECAS AND PSSAS

Designation of a Particular Sensitive Sea Area in the North-Western Mediterranean Sea to protect cetaceans from international shipping

Submitted by Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the European Commission in the interest of the European Union¹⁰

SUMMARY			
Executive summary:	This document suggests the designation of a Particularly Sensitive Sea Area (PSSA) in the North-Western Mediterranean Sea. The area is limited by the coastline of France, Italy, Monaco and Spain and includes areas under the jurisdiction of coastal States. Due to the significance of the ecological, socio-economic and scientific values of the area, several national and international protective measures are in place. The designation of a PSSA and the additional associated measures will contribute to protect cetaceans, minimising the risk of ship strikes and support scientific research on the matter.		
Strategic direction, if applicable:	4		
Output:	4.1		
Action to be taken:	[Paragraph 9,10,11,12 and 13]		
Related documents:	MEPC 59/18, MEPC 77/INF.27, MEPC 77/INF.28, MEPC 69/10/3.		

Introduction

1 France, Italy, Monaco and Spain propose the designation of a Particularly Sensitive Sea Area (PSSA) in the North-Western Mediterranean Sea, hereinafter referred to as "NW Med PSSA", in order to protect cetaceans from the risk of ship collision's, ship-generated pollution and to increase awareness on a critically important area for the fin whale and the sperm whale.

¹⁰ Monaco will be included as cosponsors pending the agreement of Council's Shipping Working Party

2 Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Hungary, Ireland, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Sweden, as members of the European Union, associate themselves with this proposal as they share a common interest with the riparian States.

3 The Mediterranean Sea is both strategic for human activities at sea and for the preservation of remarkable biodiversity. The proposal is justified by the international nature of the vessels and the particular concentration of marine mammals in the concerned area, as well as by the plurality of coastal States concerned or associated Following up on the Committee's recommendation at MEPC 77, international workshops with all the stakeholders have taken place to define the geographical scope and nature of the associated protective measures.

Proposed PSSA

4 The proposed NW Med PSSA is located between the coastline of France, Italy, Monaco and Spain and, towards the South, a line defined by the coordinates set out in Annex III to this document and shown in Figure 1.



Figure 1: proposed NW Med PSSA (Source: SHOM)

5 The proposed NW Med PSSA encompasses the whole Pelagos Sanctuary and the Spanish cetacean corridor, which are already designated as Special Protected Areas of Mediterranean Importance (SPAMIs) under the Barcelona Convention and the UN Mediterranean Action Plan (section 3.9.1.1 in the Annex 1) dedicated to the conservation of cetaceans. It also includes two Ecologically and/or Biologically Significant marine Areas recognized by the Convention on Biological Diversity (CBD) (section 2.1.2 in Annex 1). 6 The Mediterranean Sea is both strategic for human activities at sea and for the preservation of its remarkable biodiversity. It is one of the 34 "hot spots" for global biodiversity, representing 10% of global biodiversity with 28% of identified endemic species. It is a crossroads for global maritime exchanges, an attractive area for tourism and traditional activities such as fishing, and a place hosting unique natural habitats and species.

7 Ship traffic in the Mediterranean Sea area is substantial as it is navigated by more than thirty thousand vessels annually, with most vessels calling on Mediterranean ports and engaging in regional commerce among the Mediterranean coastal States. The Mediterranean is also an important region for international shipping and commercial navigation. The Mediterranean Sea represents approximately 0.7% of navigable seas and oceans, and Mediterranean ship traffic accounts for about 7% of global shipping activity, energy use, and emissions. In particular, nine of the 20 largest cargo ports of the European Union are in the Mediterranean region; four of these - Barcelona, Genova, Marseille and Valencia - are within the proposed PSSA.

Among the pressures on the marine environment, international shipping traffic has been identified as a threat to the conservation of cetaceans, particularly in terms of accidental mortality and serious injuries to large cetaceans, such as the fin whale and the sperm whale, together with chemical and acoustic threats. Based on such threats, the cosponsors propose to the Committee the designation of the NW Med PSSA. This approach is justified by the global scale of the shipping traffic in this area, the high concentration of cetacean species in this area (Fig. 2 and 3 in Annex 1) as well as by the diversity of coastal States concerned. The proposal is in line with the Organization commitment set out in Circular MEPC.1/Circ.674 of 31 July 2009, setting out a guidance document for minimizing the risk of ship strikes with cetaceans.

Description, significance of the area and vulnerability

9 Further details of the proposal related to the description, significance of the area and vulnerability are provided in Annex 1 in accordance with the revised guidelines for the identification and designation of particularly sensitive sea areas (resolution A.982 (24), as amended by resolution MEPC.267 (68)):

Associated protective measures

10 Annex 2 provides details on existing and proposed associated protective measures in accordance with resolution A.982 (24), as well as prospective measures for the future.

Existing associated protective measures

11 The area identified already benefits from existing protective measures consisting in the following:

- 1. the designation as a Special Area (SA) of the entire Mediterranean sea under Annexes I and V of the MARPOL Convention;
- 2. Other national existing associated protective measures listed in Annex 2.

However, these existing protective measures allows further protection only on specific threats, such as the discharge of oil or oily mixtures and the discharge of garbage, or only in some parts of the area. Therefore, in order to complement them, and to include ships strikes mitigation the co-sponsors propose to consider and develop additional associated protective measures.

Proposed associated protective measures

12 The co-sponsors propose to consider the following non-inclusive set of recommendations as associated protective measures within the NW Med PSSA. These measures could significantly enhance the protection of cetaceans in the NW Med PSSA. They could become mandatory or voluntary after careful consideration by the Committee of their design, their scope, their effectiveness, their legal status and their possible combination, due to the complexity of environmental issues at stake and the diverse nature of the shipping traffic in the area.

13 In particular, the recommendations to seafarers/ship operators 1,2,3,4,5,6 and 7 described below shall be clearly indicated on nautical charts, nautical publications and nautical information:

- 1. Seafarers/ship operators should navigate with particular caution within the NW Med PSSA, when and where large and medium cetaceans are present to limit their speed between 10 and 13 knots as voluntary speed reduction, while seeking to avoid possible negative impacts of reduced speeds on manoeuvrability and underwater noise in absence of other design adaptations on the ship;
- Ships should to avoid large and medium cetaceans and keep an appropriate safety distance or speed reduction measure from any large and medium cetaceans observed or detected in close quarter situation. A safety distance or speed reduction measure should be adapted to the circumstances and existing conditions;
- 3. Ships should broadcast by VHF or other suitable means on the area the position of medium and large cetaceans observed or detected and should transmit the information and the position to a designed coastal Authority;
- 4. Ships should report any collision and near miss collision with cetaceans to a designated coastal Authority(ies). Designed coastal Authority(ies) should forward this information to the International Whaling Commission (IWC), which holds a global cetacean ship strikes database;
- 5. Designated coastal Authority(ies) should broadcast information, when needed, to ships about the presence of large and medium cetaceans as navigational warning;
- 6. Ship masters should determine the watchkeeping arrangements taking into account the presence of large and medium cetaceans, including the use infrared binocular to help the detection of large and medium cetaceans by night or fixed infrared camera detection system. These systems would help to detect not only large and medium cetaceans, but also any man-overboard or castaways by night;
- 7. The designated coastal authorities should prepare material, and disseminate information in order to raising awareness on the crews (by means such as the publication of materials) and increase their knowledge on the protection of the marine environment on the PSSA with a particular emphasis on cetaceans.

14 If the Committee agrees to designate the NW Med PSSA based on the consideration of the above protective measures, the co-sponsors suggest deferring to the appropriate body (e.g. the Maritime Safety Committee and/or the Sub-Committee on Navigation, Communications and Search and Rescue and/or the Sub-Committee on Design and Construction) the task to further develop and adopt the proposed associated protective measures. The co-sponsors also suggest that the Committee invites delegations to submit concrete proposals for further consideration of any other possible prospective associated protective measures with a view to enhance the effectiveness of the NW Med PSSA in protecting cetaceans from shipping traffic.

Prospective protective measures

15 Other associated protective measures could significantly enhance the protection of cetaceans in the NW Med PSSA:

- 1. France, Spain, Italy and Monaco should sign a Memorandum of Understanding to harmonize and facilitate the collection of data within the NW Med PSSA with the aim of better informing ships on the presence of cetaceans and implementing incentive measures to ships following the PSSA's recommendations to protect cetaceans;
- 2. The riparian states should encourage the collection of information for seafarers/ship operators through navigational warnings, in the future also in digital format through the NAVDAT system.
- 3. The riparian states should encourage the review of the adopted measures after a certain time to assess their effectiveness, the opportunity to implement new operational measures at national and international level in order to limit the pressures generated by the maritime traffic on medium and large cetaceans.

Action requested of the Committee

16 The Committee is invited to consider the proposals and information contained in this document and its annexes and take action as appropriate.

ANNEX 1

INFORMATION SUPPORTING THE PROPOSAL OF A PARTICULARLY SENSITIVE SEA AREA (PSSA) IN THE NORTH-WESTERN MEDITERRANEAN SEA

Part I – DESCRIPTION, SIGNIFICANCE OF THE AREA AND VULNERABILITY

1 DESCRIPTION OF THE AREA

The proposed area covers a perimeter corresponding to the eastern boundary of the Pelagos Sanctuary and to the west to the Spanish cetacean migration corridor. These are two Specially Protected Areas of Mediterranean Importance (SPAMI) established under the Barcelona Convention and dedicated to cetaceans including over 230 EU Natura 2000 sites (Fig. 1A). The proposed area fully or partly overlaps, under the Convention on Biological Diversity (CBD) framework, the two Ecologically or Biologically Significant Marine Areas (EBSA) and three Important Marine Mammal Areas (IMMA) identified by the International Union for Conservation of Nature (IUCN) Marine Mammal Protected area task force. This perimeter includes also most of the Strait of Bonifacio PSSA.





Figure 1: (A) legally binding area-based protection measures: SPAMIs (Pelagos Sanctuary and Spanish cetacean corridor), Bonifacio Strait PSSA and Natura 2000 sites; (B) international recognitions on the ecological and biological importance: EBSAs and IMMAs — source: ISPRA

1.1 Physical features

1.1.1 Bathymetry

The north-western Mediterranean portion of the basin is characterised by the rapid plunge of its coasts towards the deep sea (up to 2,000 metres in some area) in proximity of the main islands (Corsica and Sardinia) and off the Ligurian coasts and most of the Provence-Alpes-Côte d'Azur's and Catalonia's coasts. The continental shelf is developed off Tuscan coasts (including all around the Tuscan archipelago) and Valencian costs, with a maximum extension (about 100 km wide) within the study area in the Gulf of Lion (Occitanie).

Another notable feature of the North-West Mediterranean seabed is that is shows one of the highest densities of canyons globally, veritable submarine valleys present on the oceanic slope, generally between 300 and 600 metres deep. Canyons are usually defined from the border from the border of the continental shelf, having their « head » beginning at -200m deep, and finishing at the bottom of the oceanic bed at -2000m deep.

1.1.2 Special weather and ocean phenomena

The Mediterranean is an evaporation basin: precipitation and river inputs do not compensate for evaporation. This water deficit is made up by Atlantic water entering the surface through the Strait of Gibraltar. Less salty and therefore less dense than the Mediterranean water, this water will remain on the surface and determine the surface circulation.

The surface currents have a complex organisation, particularly around Corsica. The main horizontal marine currents have a so-called cyclonic direction (counter-clockwise). The areas where they reach a higher intensity in our study area, i.e. an average annual speed of more than 0.25 metre per second, are the Ligurian Sea and the Tyrrhenian Sea, east of Bonifacio (Corsica). Seasonal trends show an increase in speed during the summer and autumn.

Upwelling phenomena, vertical currents that allow deep water to rise to the surface, are due to a combination of horizontal currents with the wind and can be influenced by the presence of submarine canyons. The Ligurian Sea and the northern Tyrrhenian Sea are the most exposed to this phenomenon. In spring, the increase in the temperature of the marine waters leads to a vertical stabilisation of the water masses.

Thus, marine currents play a very important role in the functioning of ecosystems: through their associated horizontal and vertical movements, they accompany the export of organic matter from the coast to the open sea.

2 SIGNIFICANCE OF THE AREA

2.1 Ecological criteria

2.1.1 Rarity

The North-Western Mediterranean is part of a semi-enclosed sea with a high rate of endemism. The vast majority of its biological populations are composed of Mediterranean subpopulations, genetically isolated from the Atlantic populations and the others.

2.1.2 Critical habitat

The ecological and biological significance of the proposed PSSA is supported by the existence of two areas listed under the CBD framework of the EBSAs, which are overlapping it (Fig. 1):

- 1. the North-western Mediterranean Benthic Ecosystems¹¹ and
- 2. the North-western Mediterranean Pelagic Ecosystems¹².

In addition, over two-third of the proposed PSSA are covered by the "North Western Mediterranean Sea, Slope and Canyon System"¹³, the "The Shelf of the Gulf of Lion"¹⁴ and the "Western Ligurian Sea and Genoa Canyon"¹⁵ IMMAs, identified by the IUCN Marine Mammal Protection Working Group. Moreover, the PSSA includes a candidate IMMA (the "Central Tyrrhenian Sea IMMA") and an Area Of Interest (the Tuscan Archipelago), which could become soon IMMAs. It is also adjacent to the "Balearic Islands Shelf and Slope IMMA", off the southern coasts of Balearic Islands, a critical habitat for the Mediterranean sperm whale (Fig. 1). It also includes the Pelagos Sanctuary for marine mammals.

These areas have a set of geomorphological and oceanographic features that favour productivity levels of extraordinary biological and ecological importance for the region. In particular, the proposed PSSA area overlaps important habitats for the endangered Mediterranean fin whales (*Balaenoptera physalus*), the endangered sperm whales (*Physeter macrocephalus*), the vulnerable Cuvier's beaked whales (*Ziphius cavirostris*), the Habitats European Directive Annex II bottlenose dolphins (*Tursiops truncatus*) and the endangered Risso's dolphins (*Grampus griseus*) (ACCOBAMS 2022). All cetacean species are also listed in Annex IV of the Habitats, Fauna and Flora European Directive 92/43/EEC (animal

¹¹ <u>https://chm.cbd.int/database/record?documentID=204124</u>

¹² https://chm.cbd.int/database/record?documentID=204125

¹³ <u>https://www.marinemammalhabitat.org/portfolio-item/north-western-mediterranean-sea-slope-canyon-system/</u>

¹⁴ https://www.marinemammalhabitat.org/portfolio-item/shelf-gulf-lion/

¹⁵ https://www.marinemammalhabitat.org/portfolio-item/western-ligurian-sea-genoa-canyon/

and plant species of Community interest that require strict protection). These species are included in the IUCN red list.

2.1.2.1 Benthic habitats: distribution and specific habitats

The theoretical biological zones concerned by the study are mainly the circalittoral stage (from 30-35 m depth to the edge of the continental shelf), the bathyal stage (from the edge of the continental shelf to the foot of the slope, i.e. 2,200 to 2,500 metres depth) and the abyssal stage (beyond 2,500 metres depth). The nature of the seabed is variable (hard bottom, soft sandy to muddy bottom) and contributes to the great variety of benthic populations observed.

At the circalittoral level, the coralligenous bottoms constitute a typical Mediterranean habitat and underwater landscape, which is also a biodiversity hotspot: nearly 1700 species of invertebrates, 315 species of algae and 110 species of associated fish have been estimated (Ballesteros, 2006). At the bathyal level, certain canyons in the western Mediterranean are home to megafauna habitats, the cold-water coral beds. These are areas of remarkably high biodiversity, refuges and feeding grounds for many species, including some commercial fish.

2.1.2.2 The case of cetaceans

The preservation of cetaceans is a necessity in terms of maintaining the ecological balance in the Mediterranean Sea, and contributes to the mitigation of climate change¹⁶ their economic value must also be considered, as cetaceans play a major role in the development of tourism in the area. Finally, from the point of view of biodiversity, some of the Mediterranean cetacean subpopulations are genetically isolated from Atlantic populations and the others (e.g., fin and sperm whales), which gives them a unique value.

Numerous studies have attempted to define the habitat of cetaceans and distinguish the presence of different species by physical and hydrological factors such as surface water temperature and the different water masses present, topographical features, and currents. The presence of cetaceans is often dependent on the distribution of the prey they feed on. The continental slope is the preferred habitat of species with a specialised diet composed mainly of cephalopods: the sperm whale, the Cuvier's beaked whale, the long-finned pilot whale and the Risso's dolphin; the great abyssal plain is the preferred habitat of the fin whale. The bottlenose dolphin prefers waters to the continental shelf, usually within the 100 m isobath.

The proposed PSSA is frequented by several species of cetaceans, eight of which (fin, sperm, Cuvier's beaked and long-finned pilot whales, Risso's, bottlenose, striped and common dolphins) are regularly present all year round.

The importance of this area for fin whales is clear: the estimated abundance of this species within the proposed PSSA represents about the 67% of the whole Mediterranean population (ACCOBAMS 2021). Concerning the sperm whale, compared to the total Mediterranean estimate of about 1400 individuals (ACCOBAMS 2021), the estimate in half of the proposed PSSA (the whole Pelagos Sanctuary and French waters; Laran *et al.* 2017) was between 300 and 600 individuals, with higher numbers in winter. The predicted distribution of these two species is shows in Figures 2 and 3.

¹⁶ Roman, J., J. Estes, L. Morissette, C. Smith, D. Costa, J. McCarthy, J. B. Nation, S. Nicol, A. Pershing, and V. Smetacek. 2014. "Whales as Marine Ecosystem Engineers" *Frontiers in Ecology and the Environment* 12 (2): 377–85



Figure 2: Above: Fin whale predicted densities (summer data: 1999-2016) (Mannocci et al., 2018); Below: Fin whale predicted densities (summer 2018) (ACCOBAMS, 2021)



Figure 3: Sperm whale sightings and acoustic detections (ASI 2018, white squares and red/orange circles), overlaid on a predictive density map from Mannocci et al., 2018 (yellow = highest probability, blue = lowest probability) (ACCOBAMS, 2021)

To date, there is no fine-scale mapping of the preferential habitats of these cetacean species for the entire north-western Mediterranean basin that could be used to guide a zoning approach. Thus, the identification of areas with higher risk of collision between ships and sensitive species (the fin whale and the sperm whale) within the proposed PSSA is complex.

The latest cetacean research campaigns in the Mediterranean carried out as part of the *ACCOBAMS Survey Initiative* (ASI) have confirmed the knowledge on preferential presence of fin whales within the proposed PSSA (Fig. 2), particularly from off the Gulf of Lion to the coastal and offshore waters off Catalonia. Concerning the offshore areas, this may be linked to the presence of cyclonic eddies that are the main reason for the high productivity of the area, as canyons play more a local role.

A zone with one of the highest densities of marine canyons recorded globally and regionally, which probably strongly contributes to make it highly productive (see section 2.3.1). Concerning the Spanish offshore and coastal areas, this has been recently confirmed as a core-feeding habitat for fin whales, especially in shallow coastal waters, through satellite tagging. Interestingly, these coastal waters coincide with areas of higher density within the North-West Mediterranean for European sardines (*Sardina pilchardus*) and European anchovies (*European anchovy*). Their occurrence extends to the edge of the continental shelf and their distribution generally overlaps, although sardines are distributed closer to the coast and reach larger sizes (EC *et al.* 2020).

Concerning the sperm whale, the predicted distribution by Mannocci and colleagues (2018) (Fig.3) shows higher densities in the area within the PSSA between the Balearic Islands the Spanish continental coast.

A synthesis of distribution of both species has also been carried out for the Pelagos Sanctuary and adjacent waters (Laran *et al.*, 2012). Based on multiple datasets over fifteen years, gathering more than 6,000 opportunistic observations, this study highlighted a number of important features on species' spatial and temporal distribution, including:

- The fin whale regularly frequents both the Pelagos Sanctuary and the adjacent waters of the Provençal area and southern Gulf of Lion.
- Within the Sanctuary, the fin whale seems to be present mainly in the western part.
- The distribution of fin whales in spring seems to be mainly related to permanent frontal structures¹⁷, while from June to September it is also related to temporary frontal structures. At the end of the summer, the distribution of fin whales is more related to permanent frontal zones located closer to the coast in the *Liguro-Provençal* area or certain upwelling zones such as the one to the East of Bonifacio.
- The sperm whale is particularly frequent on the continental slope but can also be found in certain restricted areas offshore.
- The highest sperm whale encounter rates are in areas with lower fin whale encounter rates, demonstrating very distinct ecological niches likely due to their very different diets (planktonophagous the fin whale, teutophagous the sperm whale).

¹⁷ Hydrological discrepancies corresponding to areas of high horizontal density gradient, which are very often the site of increased biological productivity

2.1.3 Dependency

The proposed area and particularly the Pelagos Sanctuary is an essential feeding ground for several cetacean species in the north-western Mediterranean; here, meteorological and oceanic conditions allow primary productivity in spring and summer to be higher than in the coastal area. For example, Atlantic krill (*Meganyctiphanes norvegica*), a zooplankton species that is exceptionally abundant in the Sanctuary in summer and autumn, is the only identified source of food for fin whales in summer in the Ligurian-Provençal basin.

Cuvier's beaked whales, long-finned pilot whales, sperm whales and Risso's dolphins also take advantage of the Sanctuary's high productivity, particularly on the slope and in the canyons, but with a time lag compared to fin whales, since the peak abundance of their prey (mainly cephalopods) is observed later in the season. Bottlenose dolphins or striped dolphins are permanently present in the waters of the Sanctuary thanks to less specific diets consisting of cephalopods or fish.

The proposed PSSA also includes cetacean corridors. Of particular importance are the Spanish cetacean migration corridor, north of the Balearic Archipelago, which is also an important feeding area for striped dolphins, Risso's dolphins, sperm whales and beaked whales (mainly a three-month period, between April and June). This corridor is also used by fin whales during their migration from the African coasts of the Mediterranean to the Gulf of Lion and the Ligurian Sea, in June and July.

The North-west Mediterranean is characterised by a very high density of submarine canyons. Canyons are important habitats for some cetacean species (e.g., Cuvier's beaked whales) and they also contribute to upwelling phenomena enhancing local primary productivity with the effects extending up the food chain to include birds, marine mammals and fisheries. Commercially important pelagic and demersal fisheries and unique benthic habitats are commonly associated with the heads of shelf-incising submarine canyons that are characterised by steep bedrock exposures. Submarine canyons that extend across the continental shelf and approach the coast are known to intercept organic-matter-rich material to be supplied and transported down-slope, where it provides nourishment to feed a diverse and abundant macro fauna (Wurtz 2012).

Other unique habitats that highly vulnerable to shipping accidents are present in the region surrounding the PSSA. For example, the Camargue wetlands - a Ramsar site of about 135,000 ha, the largest French wetland and the second largest Mediterranean wetland after the Nile Delta region. This is a key site of international importance for nesting, staging and wintering of several species of waterbirds. It harbours breeding populations (Greater Flamingo, Collared Pratincole, Squacco Heron, Glossy Ibis, Eurasian Bittern), wintering populations (Mallard, Gadwall, Red-crested Pochard, Common Teal, Bewick's Swan, Greater Spotted Eagle) and stopover populations (Pied Avocet, Kentish Plover, Curlew Sandpiper, Black Tern).

2.1.4 Productivity

Although the Mediterranean is generally considered to be an oligotrophic sea, i.e. low in nutrients, its north-western basin is characterised by relatively high mesotrophic productivity throughout the year, due in part to the physical characteristics mentioned above (see sections 1.1.1 and 2.1.3). The phytoplankton bloom begins in mid-April. This high level of primary productivity conditions the structuring of the upper levels of the food web, in particular the presence of tertiary consumers such as cetaceans, which are particularly abundant in summer.

2.1.5 Spawning and breeding grounds

Mediterranean cetaceans do not show specific breeding grounds. However, a high percentage of juvenile whales are reported in the study area. Biopsy sampling analyses determined that at least one third of the individuals sampled were breeding females and the remaining two thirds were active breeding males (Siliart *et al.*, 2012), supporting the hypothesis of this as an area favourable to the reproduction of the species. Similarly, the analysis of the structure and composition of the groups and their sex ratio have shown that this area is favourable for sperm whales and long-finned pilot whales too (Di-Méglio *et al.*, 2016).

Sardine' persistent spawning habitats are identified along Spanish and French waters, especially surrounding the river mouth areas of Ebro and Rhone, with persistent nursery habitats in the coastal areas and over the continental shelf edge of the Gulf of Lion and in the northern part of the Ebro delta. Concerning anchovies, persistent spawning areas are described along the continental shelf of the same region, with persistent nursery habitats found mainly over the Spanish continental shelf and in a localised area of the central part of the French waters (EC *et al.* 2020).

2.1.6 Fragility

The semi-enclosed nature of the Mediterranean Sea and its high level of endemism, already mentioned, as well as the near absence of tides, make it particularly vulnerable to any change. The constant increase in human activities at sea, in particular maritime traffic, combined with phenomena linked to climate change (warming, acidification, eutrophication and bioaccumulation of marine waters in particular) are weakening the natural balance of the north-western Mediterranean zone.

As far as cetaceans are concerned, all the species frequenting the area are particularly vulnerable because of their slow growth, their high longevity (up to 100 years for some individuals) and their low reproduction rate: for these species in particular, human exploitation of the area at high levels (maritime traffic, but also fishing and leisure activities) is a permanent challenge (Reeves and Notarbartolo, 2006).

The importance and fragility of this region is clearly demonstrated by the large and consistent amount of official international deliberations and recognitions (Pelagos Agreement, Bonifacio Strait PSSA, 11 SPAMIs, two EBSAs) and expert recognitions (three IMMAs) and the national implementations of area-based protection measures (7 National Parks, **##** Protected Areas, over 230 Natura 2000 sites). See all details in sections 3.9.2 and 3.9.3.

2.1.7 Bio-geographic criteria

The particular qualities of the North-Western Mediterranean Sea have already been mentioned and make it singular in biogeographic terms. This singularity is particularly marked in the Ligurian Sea with the presence of the *Ligurian-Provençal* front, a region of rapid transition between the light waters of the Ligurian current and the denser waters of the central zone of this front, in the shape of a horseshoe. It runs about twenty nautical miles along the western coast of Corsica, the Italian coast of Liguria and the French Riviera in a cyclonic movement. The permanent nature of this front, as well as its interannual stability in terms of hydrology, gives it a dominant role in the organisation of phytoplankton communities and ensures the maintenance of a zone that is richer in nutrients than the adjacent regions, particularly in spring (Goffart *et al.*, 1994).

2.1.7.1 A remarkable and rich marine fauna

The North Western Mediterranean is of particular importance from an ornithological point of view. It is the most important area in the world for the conservation of the Balearic Shearwater (*Puffinus mauretanicus*), a species endemic to the north-western Mediterranean whose status is considered critically endangered in Europe. The area is also essential for Audouin's Gull (*Larus audouinii*), whose conservation status in Europe is said to be "localised" as more than 90% of the breeding population is clustered in less than ten sites. The colony in the Ebro Delta (Spain) alone accounts for 67% of the world population of this species (Gutierrez *et al.*, 2008). The area is also used extensively by the Mediterranean endemic subspecies of the crested cormorant (*Phalacrocorax aritotelis desmarestii*) and storm-petrel (*Hydrobates pelagicus melitensis*).

This area hosts Mediterranean subpopulations of tropical, subtropical or boreal fish species or coastal invertebrates, but also top predators such as fin whales, sperm whales or bottlenose dolphins. This allows the existence of a naturally balanced and functional food web.

The importance of biodiversity within the study area and the genetic specificity of its populations makes it a special area, whose deterioration could lead to the disappearance of entire sub-populations.

2.2 Social, cultural and economic criteria

2.2.1 Social or economic dependency

The Mediterranean coasts welcome an ever-increasing number of travellers and are a stronghold of world tourism. Seaside tourism, favoured by an exceptional marine environment, is one of the main economic resources of this region. The proximity of several beautiful islands (Corsica, Sardinia, the Tuscan archipelago, Balearic Islands, etc.) makes this region particularly attractive and, to a large extent, economically dependent on tourism.

Commercial whale-watching (a tourist service that allows visitors to observe cetaceans in their natural environment) has been a fast-growing activity since the 1990s. A study conducted in the French Mediterranean identified 32 operators (with a capacity of 1,075 places). Between the 1980s and the early 2000s, the annual growth rate in the number of operators was estimated at 3.5% (Mayol *et al.*, 2014). This activity is mainly carried out between June and September.

Professional fishing is an integral part of the Mediterranean landscape, despite a relative economic weight and decreases in the number of vessels, sailors, sales in value and volume. It contributes to the dynamism and survival of the Mediterranean coastal economic fabric as well as to its reputation. Fishing activity is constrained in several ways, particularly with the decline in fish stocks and the management measures implemented to remedy this (MTES, 2019).

2.3 Scientific and educational criteria

2.3.1 Research

It is essential to study Mediterranean cetaceans in order to gain a better understanding of them and then define the most effective management and conservation rules. The Pelagos Sanctuary, which includes France, Italy and Monaco, is a pilot area in which a number of international research programmes are already being conducted to improve knowledge not only of cetacean populations in the north-western Mediterranean, but also of the main anthropogenic threats to which they are exposed, both at sea and on land.

The establishment of the Spanish cetacean migration corridor also makes it possible to promote research on these populations, embracing an even wider diversity of habitats.

2.3.2 Education

Knowledge of cetacean populations must continue to progress, but it must also be disseminated to as many people as possible. The existence of marine protected areas contributes effectively to this and promotes collective awareness of the rich and fragile nature of marine areas and the populations they shelter, through the awareness-raising and communication activities they implement.

The development of whale-watching activities in situ also contributes to this, when properly supervised. The emblematic nature of cetaceans makes it possible to communicate more widely with the general public on ecological issues that concern the entire marine environment and the impacts it is suffering, particularly as a result of direct human action and climate change. The training of marine professionals is also an important lever for raising awareness, which can be deployed in different formats: initial and ongoing training, courses, webinars, etc.

3 VULNERABILITIES OF THE AREA TO DAMAGE BY INTERNATIONAL SHIPPING ACTIVITIES

3.1 Vessel traffic characteristics

The Mediterranean Sea is one of the busiest shipping areas in the world, being the gateway between the European continent and Asia via the Suez Canal. With an estimated 220,000 merchant ships per year¹⁸, commercial shipping is particularly intense in the Western Mediterranean, especially in relation to passenger transport. Commercial activity concerns the transport of passengers or goods by ships often exceeding 100 metres in size, sailing at between 14 and over 20 knots (ferries, cargo ships, tankers, container ships, etc.) and up to more than 35 knots for high-speed craft (HSC), which are mainly used to serve the islands.

From the mid-1990s to the mid-2000s, the Mediterranean Sea has seen a 58% increase in transit capacity, coupled with a 30% increase in vessel size since 1997. Maritime transport in the Mediterranean basin is expected to increase in the coming years, both in number of routes and in intensity, especially in connection with the enlargement of the Suez Canal¹⁹. Marine Mammal Observers working within the Fix Line Transect Mediterranean Network (FLT) aboard ferries, at the command deck, raise awareness of the navigating staff of ferries.

¹⁸ Source: <u>https://www.sanctuaire-pelagos.org/fr/?Itemid=260</u>, consulted 8th January 2021

¹⁹ Source : <u>https://www.medqsr.org/fr/node/235, consulted 8th january 2021.</u>

An analysis of Automatic Identification System (AIS²⁰) data by the Centre for studies and expertise on risks, environment, mobility and urban and country planning (Cerema - France) shows a gradual trend towards an increase in the number of vessels equipped with this identification system using the area and in the number of voyages²¹ made in the area (Fig. 4).



Figure 4: number of ships and sailings in the study area (based on AIS data)

3.1.1 Operational factors

In the North-Western Mediterranean, shipping traffic is mainly structured towards or from the ports of Valencia, Tarragona, Barcelona, Marseille, Genoa, La Spezia and Livorno for goods traffic, to which are added the ports of Toulon, Sète, Nice, Savona and all ports in the islands of Corsica, Sardinia, the Tuscan archipelago, Sicily and the Balearic Islands for passenger transport. This geographical situation of proximity to the islands, combined with commercial port infrastructures, promotes maritime ferry traffic. Moreover, the cruise activity has largely developed in the Mediterranean, benefiting from favourable weather conditions and dedicated infrastructures: the region represents the second world market for this sector, after the Caribbean (Di Méglio *et al.*, 2010). Finally, more than 700 marinas are listed in the Mediterranean basin (*Invest in Med* study, published in 2010²²).

3.1.2 Vessel types

A recent study conducted by the Quiet Oceans consultancy on behalf of WWF (Gallou and Folegot, 2020) analysed shipping traffic in the north-western Mediterranean, using AIS data from 2019. In terms of distance travelled in this area, passenger ships and cargo ships travel by far the greatest distance, followed by motorised pleasure craft and fishing vessels.

²⁰ This ship identification system is mandatory for all ships of 300 gross tonnage or more in international service, cargo ships of 500 gross tonnage or more not engaged in international voyages and all passenger ships, irrespective of their size.

²¹ The term navigation is understood here in the sense of Article R334-39 of the French environment code: "any movement of a vessel within the perimeter of the marine protected area, including from or to a port, an offshore installation or structure, a pilot station or any other point located within that perimeter"

²² Study directed by the Chamber of Commerce and Industry of Marseille Provence, in partnership with the CCI of Malaga. <u>https://www.econostrum.info/La-Mediterranee-est-la-premiere-destination-mondiale-de-tourisme-nautique_a3720.html</u>, consulted 8th january 2021.





Figure 5: percentage of distance travelled in the NW Mediterranean Sea, by ship type and season (AIS data 2019, analysed by Quiet Oceans)

3.1.3 Traffic characteristics

Freight traffic is higher in winter, in the northern part of the study area, along the coasts of the Gulf of Lion, towards Barcelona and with Corsica and Sardinia. Passenger traffic is highly structured around links between the main ports of France, Spain and Italy on the one hand, and Corsica, the Balearic Islands, Sardinia and the Tuscan archipelago on the other. Traffic intensity increases significantly during the summer months for passenger transport between the Mediterranean islands and the mainland, as well as with additional connections to North Africa and Barcelona and with cruise activity (Fig. 5).



Figure 6: representation of the maritime traffic during the winter period (2019, AIS source)





Figure 7: representation of the maritime traffic during the summer period (2018, AIS source)

More than two-thirds of the vessels using the study area (68% in winter and 71% in summer) fly the European flag, representing more than 70% of the cumulative distances travelled, whatever the season.

3.1.4 Harmful substances carried

The rules on the transport of harmful substances are derived from the International Convention for the Prevention of Pollution from Ships, known as the *MARPOL* Convention. These rules are contained in different international codes, depending on the nature and mode of transport of these substances. The Mediterranean is an important transport route, but also a major oil loading and unloading centre. It is also a major route for tankers.

3.1.4.1 Oil

In 2006, about 18% of the world's crude oil shipping, representing 4,224 voyages and 421 million tonnes, took place in the Mediterranean (MIU, 2008). Of the 10 main ports of discharge identified in 2006, four are located in the study area: Fos and Port-de-bouc (Marseille region), Genoa and Savona (Italy).

3.1.4.2 Liquefied Natural Gas (LNG) and Liquefied Petroleum Gas (LPG)

In 2006, LNG and LPG loadings amounted to 31 and 19 million tonnes respectively and unloading to 25 and 20 million tonnes for the whole Mediterranean (MIU, 2008).

3.1.4.3 Chemical Products

Chemicals include organic compounds, animal oils and fats, inorganic compounds and other miscellaneous products. The transport of chemicals in liquid and gaseous form represents a relatively small share of international maritime trade (about 2%)²³ but remains a very dynamic and important sector in terms of value of goods; however, their accidental release would be harmful to the marine environment.

3.2 Natural Factors

3.2.1 Hydrographical

Some areas are known to present risks to navigation, due to the presence of the narrowness of the passage or sectors with numerous islands and islets. This is particularly the case of the Strait of Bonifacio, which is 15 to 20 km wide and 100 metres deep at its deepest point between southern Corsica and northern Sardinia. At its eastern mouth, it also contains the islands of the archipelagos of La Maddalena, Lavezzi and the island of Cavallo. This passage is considered dangerous due to the presence of numerous rocks and strong currents that can increase the risk of grounding and other accidents. These characteristics prompted the establishment of the Bonifacio Strait PSSA.

The small pass of the islands of Hyères is also a potentially dangerous area for large vessels. Located between the Giens peninsula and the island of Porquerolles, its narrowest part extends over less than one mile, with depths of less than 20 metres. The traffic of passenger HSC is very important in the summer season. Cruise ships and ro-ro passenger ships also use it, generally in an east-west direction in heavy westerly weather (GIS3M, 2010).

3.2.2 Meteorological

The Mediterranean climate is characterised by hot, dry summers under the influence of the Azores anticyclone, and mild, relatively rainy winters. Local winds are variable, in both direction and strength, and become stronger in winter with gusts that can exceed 100 km/h. North and northwest winds (Tramontane and Mistral) create the most violent storms.

3.2.3 Oceanographic

In the Mediterranean, the influence of the tides is weak; the tidal range does not exceed 40 cm on average near the coast. Tidal currents are weak and negligible compared to wind-induced currents. Generally, they are not felt near the coast in wide-open areas, but they can be rapid in some narrow passages or shallow areas. The average sea waves and swell are generally weak, due to the small size of the Mediterranean basin where swells are infrequent and not very developed. The strongest states of the sea, in terms of height, are generated by north to northwest winds.

3.3 Impacts of shipping traffic on the area

3.3.1 Collisions between ships and large cetaceans

Long underestimated, this impact is now internationally recognised as an important threat to cetaceans, especially as shipping traffic, vessel size and speed continue to increase.

²³ Source: <u>https://www.lantenne.com/Les-chimiquiers_a14360.html</u>, consulted 19th February 2021.

Collisions involve a wide variety of vessels, with the risk of collision increasing with vessel speed (as does the severity of injury to the animal), although there is currently insufficient data to adequately quantify this risk (Leaper, 2019).

The actual total number of collisions between large cetaceans and ships and the consequent impact at population level are difficult to be assessed. Accidents generally take place offshore and are rarely noticed by seafarers (this is particularly true when the vessels are large). Nevertheless, scientific work carried out over the last fifteen years, sometimes in collaboration with shipping companies, has shown that two species are mainly concerned in the Mediterranean: the fin whale (*Balaenoptera physalus*) and the sperm whale (*Physeter macrocephalus*). The latter spends long periods of rest floating at the surface, usually about 10 minutes, between deep dives: this behaviour makes it very vulnerable to ship strikes (UNEP/MAP-RAC/PSA, 2016).

Analysis of records of collisions between ships and the Mediterranean fin whale population over the period 1971-2001 showed that more than 80% of fatal ship strikes occurred in the North-West Mediterranean (Panigada *et al.*, 2006). During the period 2012-2018, the annual number of deadly collisions within the proposed PSSA perimeter was up to 25.38 (Standard Deviation (SD) =5.97) fin whales per year. Based on recognized management rules, this value means that collisions alone prevent the restoration of the fin whale subpopulation within 100 years. Furthermore, there are almost 10% chance that ship strike mortality triggers a subpopulation decline.

Strandings data may complement the information on these accidents. A study carried out on strandings on the French coast since 1972 (Peltier *et al.*, 2019) gave the following results:

- Collisions are the main human cause of death for fin whales in the western Mediterranean (22.5% of stranding causes analysed on average; they are the cause of one in five strandings for all species combined)
- Evidence of collision could only be found for the period 2005-2017 for the sperm whale in the Mediterranean
- The majority of fin whales fatally struck by ships had not yet reached the reproductive stage
- The small size of the fin whale population in Mediterranean waters makes it particularly vulnerable to anthropogenic pressures.



Figure 8: number of fin and sperm whale strandings with evidence of a fatal ship strike (grey bars) and total number of strandings (black bars), by decade, in the western Mediterranean (Peltier et al., 2019).

An assessment carried out by France as part of the implementation of the European Marine Strategy Framework Directive (MSFD), in 2018, reports that in the western Mediterranean collisions are a cause for concern for fin whales, accounting for 80% of recorded events, compared to 10% for sperm whales (Spitz *et al.*, 2018). Other work indicates that collisions and incidental catches alone may be responsible for the decline of the Mediterranean fin whale sub-population, and points to the need for further research to determine how indirect anthropogenic mortalities (pollution, prey depletion) affect the sperm whale population (Sèbe *et al.*, 2020).

Another approach to assessing the risk of collision is theoretical statistical analysis. Thus, the processing of data concerning shipping traffic with those mentioning the presence of cetaceans makes it possible to calculate a theoretical ship-whale encounter rate ("near miss event" or NME). This approach was implemented for the study area (excluding the Spanish corridor), and gives the following results for fin whales (Gallou and Folegot, 2020):

- Seasonal differences are mainly due to the variability in the number of ships using the area, which doubles in summer compared to winter.
- Passenger ships and cargo ships have the highest cumulative risk of collision (84% NME in winter, 72% in summer).

The method uses the Tregenza equation²⁴, with the following working assumptions:

- The whole animal is vulnerable and represented by a straight line of the same length as the animal itself.
- The orientation of this line with respect to the direction of the ship is random.
- The animal does not try to move towards or away from the ship's path.
- The vessel does not change its course.

The theoretical number of collision situations is calculated by integrating five parameters: the length of the individual, the time spent at the surface by the animal, the width of the ship's hull, the density of the whale populations and the distance travelled in the area by the ship.

The assumptions of this model do not necessarily reflect the behaviour of animals or vessels in real life, but these data are considered a basis for quantifying this risk, in the absence of more realistic data.

This work could not be carried out for sperm whales due to the lack of sufficient biological data.

In a similar manner the Spanish experience focuses on a study carried out in the MPA Cetacean Migration Corridor in the Mediterranean (CEDEX, 2021), where the presence of fin whales (*Balaenoptera physalus*) and sperm whales (*Physeter macrocephalus*) has been confirmed. For this purpose, a spatial qualitative indicator of "potential risk of collision" has been used considering, on the one hand, data related to maritime traffic, based on AIS data, and on the other hand, the available information related to sightings of the species under study, cited above.

²⁴ N. Tregenza, N. Aguilar, M. Carillo, I. Delgado, F. Diaz, A. Brito and V. Martin, "Potential impact of fast ferries on whale populations a simple model with examples from the Canary Islands.," in Proceedings of the 14th Annual Conference of the European Cetacean Society. Cork, Ireland, 2-5 April. 2000. http://www.chelonia.co.uk/collision_prediction.htm, 2000.
The analysis carried out for the period of Oct 2018-Sep 2019 showed that up to 4.552 ships (including high-speed crafts, passenger ships, cargos and tankers) have transited this marine protected area, making a total of 5,81 million km travelled with an average route per ship. of 132 km.

In order to obtain this spatial distribution of collision risk, a hazard analysis has been carried out, based on the logistic curve that relates the ship's speed and mortality (Vanderlaan and Taggart, 2007) and an approximation to an hazard index based on Vaes and Druon (2013); This index includes not only the traffic involved, but also the characteristics of the ship and its navigation features (i.e. distance travelled), which can affect the fate of the cetacean after the collision. This concept of risk represents a further step, since it combines the hazard of maritime traffic with the exposure associated with the presence of cetaceans.

The final objective is to identify those zones within the study area where the concentration of individuals and overall risk is higher. Within the cetacean migration corridor, for the total traffic analysed, these areas were identified with the northwestern end of the corridor and the area affected by the routes starting from the port of Barcelona, as shown in *Figure* 9. A more detailed analysis (not included in this document) makes it possible to quantify the contribution to this risk indicator of the different categories of ships or the incidence of the seasonal effects of traffic.



Balaenoptera physalus Physeter macrocephalus Figure 9: Potential collision risk index associated with the presence of the cetaceans and maritime traffic in the CCM Oct 2018-September 2019 (CEDEX, 2021)

In order to help the decision-making process this analysis allows focusing on where and when taking measures (i.e. depending on the availability of data related to a temporal distribution of cetaceans). Currently a similar risk analysis is being carried out in the proximities of the Catalan coasts, given the high presence of the fin whale, to serve as support to define future measures to mitigate the risk of collisions with large cetaceans to be included in the corridor management plan.

The advantage of this methodology lies in its flexibility to adapt to different spatial and temporal scenarios, a measure that can gradually introduce improvements in the data it feeds. In this regard, it should be added that while the treatment of information related to maritime traffic is quite consistent, due to the robustness of the data, the same does not occur with the information from sightings of the species. Added to the difficulties of field work in the marine environment are the environmental conditions that are very important when it

comes to having more or less probability of observing cetaceans and limiting being able to know the status and distribution of populations.

Based on the above it is concluded that the whale population has suffered ship strikes in the region and therefore the cetacean population is at risk. Without associated protective measures to mitigate the risk of collision within the perimeter of the PSSA, a decline in the populations of medium and large cetaceans is to be expected. Implementing a speed reduction strategy will allow a significant decrease in the likelihood of collision and fatal wildlife-related injuries.

The IWC Scientific Committee has identified the need for a better understanding of the relationship between vessel speed, the risk of death or injury to the whale and damage to the vessel. It has considered a number of studies and approaches since 2009 when MEPC.1/Circ.674 was adopted. All the studies considered have confirmed an increased risk with increased speed, supporting the use of speed restrictions as a way of reducing risk. Some studies have attempted to quantify the speed-risk relationship for specific whale species (Conn and Silber, 2013) or the hydrodynamic forces in relation to speed (Silber et al., 2014). Others (e.g. Wiley et al., 2011) have evaluated the relative risk reduction that might be achieved by speed restrictions. In addition to studies based on collisions, studies based on observations of whales close to vessels have inferred greater collision risks with increases in speed (Gende et al., 2011; Harris et al., 2012).

At its last meeting (2022) IWC Scientific Committee, recommended that 'action needs to be taken to reduce ship strike risks to the Mediterranean populations of fin and sperm whales'. The Committee also recognised that, 'in line with its previous recommendations, since routing options do not seem to be possible in the area, the most effective way to reduce risk is through speed reductions'. Finally, the Committee recommended that 'any measures that are implemented are fully monitored and evaluated in terms of the risk reduction that is expected to be achieved, including through the use of AIS data to assess levels of industry cooperation, and that measures can be adapted based on this'.

The most recent example of voluntary speed reduction to mitigate cetacean ship strikes is given by the case of the endangered Bryde's whales in the Hauraki Gulf, New Zealand (Constantine et al. 2015). Since the introduction of a speed limit of 10 knots in 2013, no collision events were recorded after an average of 2.4 whales per annum recorded in the period 1996- 2014 (Ebdon et al 2019).

Along the Atlantic coast of the United States, in the five years after the enactment of mandatory 10 knots speed restrictions in several Seasonal Management Areas, there were no right whale mortalities attributed to ship strikes either in or within 45 NM of these areas. These results indicate a statistically significant reduction in right whale ship lethal strikes in these areas suggesting that the speed limits have been effective (Laist et al., 2014).

Several models have shown that speeds between 10 and 13 knots drastically decrease the probability of lethal injuries in case of collisions between ships and cetaceans (Vanderlaan & Taggart 2007; Gende et al. 2011; Conn & Siliber 2013). There is strong support to identify 12 knots (11.8 knots or 6.1 m/s) as Bayesian change point of probability for the relationship between ship speed and encounter distance. Average encounter distances above and below the 11.8 knots change point vary from 448 m (95%CrI, 398-485) to 562 m (95%CrI, 468-676) (Gende et al. 2011).



Vanderlaan, A.S. and Taggart, C.T. 2007. Vessel collisions with whales: the probability of lethal injury based on vessel speed

3.3.2 Physical disturbance of cetaceans by ships

The presence of ships may influence cetaceans: attraction, flight or no apparent reaction, depending on species and individuals (Di-Méglio *et al.*, 2010). It is likely to generate behavioural responses causing individuals to move to less favourable habitats, altering the normal course of functions such as foraging, social functioning, reproduction, suckling, resting or migration. This state of stress alters the health status of individuals and demographic parameters may be degraded. If changes in cetacean behaviour have been observed (notably in the case of the bottlenose dolphin in the Mediterranean²⁵) and disturbance distances have sometimes been inferred, it is difficult in the current state of knowledge to quantify the impacts of this pressure in terms of population ecology.

3.3.3 Underwater noise from commercial shipping

Underwater noise generated by human activities is one of the pressures identified and assessed in the framework of the implementation of the Marine Strategy Framework Directive (descriptor 11 of the Directive) and its complementary process at the Mediterranean level (Ecosystem Approach Process (EcAp) led by the Barcelona Convention). Among the activities concerned is shipping, where the main contributor to the noise generated by a merchant ship is the movement of the engine propeller. The noise level increases with the shape of the propeller, the state of wear of the ship, its size, speed and loading. The literature shows a direct relationship between speed and noise (McKenna et al., 2013; Zobell et al., 2021). Leaper (2019) concluded that a 10% speed reduction would reduce the total sound energy from shipping by around 40% on the global scale.

²⁵ Bearzi *et al.*, 2008

In the Mediterranean basin, anthropogenic noise levels have been steadily increasing over the past 50 years as shipping traffic has increased. According to the first EU maritime transport first environmental impact report (EMTER report) published in 2021, for EU waters the total accumulated underwater radiated noise energy more than doubled between 2014 and 2019. The underwater-radiated noise (URN) from shipping, both in IMO and EU is now recognised as a significant environmental issue with regional and global impact. The European Maritime Safety Agency (EMSA) conducted a study in 2021, focusing on a number of key aspects related to URN: the existing policy and current understanding about sources of continuous URN from different types of ships, its impacts on the marine environment, and mitigation actions. The study was carried out by "WavEC Offshore Renewables" and "Maritime Research Institute Netherlands" (MARIN) on behalf of EMSA. Commercial vessels can have short- and long-term negative consequences for marine life, in particular marine mammals (IMO, 2014, MEPC.1/Circ.833): the diffuse increase by maritime traffic in ambient noise levels, especially in the low frequencies, reduces the communication range of cetaceans, making it difficult for them to find mates or establish social relationships, as well as foraging and orientation. Furthermore, repeated shallow dives to cope with persistent acoustic disturbance are likely to increase the risk of decompression illness in marine mammals (GIS3M, 2010).

To be noted, ships concerned with speed reductions should be chosen carefully, as these measures can also have opposite effects on underwater noise and gas emissions depending on propeller designs (Leaper, 2019), and the technical criteria of the electrical distribution and the type of propulsion of the ship. As the aim of this project is not to increase the impact of maritime traffic on cetaceans, consideration should be given to the equipment of vessels to reduce noise. For example, changing the propellers during maintenance, having a certificate of conformity, equipping with a noise self-estimation and cavitation detection system.

3.4 Chemical pollutions

3.4.1 Hydrocarbons

Accidental oil spills have become rare in the Mediterranean, the last major accident being the MT Heaven in the Gulf of Genoa in 1991, but they can cause considerable damage to the marine environment given the quantities of oil spilled and the length of time it takes for the impacted habitats to recover.



With regard to illegal discharges, the use of satellite imagery can contribute to the estimation of the number of oil spills from ships, without providing proof that the discharge is illegal or that it is from a ship. In 2016, EMSA's CleanSeaNet platform recorded a total of 1073 detections of likely polluting incidents and a total of 1060 detections of potentially polluting incidents in the Mediterranean region and off the Atlantic coasts of Morocco, Portugal, Spain and France. Although these data remain to be confirmed, both in terms of the nature of the pollution and its origin, they clearly indicate that oil pollution incidents caused by ships remain a concern in the Mediterranean²⁶.

Polycyclic aromatic hydrocarbons (PAHs) can bioaccumulate in the tissues of marine mammals. The viscous crude oil spilled during an oil spill can cover the surface of the cetacean's body for a long period of time, which can reduce its filtering capacity: this can be the case for fin whales. The deterioration of zooplankton by an oil spill can also generate an indirect negative impact on some whales, as it is the main food for them.

3.4.2 Antifouling paints

These paints are one of the sources of heavy metals and biocides in Mediterranean waters, particularly off the coast of port areas. Through bioaccumulation, marine mammals can be sensitive to this type of pollution, which can disrupt their immune system and even lead to death.

3.4.3 Other toxic products

In addition to oil, hazardous and noxious substances (HNS) accidentally spilled into the marine environment can threaten marine species such as cetaceans. HNS include bulk liquid cargoes (petrochemicals, solvents and liquefied gases, *etc.*), bulk solid cargoes

²⁶ Source: https://www.medqsr.org/fr/resultats-et-etat-y-compris-les-tendances-ic19, consulted 18th January 2021

(fertilisers, *etc.*) and packaged chemicals. The quantities of HNS accidentally spilled have decreased considerably between 1994 and 2013 in the Mediterranean. Since 2003, the discharge of HNS has become insignificant compared to the period from 1994 to 2002¹⁶.

3.5 Marine litter

The Mediterranean Sea is one of the most affected areas by marine litter in the world and by plastic in particular, (it can constitute up to 90% of the seabed litter). The study from Arcangeli and al.2020 shows that there is a gradient x10 in density if marine litters from offshore, to coastal and to river. Meaning that marine litters are coming from land through rivers (highest densities) and then are spread over the vast oceanic surface. Its origin is mainly land-based, but it is estimated that ships are the source of almost a quarter of this litter (Koutsodendris *et al.*, 2008; loakeimidis *et al.*, 2014).

Accumulation rates vary greatly and are influenced by several factors, such as the proximity of large cities, coastal artificialisation and frequentation, hydrodynamics and maritime activities. The semi-enclosed nature of the Mediterranean basin also explains the high accumulation rates observed. The analysis of this waste shows a great variability *in* its nature and origin, with the highest quantities located mainly near large cities, river mouths and coastal canyons where currents are slower and strong sedimentation occurs.

In the French part of the study area, accumulation rates of 290 objects/km² can be reached on the continental shelf, with plastic waste found at different depths. The majority of plastic waste found in this area originates from fishing activities, with ferry traffic around Corsica also representing a considerable source of waste, particularly bottles and cans thrown overboard (Gerigny *et al.*, 2019). The presence of marine litter in increasing quantities is a serious threat to marine ecosystems, particularly for turtles and marine mammals (risk of entanglement, suffocation by ingestion).

3.6 Biological pollutions

Shipping transport is considered to be the most important vector for the import of exogenous marine species in the world, *via* ballast water or biofouling accumulated on the surface of ships' hulls, respectively managed by the IMO through the Ballast Water Management Convention and the Anti-Fouling System Convention. The semi-enclosed nature of the Mediterranean Sea and the importance of shipping traffic, particularly in its north-western basin, make it very sensitive to this risk. Invasive species can cause the restructuring of entire habitats to the detriment of native species, with the risk of reducing biological and genetic diversity within populations. However, this risk is only likely to affect very indirectly cetacean populations in the Mediterranean.

3.7 Greenhouse gas and air pollutant emissions

Greenhouse gas emissions have a global impact and are generated by various sectors of activity, including transport. Shipping traffic contributes to this, but only to a limited extent: in 2017, 3.15% of total EU greenhouse gas emissions were attributable to international shipping. However, with a significant increase of 32% over the last 20 years and an estimated projection of 50-250% by 2050, despite reductions in fuel consumption, the European Parliament voted on 16 September 2020 to include shipping in the EU Emissions Trading Scheme (EU ETS) and to set binding standards for shipping companies to reduce

their CO_2 emissions by at least 40% by 2030²⁷. Negotiations are still ongoing on the EU's Fit for 55 legislative package.

 CO_2 emissions from maritime transport are estimated at about 10% of the total CO_2 inventories emitted by the 21 Mediterranean countries that are signatories to the Barcelona Convention. These emissions also contribute to increased acidification and eutrophication of the marine environment.

The consequences of the increase in greenhouse gases on the marine environment are known and include the increase in temperature and acidification of marine waters. This may have consequences for cetaceans in terms of the distribution of their prey and their vulnerability to pathogens, which could thus find more favourable conditions for their development.

The Mediterranean States have jointly committed, within the framework of the IMO, in a landmark initiative on the greening of maritime transport. They have submitted to the IMO a joint and coordinated proposal to establish a SOx Emission Control Area (SECA) in the whole Mediterranean Sea at the 78th session of the Committee for the Protection of the Marine Environment (MEPC), which approved its creation. The designation of this area entails the obligation for all ships entering the Mediterranean to use fuel with sulfur content not exceeding 0.10% by mass, i.e. fuel 5 times less polluting than the international standard in non-SECA. Pending the adoption by the next session of MEPC in December 2022, the amendements to the Annex VI to the International Convention for the Prevention of Pollution from Ships (MARPOL) will enter into force in 2024 with a possible entry into effect of the area in 2025. This new SECA will significantly improve air quality in the area and protect health of millions of Mediterranean citizens and their fragile environment.

3.8 Summary of groundings, collisions or spills in the area

The Mediterranean Integrated Geographic Information System for Risk Assessment and Response to Marine Pollution (MEDGIS-MAR), administered by REMPEC²⁸, lists 82 events that occurred in the study area between 1977 and 2017. However, as no data is available for the study area between 2002 and 2011, it is likely that some information is missing or not published.

Of the events listed, 8 resulted in the release of more than 700 tonnes of hazardous substances into the environment (6 involving oil pollution), 8 resulted in the release of between 7 and 700 tonnes, 42 resulted in the release of less than 7 tonnes of hazardous substances.

The most dramatic event for the marine environment in the area was the accident off Genoa on 11 April 1991, when an explosion followed by a fire on the Cypriot tanker *MT Haven* resulted in the loss of 144,000 tonnes of heavy oil at sea. In terms of media coverage, the sinking of the cruise ship Costa Concordia in 2012 is widely remembered, mainly for the loss of life, although its impact on the marine environment was limited.

On Sunday October 07, 2018 in the morning, the Cap Corse semaphore reports to CROSS La Garde the collision between the Tunisian ro-ro ship ULYSSE and the container ship CSL VIRGINIA. The collision has resulted in pollution of around 530 m³ of hydrocarbons from the holds of the container ship.

²⁷ Source : <u>https://www.europarl.europa.eu/news/fr/headlines/society/20191129STO67756/emissions-de-co2-des-avions-et-des-navires-faits-et-chiffres-infographie</u>, consulted 18th February 2021

²⁸ Source: <u>https://medgismar.rempec.org/#</u>, consulted 22nd January 2021.

During the night of Saturday 12 to Sunday 13 October 2019, *RHODANUS*, a small cargo vessel flying the flag of Antigua and Barbuda, was heading straight for the *Cappiciolu* peninsula on the south coast of *Corsica*. Called by the MRCC on several occasions by VHF, the vessel did not answer. She stranded in the *Bonifacio* nature reserve, at the place called "*Cala Longa*". Alone on the bridge, the mate in charge of the watch fell asleep. The vessel was refloated on Friday 19 October and towed with her seven crew members to *Fos-sur-Mer*. There were no casualties nor pollution.

On June 11, 2021, air traffic control at Solenzara air base relayed the detection of an oil slick 8 nautical miles long by an Air Force plane about ten kilometers from the east coast of Corsica. A Falcon from the French Navy carried out the relocation of two slicks then by the Customs launch "DF 25", whose samples confirmed that they were heavy hydrocarbons. In the evening, the means of combating pollution in Corsica and Toulon were mobilized by the maritime prefecture of the Mediterranean, while the POLMAR-land plan was activated. It could correspond to the discharge by a ship of oily waters.

In relation to collisions between ships and cetaceans, a very recent collision event can be cited. The vessel Hypatia de Alexandria, from the Balearia fleet, brushed against two fin whales that were 15 miles off the coast of the Llobregat Delta on 26 May 2022. One of the individuals made an emergency dive about 50 metres from the vessel and the other is believed to have grazed the keel of the vessel.

3.9 Measures taken to protect the area and their positive effects

The wealth and plurality of environmental issues in the study area, as already described, have prompted the Coastal States or local authorities concerned to take specific protection measures by creating various marine protected areas. In total, almost 145,000 km² of the study area has a special status.

3.9.1 Measures already adopted by the Organization

Adoption on 2nd November 1973 of a Special Area (SA) covering the entire Mediterranean under Annexes I (Regulation for the Prevention of Pollution by oil) and V (Regulation for the Prevention of Pollution by garbage from ships) of the MARPOL Convention. This measure came into force on 2nd October 1983.

Adoption on 15th July 2011 of a PSSA for the strait of Bonifacio by Res. MEPC 204(62) which refers to protective measures previously adopted by Res.A.766(18) on 4th November 1993. In particular, IMO has adopted a mandatory ship reporting for ships of \geq 300 GT. In addition, vessels continue to use the existing recommended two-way route and any ships containing hazardous materials must require a pilot service.

Adoption of the creation of a sulfur oxide and particulate emission control area (SECA area) covering the entire Mediterranean Sea at the 78th Marine Environment Protection Committee of the International Maritime Organization (IMO) on June 10, 2022.

3.9.2 Measures taken for the protection of cetaceans

3.9.2.1 International Pelagos Sanctuary

The Pelagos Trilateral Agreement (November 1999) for the protection of marine mammals within the Pelagos Sanctuary entered into force on 21st February 2002, after ratification by the 3 concerned countries (France, Italy, Monaco). The Sanctuary covers a total area of

87,500 km². The objective of the agreement is to maintain a favourable conservation status for marine mammal populations within the Sanctuary, and to this end, to monitor cetacean populations, to reinforce the application of existing legislation on certain fishing activities, to reduce pollution, to regulate tourist observation of cetaceans and to improve the dissemination of information to the public. Since November 2002, the Pelagos Sanctuary has also been recognised by the Barcelona Convention Contracting Parties as a Specially Protected Areas of Mediterranean Importance (SPAMI).

3.9.2.2 The MPA cetacean migration corridor in the Mediterranean (Spain)

The Spanish government has designated a 46,385 km² corridor between Valencia, Catalonia and the Balearic Islands as a Marine Protected Area, to protect cetaceans present and migrating in the area. The Barcelona Convention, allowing the area to be designated as a SPAMI, validated this in December 2019.

3.9.3 Measures taken for the wider protection of environments

3.9.3.1 The Calanques National Park (France)

Created by decree on 18 April 2012, the Calanques National Park is both terrestrial and maritime. The marine core of the park covers 435 km² and benefits from the strongest protection measures. The adjacent maritime area (977 km²) also expresses sustainable development guidelines and ends at the limit of French territorial waters. It is recognised as a SPAMI.

3.9.3.2 Port-Cros National Park (France)

Created on 14 December 1963, this National Park has a marine area of 29 km² (heart of the park), to which are added 1230 km² of adjacent marine area. It is the oldest marine park in Europe. It is also recognised as a SPAMI.

3.9.3.3 The National Park of the Tuscan Archipelago (Italy)

Arcipelago Toscano National Park, established in 1989, is the largest marine Park in Europe: it safeguards 567.66 km² of sea and 178.87 km² of land. It includes the seven main islands of the Archipelago, as well as some minor islands and rocks. Each island and islet preserve traces of its history, each of them is unique. This Arcipelago has always represented an important shelter and connection area between the Sardinian-Corsican system and the peninsula. This history has led to the presence in the Archipelago of extremely specialized animal and vegetal species, which formed during the periods of isolation, and species, which only live in Corsica and Sardinia. There are colonies of sea birds, like shearwaters and seagulls, among which the rare Audouin's Gull, a Mediterranean endemic species which in Italy lives in a few places. The presence of the Mediterranean monk seal has also been sporadically recorded, and it also possible to sight cetaceans. UNESCO as a Tuscan Islands Biosphere Reserve has also recognised the park since 2003.

3.9.3.4 The Maddalena Archipelago National Park (Italy)

This park, created in 1994, covers approximately 51 km² on land and 150 km² at sea. Fin whales, sperm whales and bottlenose dolphins but also sea turtles (*Caretta caretta*), are frequently seen within this Archipelago.

3.9.3.5 National Park of Asinara and Marine Protected Area of the Asinara Island (Italy)

Designated in 1997, it extends for 52 km² on land and 108km² at sea. The marine environment is an element of considerable scientific and naturalistic interest for Asinara. Throughout the western side there are some unique plant landscapes, dominated by large brown algae of Atlantic origin, such as *Cystoseira*, *Sargassum*, *Dictyopteris* and *Phyllariopsis*.

3.9.3.6 National Park of Cinque Terre and Marine Protected Area of Cinque Terre (Italy)

Designated in 1999, the Cinque Terre National Park is a Unesco World Heritage site with priceless environmental and cultural features. It is a naturalistic oasis which preserved the features of an uncontaminated nature. The landscape, formed by rocks of different origin and age, is marked by a particular steepness and by the lack of plain stretches.

The coast, high and jagged, is linear, with a few inlets and promontories, dug by the sea in suggestive caves. There are a few sandy and pebbly beaches which are the result of the detritus of the watercourses, of landslides, or of accumulation of materials left by man.

Cinque Terre National Park is also the habitat for several faunistic species which find here the ideal conditions to live and reproduce. The Marine Protected Area extends for about 39 km².

3.9.3.7 Natural reserve of Bouches de Bonifacio (France)

The largest nature reserve in mainland France, created in September 1999, the *Bouches of Bonifacio* covers 800 km², mainly maritime, between Corsica and Sardinia. More than 98 km² of the sea are under so-called enhanced protection. This reserve is part of the PSSA of the Strait of Bonifacio, recognised as such in July 2011 by the IMO, which concerns maritime areas under French and Italian jurisdiction (MEPC, 2011); it is also recognised as a SPAMI.

3.9.3.8 Cape Corsica and Agriate Marine Natural Park (France)

Created in 2016, the Cape Corsica and Agriate Marine Natural Park covers an area of 6,830 km², of which 4,282 km² is located in the French EEZ.

3.9.3.9 Gulf of Lion Natural Marine Park (France)

Created in 2011, the Gulf of Lion Natural Marine Park has an area of 4,010 km². Its offshore limit is set at 35 miles, or approximately 60 km, where the depths reach 1,200 m. The Park aims to meet three fundamental objectives:

- Knowledge of the marine environment,
- The protection of this environment and the species it shelters,
- To contribute to the sustainable development of maritime activities.

3.9.3.10 Portofino Marine Protected Area (Italy)

With a surface area of about 4 km², it is delimited at sea by 11 luminous buoys in the near coastal area. Also recognised by the SPAMI, it is home to rich and diverse underwater landscapes, and in particular to red coral (*Corallium rubrum*), a species essentially endemic to the Mediterranean.

3.9.3.11 Capo Testa - Punta Falcone Marine Protected Area (Italy)

The Capo Testa - Punta Falcone Marine Protected Area, established in 2018, leans over the Strait of Bonifacio over 51.6 km² and is characterized by a landscape of white sands and imposing granite rocks which represent true natural monuments.

3.9.3.12 Bergeggi Island Marine Protected Area (Italy)

Bergeggi Regional Nature Reserve and the Bergeggi Island Marine Protected Area cover about 3 km². The coastal stretch between Bergeggi and Spotorno alternates small beaches and short promontories to overhanging cliffs, in which the sea dug some small caves. In front of it, not too far from the mainland, there is the small Bergeggi Island. The island and the rocky coast facing it are part of Bergeggi Regional Nature Reserve since 1985; whereas the MPA was established in 2007.

3.9.3.13 Secche della Meloria (Meloria's shallows) Marine Protected Area (Italy)

At 3 miles far from the coast near Livorno, you could see on the horizon the Lighthouse and Meloria Tower, bulwarks of one of the most peculiar Marine Protected Areas in the Mediterranean Sea.

The Secche della Meloria Marine Protected Area covers more than 9 km², delimiting an area of exceptional historical, archaeological and natural interest. Its high biodiversity, thanks to its variety of habitats, makes it an important ecological conservation site, and also an exceptional destination for snorkelers and divers. The Tower and the Lighthouse of Secchie della Meloria could really be considered as Marine (or maritime) Monuments, since they represented a natural fortress against the enemies, and many shipwrecks occurred there. This Marine Protected Area is thus a site of significant historical importance and a "paradise" of underwater archaeology.

3.9.3.14 Blue Coast Marine Park (France)

Recognised as a SPAMI, it includes the marine protected areas of Carry le Rouet (about 1 km²) and Cap Couronne (about 2km²) in the near coast.

3.9.3.15 Marine natural reserve of Cerbère Banyuls (France)

It covers 6.5 km² of sea, up to about one and a half miles offshore. It is recognised as a SPAMI.

3.9.3.16 Embiez Archipelagos (France)

It covers a marine area of about 3 km² in the very close coastal zone. It is recognised as a SPAMI.

3.9.3.17 Cap de Creus Natural Park (Spain)

Created by law on 12 March 1998, Cap de Creus Natural Park is both terrestrial and maritime. This park, which lies between land and sea, is an area of great beaty and a remarkable geological ensemble with structures and outcrops that make it unique in the world. The impact of the tramontane wind has generated whimsically eroded shapes and transformed its landscape. The marine part of the park covers 2054, 19ha. One of the most remarkable attributes of the seabed of Cap de Creus is its great diversity of communities and species. From the coast to more than 80 m deep, almost everything is possible: rocky bottom and muddy bottom; coves with calm waters and places exposed to strong currents, waves or the tramontana; flat bottoms and rocky walls; well-lit places and shady places. It is recognised as a SPAMI.

3.9.3.18 Parque Naural de Montgri les iles Medes e Baix ter (Spain)

Created by law on 28 May 2010, Montgrí, Medes islands and Baix Ter Natural Park is both terrestrial and maritime. The park has a coastline with cliffs, coves and beaches and seabeds with an undeniable ecological value. It also features a mountain massif that rises from alluvial plans and wetlands formed by the River TER when it runs into the bay of Pals. The marine part of the park covers 2038, 98ha and the Medes Islands with a higher level of protection covers 100,56ha, contemplating their seabed is like going back in time and enjoying the flora, fauna and landscape of a stable and complete ecosystem. Medes Islands are recognised as a SPAMI

3.9.3.19 Columbretes Islands (Spain)

Recognised as SPAMI

3.9.3.20 Natura 2000 sites

The proposed NW Mediterranean PSSA encompasses over 230 Natura 2000 coastal and marine sites.

3.9.4 Future measures proposed for the wider protection of environments

At the twenty-second meeting of the Conference of Parties to the Barcelona Convention (COP 22), the Contracting Parties agreed to submit to the Organization a proposal for the designation of the Mediterranean Sea, as a whole, as an Emission Control Area (ECA). The goal is to prevent, reduce and control emissions of sulphur oxides (SOX) and particulate matter (PM) from ships pursuant to regulation 14 and Appendix III to Annex VI to the International Convention for the Prevention of Pollution from Ships (MARPOL). Hereinafter referred to as the proposed "Med SOX ECA".

The submission set out in document MEPC 78/11 was presented and approved at the 78th session of the Committee in view of its adoption at the following session (MEPC 79) with an entry into effect in 2025.

Conclusion of the first part:

The elements presented in this first part allow a number of observations:

- Firstly, the proposed NW Med PSSA is particularly frequented by ships, whether for the transport of goods, passengers, pleasure craft or fishing. The area is a crossroads for trade and a major tourist destination, with a high level of frequentation in all seasons. In addition, the maritime traffic trends observed are upwards and economies of scale by increasingly large ships transiting within the PSSA.

- Secondly, this area is particularly important from an ecological point of view, at the level of the Mediterranean Sea but more widely at the global level. The area is particularly frequented with marine mammals, including two species that are particularly vulnerable to the risk of ships strikes because of their size: the fin whale (the second largest mammal in the world and vulnerable species according to the IUCN) and the sperm whale (a species in danger of extinction). It is recognized worldwide that the target speed of 10 knots would significantly limits the risk of fatal ship strikes in case of collision between ships and cetaceans. Moreover, It is highlighted the decrease in the probability of encounter between ships and large and medium cetaceans and therefore the mitigation of the risk of collision below 12 knots.

In view of this threat to marine mammal populations and the international commitments made to protect these species, it is essential to propose effective measures to mitigate the risk of ship strikes with cetaceans and to address in the future other ship-generated pollution to protect cetaceans in the area.

ANNEX 2

INFORMATION SUPPORTING THE PROPOSITION OF A PARTICULARLY SENSITIVE SEA AREA (PSSA) IN THE NORTH-WESTERN MEDITERRANEAN SEA

Part II – APPROPRIATE ASSOCIATED PROTECTIVE MEASURES AND IMO's COMPETENCE TO APPROVE OR ADOPT SUCH MEASURES

Introduction

France, Italy, Monaco and Spain made a joint statement in favour of the creation of a PSSA at the annual meeting of the ACCOBAMS²⁹ in November 2019.

1 ASSOCIATED PROTECTIVE MEASURES

Different associated protective measures were considered to protect cetaceans from any adverse effect generated by ships. These include prevention of pollution from ships but also action to minimize ship strikes with cetaceans. The latter is particularly difficult to manage in a large area and needs some thorough considerations.

Circular MEPC.1/Circ.674 of 31 July 2009, guidance document for minimizing the risk of ship strikes with cetaceans, sets out a number of measures to reduce the risk of collision between large cetaceans and ships. A document presented by the IWC in February 2016 (MEPC 69/10/3) summarises the results obtained in terms of reducing the risk of collision between ships and cetaceans since the adoption of the IMO circular. The measures or recommendations already implemented worldwide are of various types:

- Traffic management measures (permanent or seasonal).
- Recommendations for specific routes.
- Prohibited areas.
- Reduction in the speed of ships and in the propeller cavitation (permanent or seasonal).
- Mandatory ship notification systems to trigger anti-collision manoeuvres.

As indicated in MEPC.1/Circ.674, "collisions between cetaceans and ships occur worldwide where there is an overlap between cetaceans and vessel activities. Such collisions involve a wide variety of vessel types, including recreational, commercial and governmental vessels. Damage to vessels, ranging from minor to extreme, has resulted from ship strikes of cetaceans. Such damage includes cracked hulls; damaged propellers, propeller shafts, and rudders; damaged port and starboard aft strut actuators; broken steering arms; and ruptured seawater piping. In some cases, in particular involving large vessels, captains may be unaware that a collision with a cetacean has occurred.

Collision of HSC with a cetacean will be fatal for the marine mammal but they did generate important damage to the HSC and serious injuries to passengers too³⁰. In that respect, it is proposed the following appropriate measures to prevent ship strikes with cetaceans as basic safety measures to all ships.

In that respect, France, Italy, Monaco and Spain propose associated protective measures that should benefit to the preservation of cetaceans but the safety of navigation as well.

²⁹ ACCOBAMS: Agreement on the Conservation of Cetaceans in the Black Sea, Mediterranean Sea and contiguous Atlantic area

³⁰ <u>https://people.com/pets/japan-high-speed-ferry-hits-whale/</u>

Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Hungary, Ireland, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Sweden, as members of the European Union, associate themselves with this proposal as they share a common interest with the riparian States.

1.1 Existing associated protective measures

- 1.1.1 International existing measures
 - Adoption on 2nd November 1973 of a Special Area (SA) covering the entire Mediterranean under Annexes I (Regulation for the Prevention of Pollution by oil) and V (Regulation for the Prevention of Pollution by garbage from ships) of the MARPOL Convention. This measure came into force on 2nd October 1983.

SA under MARPOL annex I prevents the viscous oil during an oil spill to cover the surface of the cetacean's body for a long period and can reduce its filtering capacity.

SA under MARPOL annex V prevents the presence of marine litter in increasing quantities, which is a serious threat to marine ecosystems, particularly for turtles and marine mammals (risk of entanglement, suffocation by ingestion).

- SOLAS V/4 Navigational warnings and Res.MSC.469(101) amendments to worldwide navigational warning service (WWNWS)

WWNWS includes coastal warnings broadcast information, which is necessary for safe navigation within areas seaward of the fairway buoy or pilot station, should not be restricted to main shipping lanes. Where the area is served by International NAVTEX, it should provide navigational warnings for the entire NAVTEX service area. Coastal warnings should include different subjects, in particular drifting hazards (including derelict ships, ice, mines, containers, other large items over 6 metres in length, etc.).

Today the NAVTEX is one of the principal components of MSI within GMDSS in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974. Moreover, it should be noted that this solution is inexpensive and does not require material adaptation on board ships and for coastal States.

Large and medium cetaceans can be considered as a dangerous drifting object, which, in the event of a ship strike, can be a cause of death for the cetacean but can also cause significant damage to the structure of the ship or to the hull appendix. Information in real or near real time is relevant for maritime safety as well as the preservation of cetaceans. The proposed NW Med PSSA is covered by 3 international NAVTEX stations in La Garde (France), La Maddalena (Italy) and Cabo La Nao (Spain).

For instance, navigational warning broadcasted on NAVTEX could be used for "Dynamic Management Areas" (DMA) whereby temporary zones are created aggregations of cetaceans. Ships would be asked to avoid DMA or travel through them with caution at reduced speed.

It will only be necessary to establish an information transmission chain to the different NAVTEX coordinators from the source of information generally coming from ships at sea at it is the case for any navigational warnings.

- SOLAS V/27 Nautical Chart and nautical publication. Nautical charts and Nautical publications, such as sailing directions, notices to mariners and other nautical publication are necessary to inform the danger of navigation.
- 1.1.2 Existing measures in France, Italy, Monaco and Spain

France:

- The only specific measure implemented to reduce the risk of collision of a certain type of vessels with cetaceans concerns the obligation to equip a position-sharing device to avoid strike with cetaceans in the Pelagos marine sanctuary. This provision was introduced for certain types of French vessels by Law 2016-1087 of 8 August 2016 for the reconquest of biodiversity, nature and landscapes³¹.
- Law 2016-1087 also introduces liability and compensation for '*pure environmental damage*', or '*ecological damage*' into the French Civil Code.

Spain:

- The Mediterranean Cetacean Migration Corridor (CMC) Marine Protected Area (MPA) established by Royal Decree 699/2018 on 29th June 2018 by the Spanish government:

The protected area covers 46.385,7 km² and is characterised by its concentration of significant numbers of many cetacean species (including fin whale and sperm whale), having special relevance for the fin whale that uses it as a migratory route towards its breeding and feeding areas in the northern Mediterranean.

- Underground geological research by means of active systems (probes, compressed air or controlled explosions, or underground drilling) are forbidden, except for permits for research or exploitation in force.
- Any type of hydrocarbon extractive activity is prohibited, except for research or exploitation permits in force.

- The marine reserve of Islas Columbretes created under Ministerial Order of 19th April 1990.

The marine reserve has a total area of 5.543 hectare. Its Management Plan (Ministerial Order ARM/384/2008) reflects its updated zoning and allowed uses. The marine reserve encompasses two no-take marine reserves, prohibits discharges into the sea, the introduction of exotic species and sets a maximum speed of 3 knots for recreational vessels.

 In addition, an exclusion zone for maritime navigation was established around the Columbretes Islands marine reserve in 2004, by the Spanish Directorate-General for Merchant Shipping. This exclusion area covers a circular area of 8 miles, centred around the Racon of the Isla Grande, and is mandatory for ships over 1,000 GT transporting dangerous or polluting goods. It is included in Nautical Charts.

³¹ https://www.legifrance.gouv.fr/codes/article_lc/LEGIARTI000033029052/

- The proposed NW MED PSSA covers part of the Traffic Separation Scheme (TSS) established 6 nm off Cabo de la Nao, in the southern part of the area. This TSS is part of the three TSS (Cabo de Gata and Cabo de Palos) established around the Spanish Mediterranean coastline to regulate traffic flows from/ to the Gibraltar strait towards/from NW Mediterranean ports.
- Notice to Mariners to protect cetaceans from the risk of ship collisions in the Strait of Gibraltar and the new location for the "Cabo de Gata" Traffic Separation Scheme. In the Gibraltar Strait, a Notice to Mariners has been published on January 2007 by the "Instituto Hidrográfico de la Marina" (Spanish Navy Hydrographic Institute under the Ministry of Defence). This Notice establishes a security area characterized by high densities of sperm whales, where crossing ships are recommended to limit their speed to a maximum of 13 knots, and to navigate with particular caution. The same notice will be broadcasted regularly by VHF radio from April to August and included in the Nautical Charts.

Italy:

- Environmental protection in the Constitution of the Italian Republic (Articles 9 and 41)

On 8th February 2022, the Italian parliament approved the amendment to articles 9 and 41 of the Constitution regarding the protection of animals. The edited articles now read as follows: "Article 9: The Republic promotes the development of culture and scientific and technical research. It protects the landscape and the historical and artistic heritage of the nation. It protects the environment, biodiversity and ecosystems, also in the interest of future generations. State law regulates the methods and forms of animal protection". "Article 41: Private economic initiative is free. It cannot take place in conflict with social utility or in a way that could damage safety, freedom, human dignity, health, the environment. The law determines the appropriate programs and controls so that public and private economic activity can be directed and coordinated for social and environmental purposes".

- Italian ratification law of the Agreement for the Pelagos Sanctuary - Law no. 391 of 11 October 2001 and prohibition of high-speed motorboats competitions/racings within the Pelagos Sanctuary.

In addition to the ratification of the trilateral Agreement for the protection of marine mammals (Pelagos Agreement), while transposing the text of the Agreement into its own legal system, Italy has provided for the prohibition of carrying out competitions of high-speed motorboats in territorial waters, therein including inland waters (art. 5 of the Italian ratification law of the Agreement for the Pelagos Sanctuary - Law no. 391 of 11 October 2001). This prohibition is duly applied by competent authorities for different types of fast motorboats including jet skis, under the control of the Port Authority - Coast Guard.

- Prohibition of hydrocarbon exploration and exploitation (Legislative Decree 3 April 2006, n. 152 Environmental regulations, Article 6 paragraph 17 amended by Law Decree 22 June 2012 n. 83 Urgent measures for the growth of the country, article 35).

Article 35 of Law Decree 83/2012 establishes the following: "For the purposes of protecting the environment and the ecosystem, within the perimeter of marine and

coastal areas protected [...], by virtue of laws national, regional or in implementation of international acts and conventions, the activities of research, prospecting and cultivation of liquid and gaseous hydrocarbons are prohibited" in various Italian sites of national importance. "The prohibition is also established in the sea areas located within twelve miles of the coastlines along the entire national coastal perimeter and from the external perimeter of the aforementioned marine and coastal protected areas, [...]".

Rules for the enforcement and organization of the Portofino Marine Protected Area (G.U. N°181 of 04.08.2008)³²

The Marine Protected Area of Portofino has a number of restrictions for boaters since 2008 (Article 16 - Discipline of pleasure boating; Article 17 - Rules of mooring activity; Article 18 - Discipline of anchoring activity), including a general speed limit of 5 knots and anti-pollution requirements (entry allowed only units equipped with boxes for the collection of sewage; engine compliant with Directive 2003/44/EC relating to gaseous and acoustic emissions (electric outboard motors, inboard engines compliant with the directive, 4-stroke outboard engines with unleaded petrol, 2-stroke outboard engines with direct injection); use of zero release antifouling paints).

- Regulation governing the activities permitted in the Cinque Terre Marine Protected Area (Decree of the Ministry of the Environment of 12 December 1997).

Various rules on pleasure crafts, including speed limits depending on the areas (5 knots "zone B" and in "zone C" within 300m from the coast; 10 knots in "zone C" over 300m from the coast).

1.2 Proposed associated protective measures (APM)

These recommendations to seafarers/ship operators 1,2,3,4,5,6 and 7 described below shall be clearly indicated on nautical charts, nautical publications and nautical information:

- Seafarers/ship operators should navigate with particular caution within the NW Med PSSA, when and where large and medium cetaceans are present to limit their speed between 10 and 13 knots as voluntary speed reduction, while seeking to avoid possible negative impacts of reduced speeds on manoeuvrability and underwater noise in absence of other design adaptations on the ship;
- 2. Ships should to avoid large and medium cetaceans and keep an appropriate safety distance or speed reduction measure from any large and medium cetaceans observed or detected in close quarter situation. A safety distance or speed reduction measure should be adapted to the circumstances and existing conditions;
- Ships should broadcast by VHF or other suitable means on the area the position of medium and large cetaceans observed or detected and should transmit the information and the position to a designed coastal Authority;

³² https://www.portofinoamp.it/chi/statuto-e-regolamenti/regolamentoAMPinglese.pdf

- 4. Ships should report any collision and near miss collision with cetaceans to a designated coastal Authority(ies). Designed coastal Authority(ies) should forward this information to the International Whaling Commission (IWC), which holds a global cetacean ship strikes database. This can be done by using the IWC web-base interface: http://iwcoffice.co.uk/sci_com/shipstrikes.htm or by e-mailing the IWC Secretariat at: shipstrikes@iwcoffice.org;
- Designated coastal Authority(ies) should broadcast information, when needed, to ships about the presence of large and medium cetaceans as navigational warning. The Navtex could be identified in the future as one of the broadcasting vectors;

Large and medium cetaceans can be considered as a dangerous drifting object, which, in the event of a ship strike, can be a cause of death for the cetacean but can also cause significant damage to the structure of the ship or to the hull appendix. Information in real or near real time is relevant for maritime safety as well as the preservation of cetaceans. The proposed NW Med PSSA is covered by 3 international NAVTEX stations in La Garde (France), La Maddalena (Italy) and Cabo La Nao (Spain). The coverage areas of the NAVTEX stations indicated in the GMDSS master plan module of the Organization's Global Integrated Shipping Information System (GISIS) are represented on the figure 1 below, with the following values:

- 1. Cabo La Nao NAVTEX station : 220 NM
- 2. La Garde NAVTEX station : 250 NM
- 3. La Maddalena NAVTEX station : 320 NM



Figure 1 – NAVTEX coverage in NW Mediterranean

- 6. Ship masters should determine the watchkeeping arrangements taking into account the presence of large and medium cetaceans, including the use infrared binocular to help the detection of large and medium cetaceans by night or fixed infrared camera detection system. These systems would help to detect not only large and medium cetaceans, but also any man-overboard or castaways by night;
- 7. The designated coastal authorities to prepare material, and disseminate information in order to raising awareness on the crews (by means such as the

publication of materials) and increase their knowledge on the protection of the marine environment on the PSSA with a particular emphasis on cetaceans.

1.3 Prospective protective measures

Navigational warnings:

Information to navigators by navigational warnings could be enhance in the future in digital format by the NAVDAT system.

At its 102nd session, the Maritime Safety Committee (MSC) agreed to include in its postbiennial agenda an output on "Development of performance standards for a digital navigational data system (NAVDAT)".

The proposed output will introduce a new high-speed digital system capable of delivering a higher volume of information at a higher rate than the present NAVTEX system, including graphical data. In areas where it would become available, ships can choose to receive this information optionally via NAVDAT rather than NAVTEX.

"Dynamic Management Areas" (DMA) would be transmitted in an easier way to ships and could be display on ECDIS or ENC. Digital information will hence facilitate the change in the voyage planning by navigators in order to avoid area of aggregations of cetaceans or travel through them with caution at reduced speed.

Regional governance:

France, Spain, Italy and Monaco should sign a Memorandum of Understanding to harmonize and facilitate the collection of data within the NW Med PSSA with the aim of better informing ships on the presence of cetaceans and implementing incentive measures to ships following the PSSA's recommendations to protect cetaceans

This Memorandum of Understanding should also make it possible to create synergies between the riparian States in order to support the development of new technologies for detection at sea and thus reducing ship strikes of cetaceans, as well as the implementation of incentive measures. The riparian States should consider fund research activities in connection with industry and the scientific and research community, actions to raise the awareness of shipping stakeholders on the protection of cetaceans and the implementation of incentive measures to ensure compliance with the recommendations. Emerging devices in the future could, for example, include passive acoustic monitoring, predictive modelling or tagging of cetaceans. There are currently known methods providing such information on a scale that could be of interest to minimize the risk of collision which deserves to be deployed and integrated into the chain of navigational warning broadcast to inform navigators in due time.

A share governance in the detection of cetaceans in the PSSA will facilitate the collection of information on the presence of cetaceans within the PSSA by:

- Direct observation from navigators on ships;
- Detection by any shipborne system, and;
- Detection by a network of acoustics buoys monitored by riparian States.

The riparian states should encourage the review of the adopted measures after a certain time to assess their effectiveness, the opportunity to implement new operational measures at national and international level in order to limit the pressures generated by the maritime traffic on medium and large cetaceans.

1.4 Category of ships to which the proposed APM would apply

The proposed associated protective measures would apply to any commercial ships and to pleasure yacht of gross tonnage >300 UMS. Exempted vessels are those not subject to measures define in these Annex and include war ship and state law enforcement vessels engaged in enforcement or in search and rescue activities.

2 POLITICAL IMPLICATIONS

Proposed associated protective measures are win-win measures for cetaceans and ships and in line with the Organization's instruments.

3 ECONOMIC IMPLICATIONS and expected impact on shipping

The costs of development and maintenance in operational condition of a detection network based on emerging technologies should be address in the future between coastal States involved in the NW Med PSSA in order to reduce the economic impact via the Memorandum of Understanding.

The implementation of local and temporary avoidance and slow down measures is likely to have both positive and negative economic impacts. (*Analysis of the maritime traffic and the risk of collision in North West Mediterranean Sea. WWF 2021*).

The proposed associated protective measures only recommended and by their nature do not have any significant economic impact for shipping. Voluntary speed reduction measure (VSR) can have economic implication unless it is associated with an incentive system to reward virtuous ships

3.1 Positive impact

Among the positive effects are:

- The relationship between the ship speed and fuel consumption and the related emissions – is almost cubic (i.e., consumption is proportional to speed cubed; Leaper, 2019). Reducing speed is, therefore, one of the most effective solutions to reduce emissions (Aronietis et al., 2014; Psaraftis et al., 2009; Seediek and Transport, 2015) and fuel consumption;
- In addition, by reducing speeds, the trip becomes safer, which can have financial benefits in the form of lower insurance costs. Measures can also differentiate a marketing proposition and increase customer satisfaction. Environmental excellence and respect for good practices by ships in favor of biodiversity that can be certified by eco-labels;
- Permanent measures facilitate understanding by operators and avoid a regulatory watch by the ship-owner that would be linked to a dynamic management of the area and reduce the administrative burden and the impact on the management of the vessel within the PSSA.

3.2 Impacts to be mitigated

Among the negative effects are:

- The lengthening of journey times due to avoidance manoeuvres linked to a cumulative effect between a lengthening of the trajectory (avoidance) or a slowing down on a portion of the trajectory; leading to a longer trajectory or a slower vessel speed;
- Increased uncertainty about arrival times, at destination which is likely to generate management costs relating to the organization of the activity and access to port facilities; keeping the same arrival time is an important criterion for some activities, but less critical for others. Ferry companies have built their economic models on crossing schedules taking into account the requirements of their customers and can hardly afford to extend the transit time to comply with their business model;
- The dissemination of cetacean location data sharing should be optimized so as not to overload crews with information.

4 ACTION TAKEN PURSUANT TO DOMESTIC LAW

France, Italy, Monaco and Spain should take the necessary measures to promote compliance by ships flying their flag with rules adopted by the Organization to reduce and minimize ship strikes of cetaceans. Enforcement and police measures are in the hands of coastal States depending on their national law and the location of the offense, which may expose offenders to administrative and/or criminal sanctions.

ANNEX 3

Description of the proposed NW Med PSSA (France-Italy-Monaco and Spain)

The proposed NW Med PSSA is located between the coastline of France, Italy, Monaco and Spain and a line with the following coordinates::

A	38° 39' 59.379" N	000° 6'0.000" E
В	38° 39' 59.379" N	000° 47' 59.476" E
С	38° 50' 03.331" N	001° 00' 00.398" E
D	39° 19' 01.812" N	001° 00' 25.212" E
E	39° 28' 42.075" N	001° 40' 02.495" E
F	39° 51' 21.986" N	002° 16' 09.853" E
G	40° 34' 13.067" N	004° 04' 31.926" E
Н	40° 58'0.000" N	008° 12'0.000" E
I	41° 09'10.800" N	009° 31'10.800" E
J	42° 21'14.400" N	011° 31'0.000" E

To be noted, from H (Falcoe Cape) to I (Ferro Cape) the South boundary follows the coastline of Sardinia.

Coordinates are provided by the European Terrestrial Reference System 89 (ETRS-89).

This area encompasses the existing Spanish "Mediterranean Cetacean Migration Corridor" and the Pelagos Sanctuary defined as such:

A - "Mediterranean Cetacean Migration Corridor"

ID	Longitude (ETRS-89)	Latitude (ETRS-89)
1.	003° 39' 02.002"E	42° 18' 57.294'' N
2.	003° 39' 02.026"'E	41° 54' 15.252'' N
3.	003° 30' 32.060''E	41° 37' 36.567'' N
4.	003° 15' 18.370''E	41° 23' 05.374'' N
5.	001° 34' 43.766''E	40° 42' 21.785'' N
6.	000° 33' 27.757''E	40° 00' 55.698'' N
7.	000° 20' 21.559"E	39° 30' 07.070" N
8.	000° 20' 21.559''E	38° 49' 44.729'' N
9.	000° 30' 05.254"E	38° 39' 59.379'' N
10.	000° 47' 59.476''E	38° 39' 59.379'' N
11.	001° 00' 00.398"E	38° 50' 03.331" N
12.	001° 00' 25.212''E	39° 19' 01.812'' N
13.	001° 40' 02.495"E	39° 28' 42.075'' N
14.	002° 16' 09.853"E	39° 51' 21.986'' N
15.	004° 04' 31.926"E	40° 34' 13.067'' N
16.	004° 33' 24.766''E	41° 06' 51.050'' N

B - Pelagos Sancturary

Boundary	Description	Longitude	Latitude
	A line extending from the Escampobariou Point (on the western edge of the Giens peninsula)	N 43°01,70'	E 06°05,90'
vvestern	to the Falcone Cape (the westernmost part of the Gulf of Asinara)	N 40°58'00	E 08°12'00
Eastern	A line extending from the Ferro Cape (on Sardinia's north-eastern coast)	N 41°09'18	E 09°31'18
	to Fosso Chiarone (on the west coast of Italy)	N 42°21'24	E 11°31'00

ANNEX 4

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MARINE ENVIRONMENT PROTECTION COMMITTEE 79th session Agenda item 10

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E

IDENTIFICATION AND PROTECTION OF SPECIAL AREAS, ECAS AND PSSAS

Designation of a particular sensitive sea area in the North-Western Mediterranean Sea to protect cetaceans from international shipping

Submitted by France, Italy, Monaco and Spain

SUMMARY								
<i>Executive summary:</i> This document suggests the designation of a particularly se sea area (PSSA) in the North-Western Mediterranean Sea. Th is limited by the coastline of France, Italy, Monaco and Spatincludes areas under the jurisdiction of coastal States. Due significance of the ecological, socio-economic and scientific of the area, several national and international protective mea are in place. The designation of a PSSA and the add associated measures will contribute to protect cetaceans, mining the risk of ship strikes and support scientific research on the risk of ship strikes and support scientific research.								
Strategic direction, if applicable:	4							
Output:	4.1							
Action to be taken:	Paragraph 17							
Related documents:	MEPC 59/18; MEPC 77/INF.28	MEPC 69/10/3;	MEPC 77/INF.27	and				

Introduction

1 France, Italy, Monaco and Spain propose the designation of a Particularly Sensitive Sea Area (PSSA) in the North-Western Mediterranean Sea, hereinafter referred to as "NW Med PSSA", in order to protect cetaceans from the risk of ship collisions, ship-generated pollution and to increase awareness on a critically important area for the fin whale and the sperm whale.

2 The Mediterranean Sea is strategic both for human activities at sea and for the preservation of remarkable biodiversity. The proposal is justified by the international nature of the vessels and the particular concentration of marine mammals in the area concerned, as well as by the plurality of coastal States concerned or associated. Following up on the Committee's recommendation at MEPC 77, extensive consultation with all the stakeholders impacted or

involved in the project has been organized by France, Italy, Monaco and Spain to define the geographical scope and the nature of the proposed associated protective measures.

Proposed PSSA

3 The proposed NW Med PSSA is located between the coastline of France, Italy, Monaco and Spain and, towards the South, a line defined by the coordinates set out in annex 3 to this document and shown in figure 1.



Figure 1: proposed NW Med PSSA (Source: SHOM)

4 The proposed NW Med PSSA encompasses the whole Pelagos Sanctuary and the Spanish cetacean corridor, which are already designated as Special Protected Areas of Mediterranean Importance (SPAMIs) under the Barcelona Convention and the UN Mediterranean Action Plan (section 3.9.1.1 in annex 1) dedicated to the conservation of cetaceans. It also includes two ecologically and/or biologically significant marine areas recognized by the Convention on Biological Diversity (CBD) (section 2.1.2 in annex 1).

5 The Mediterranean Sea is strategic both for human activities at sea and for the preservation of its remarkable biodiversity. It is one of the 34 "hot spots" for global biodiversity, representing 10% of global biodiversity with 28% of identified endemic species. It is a crossroads for global maritime exchanges, an attractive area for tourism and traditional activities such as fishing, and a place hosting unique natural habitats and species.

6 Ship traffic in the Mediterranean Sea area is substantial as it is navigated by more than 30,000 vessels annually, with most vessels calling on Mediterranean ports and engaging in regional commerce among the Mediterranean coastal States. The Mediterranean is also an

important region for international shipping and commercial navigation. The Mediterranean Sea represents approximately 0.7% of navigable seas and oceans, and Mediterranean ship traffic accounts for about 7% of global shipping activity, energy use and emissions. In particular, 9 of the 20 largest cargo ports of the European Union are in the Mediterranean region; 4 of these – Barcelona, Genova, Marseille and Valencia – are within the proposed PSSA.

Among the pressures on the marine environment, international shipping traffic has been identified as a threat to the conservation of cetaceans, particularly in terms of accidental mortality and serious injuries to large cetaceans, such as the fin whale and the sperm whale, together with chemical and acoustic threats. Based on such threats, the co-sponsors propose to the Committee the designation of the NW Med PSSA. This approach is justified by the global scale of the shipping traffic in this area, the high concentration of cetacean species in this area (figures 2 and 3 in annex 1), as well as by the diversity of coastal States concerned. The proposal is in line with the Organization commitment set out in Circular MEPC.1/Circ.674 of 31 July 2009, setting out a guidance document for minimizing the risk of ship strikes with cetaceans.

Description, significance of the area and vulnerability

8 Further details of the proposal related to the description, significance of the area and vulnerability are provided in annex 1 in accordance with the Revised guidelines for the identification and designation of particularly sensitive sea areas (resolution A.982 (24), as amended by resolution MEPC.267 (68)):

Associated protective measures

9 Annex 2 provides details on existing and proposed associated protective measures in accordance with resolution A.982 (24), as well as prospective measures for the future.

Existing associated protective measures

10 The area identified already benefits from existing protective measures consisting in the following:

- .1 the designation as a Special Area (SA) of the entire Mediterranean sea under Annexes I and V of the MARPOL Convention; and
- .2 other national existing associated protective measures listed in annex 2.

However, these existing protective measures allow further protection only on specific threats, such as the discharge of oil or oily mixtures and the discharge of garbage, or only in some parts of the area. Therefore, in order to complement them, and to include ship strikes mitigation, the co-sponsors propose to consider and develop additional associated protective measures.

11 Other more general associated protective measures stemming from SOLAS such as navigational warnings, navigational charts and navigational publications are further elaborated in annex 2.

Proposed associated protective measures

12 The co-sponsors propose to consider the following set of possible associated protective measures within the NW Med PSSA. These measures could significantly enhance the protection of cetaceans in the NW Med PSSA, due to the complexity of environmental issues at stake and the diverse nature of the shipping traffic in the area.

13 The following possible associated protective measures are proposed for consideration:

- .1 Recommendation to seafarers/ship operators to navigate with particular caution within the NW Med PSSA, when and where large and medium cetaceans are present, and to limit their speed to between 10 and 13 knots as voluntary speed reduction, while seeking to avoid possible negative impacts of reduced speeds on manoeuvrability and underwater noise in absence of other design adaptations on the ship.
- .2 Recommendation to ships to avoid large and medium cetaceans and keep an appropriate safety distance or speed reduction measure from any large and medium cetaceans observed or detected in close quarter situation. A safety distance or speed reduction measure should be adapted to the circumstances and existing conditions.
- .3 Recommendation to ships to broadcast by VHF or other suitable means on the area the position of medium and large cetaceans observed or detected and to transmit the information and the position to a designed coastal Authority.
- .4 Ships should report any collision and near miss collision with cetaceans to a designated coastal Authority(ies). Designed coastal Authority(ies) should forward this information to the International Whaling Commission (IWC), which holds a global cetacean ship strikes database.
- .5 Recommendation to designated coastal Authority(ies) to broadcast information, when needed, to ships about the presence of large and medium cetaceans as navigational warning.
- .6 Recommendation to ship masters to determine the watchkeeping arrangements taking into account the presence of large and medium cetaceans, including the use of infrared binoculars to help the detection of large and medium cetaceans by night or fixed infrared camera detection system. These systems would help to detect not only large and medium cetaceans, but also any man-overboard or castaways by night.
- .7 The designated coastal Authority(ies) should prepare material and disseminate information in order to raise awareness on the crews (by means such as the publication of materials) and increase their knowledge on the protection of the marine environment on the PSSA with a particular emphasis on cetaceans.

14 To ensure their effectiveness, the measures adopted, in particular 1, 2, 3, 4 and 6 would have to be clearly indicated on nautical charts, nautical publications and nautical information.

15 In accordance with the procedure set out in Assembly resolution A.982(24) on *Revised guidelines for the identification and designation of particularly sensitive sea areas*, if the Committee agrees to designate in principle the NW Med PSSA based on the consideration of the above protective measures, the co-sponsors suggest deferring to the appropriate body/ies the task to further develop and adopt the proposed associated protective measures. The co-sponsors also suggest that the Committee invites delegations to submit concrete proposals for further consideration of any other possible prospective associated protective measures with a view to enhancing the effectiveness of the NW Med PSSA in protecting cetaceans from shipping traffic.

Prospective protective measures

16 Other associated protective measures could significantly enhance the protection of cetaceans in the NW Med PSSA:

- .1 the implementation by the riparian States France, Spain, Italy and Monaco of a Memorandum of Understanding to harmonize and facilitate the collection of data within the NW Med PSSA with the aim of better informing ships on the presence of cetaceans and implementing incentive measures to ships following the PSSA's recommendations to protect cetaceans;
- .2 to encourage the development of information for seafarers/ship operators through navigational warnings, in the future also in digital format through the NAVDAT system; and
- .3 to encourage the riparian states to review the adopted measures after a certain time to assess their effectiveness, and the opportunity to implement new operational measures at national and international level in order to limit the pressures generated by the maritime traffic on medium and large cetaceans.

Action requested of the Committee

17 The Committee is invited to consider the proposals and information contained in this document and its annexes and take action, as appropriate.

ANNEX 1

INFORMATION SUPPORTING THE PROPOSAL OF A PARTICULARLY SENSITIVE SEA AREA (PSSA) IN THE NORTH-WESTERN MEDITERRANEAN SEA

Part I – DESCRIPTION, SIGNIFICANCE OF THE AREA AND VULNERABILITY

1 DESCRIPTION OF THE AREA

The proposed area covers a perimeter corresponding to the eastern boundary of the Pelagos Sanctuary and to the west to the Spanish cetacean migration corridor. These are two specially protected areas of Mediterranean importance (SPAMI) established under the Barcelona Convention and dedicated to cetaceans including over 230 EU Natura 2000 sites (figure 1A). The proposed area fully or partly overlaps, under the Convention on Biological Diversity (CBD) framework, the two ecologically or biologically significant marine areas (EBSA) and three important marine mammal areas (IMMA) identified by the International Union for Conservation of Nature (IUCN) Marine Mammal Protected area task force. This perimeter also includes most of the Strait of Bonifacio PSSA.





Figure 1: (A) legally binding area-based protection measures: SPAMIs (Pelagos Sanctuary and Spanish cetacean corridor), Bonifacio Strait PSSA and Natura 2000 sites; (B) international recognitions on the ecological and biological importance: EBSAs and IMMAs – source: ISPRA

1.1 Physical features

1.1.1 Bathymetry

The North-Western Mediterranean portion of the basin is characterised by the rapid plunge of its coasts towards the deep sea (up to 2,000 metres in some area) in proximity of the main islands (Corsica and Sardinia) and off the Ligurian coasts and most of the Provence-Alpes-Côte d'Azur's and Catalonia's coasts. The continental shelf is developed off Tuscan coasts (including all around the Tuscan archipelago) and Valencian coasts, with a maximum extension (about 100 km wide) within the study area in the Gulf of Lion (Occitanie).

Another notable feature of the North-West Mediterranean seabed is that is shows one of the highest densities of canyons globally, veritable submarine valleys present on the oceanic slope, generally between 300 and 600 metres deep. Canyons are usually defined from the border from the border of the continental shelf, having their "head" beginning at -200m deep, and finishing at the bottom of the oceanic bed at -2000m deep.

1.1.2 Special weather and ocean phenomena

The Mediterranean is an evaporation basin: precipitation and river inputs do not compensate for evaporation. This water deficit is made up by Atlantic water entering the surface through the Strait of Gibraltar. Less salty and therefore less dense than the Mediterranean water, this water will remain on the surface and determine the surface circulation.

The surface currents have a complex organisation, particularly around Corsica. The main horizontal marine currents have a so called cyclonic direction (counter-clockwise). The areas where they reach a higher intensity in our study area, i.e. an average annual speed of more

than 0.25 metre per second, are the Ligurian Sea and the Tyrrhenian Sea, east of Bonifacio (Corsica). Seasonal trends show an increase in speed during the summer and autumn.

Upwelling phenomena, vertical currents that allow deep water to rise to the surface, are due to a combination of horizontal currents with the wind and can be influenced by the presence of submarine canyons. The Ligurian Sea and the northern Tyrrhenian Sea are the most exposed to this phenomenon. In spring, the increase in the temperature of the marine waters leads to a vertical stabilisation of the water masses.

Thus, marine currents play a very important role in the functioning of ecosystems: through their associated horizontal and vertical movements, they accompany the export of organic matter from the coast to the open sea.

2 SIGNIFICANCE OF THE AREA

2.1 Ecological criteria

2.1.1 Rarity

The North-Western Mediterranean is part of a semi-enclosed sea with a high rate of endemism. The vast majority of its biological populations are composed of Mediterranean subpopulations, genetically isolated from the Atlantic populations and the others.

2.1.2 Critical habitat

The ecological and biological significance of the proposed PSSA is supported by the existence of two areas listed under the CBD framework of the EBSAs, which are overlapping it (figure 1):

- 1. the North-Western Mediterranean Benthic Ecosystems;¹ and
- 2. the North-Western Mediterranean Pelagic Ecosystems.²

In addition, over two thirds of the proposed PSSA are covered by the "North-Western Mediterranean Sea, Slope and Canyon System",³ the "The Shelf of the Gulf of Lion"⁴ and the "Western Ligurian Sea and Genoa Canyon"⁵ IMMAs, identified by the IUCN Marine Mammal Protection Working Group. Moreover, the PSSA includes a candidate IMMA (the "Central Tyrrhenian Sea IMMA") and an Area of Interest (the Tuscan Archipelago), which could become soon IMMAs. It is also adjacent to the "Balearic Islands Shelf and Slope IMMA", off the southern coasts of Balearic Islands, a critical habitat for the Mediterranean sperm whale (figure 1). It also includes the Pelagos Sanctuary for marine mammals.

¹ https://chm.cbd.int/database/record?documentID=204124

² https://chm.cbd.int/database/record?documentID=204125

³ https://www.marinemammalhabitat.org/portfolio-item/north-western-mediterranean-sea-slope-canyonsystem/

⁴ https://www.marinemammalhabitat.org/portfolio-item/shelf-gulf-lion/

⁵ https://www.marinemammalhabitat.org/portfolio-item/western-ligurian-sea-genoa-canyon/

These areas have a set of geomorphological and oceanographic features that favour productivity levels of extraordinary biological and ecological importance for the region. In particular, the proposed PSSA area overlaps important habitats for the endangered Mediterranean fin whales (*Balaenoptera physalus*), the endangered sperm whales (*Physeter macrocephalus*), the vulnerable Cuvier's beaked whales (*Ziphius cavirostris*), the Habitats European Directive Annex II bottlenose dolphins (*Tursiops truncatus*) and the endangered Risso's dolphins (*Grampus griseus*) (ACCOBAMS 2022). All cetacean species are also listed in Annex IV of the Habitats, Fauna and Flora European Directive 92/43/EEC (animal and plant species of Community interest that require strict protection). These species are included in the IUCN red list.

2.1.2.1 Benthic habitats: distribution and specific habitats

The theoretical biological zones concerned by the study are mainly the circalittoral stage (from 30-35 m depth to the edge of the continental shelf), the bathyal stage (from the edge of the continental shelf to the foot of the slope, i.e. 2,200 to 2,500 metres depth) and the abyssal stage (beyond 2,500 metres depth). The nature of the seabed is variable (hard bottom, soft sandy to muddy bottom) and contributes to the great variety of benthic populations observed. At the circalittoral level, the coralligenous bottoms constitute a typical Mediterranean habitat and underwater landscape, which is also a biodiversity hotspot: nearly 1700 species of invertebrates, 315 species of algae and 110 species of associated fish have been estimated (Ballesteros, 2006). At the bathyal level, certain canyons in the western Mediterranean are home to megafauna habitats, the cold water coral beds. These are areas of remarkably high biodiversity, refuges and feeding grounds for many species, including some commercial fish.

2.1.2.2 The case of cetaceans

The preservation of cetaceans is a necessity in terms of maintaining the ecological balance in the Mediterranean Sea, and contributes to the mitigation of climate change⁶ their economic value must also be considered, as cetaceans play a major role in the development of tourism in the area. Finally, from the point of view of biodiversity, some of the Mediterranean cetacean subpopulations are genetically isolated from Atlantic populations and the others (e.g. fin and sperm whales), which gives them a unique value.

Numerous studies have attempted to define the habitat of cetaceans and distinguish the presence of different species by physical and hydrological factors such as surface water temperature and the different water masses present, topographical features, and currents. The presence of cetaceans is often dependent on the distribution of the prey they feed on. The continental slope is the preferred habitat of species with a specialised diet composed mainly of cephalopods: the sperm whale, the Cuvier's beaked whale, the long-finned pilot whale and the Risso's dolphin; the great abyssal plain is the preferred habitat of the fin whale. The bottlenose dolphin prefers waters to the continental shelf, usually within the 100 m isobath.

The proposed PSSA is frequented by several species of cetaceans, eight of which (fin, sperm, Cuvier's beaked and long-finned pilot whales, Risso's, bottlenose, striped and common dolphins) are regularly present all year round.

The importance of this area for fin whales is clear: the estimated abundance of this species within the proposed PSSA represents about the 67% of the whole Mediterranean population (ACCOBAMS 2021). Concerning the sperm whale, compared to the total Mediterranean

⁶ Roman, J., J. Estes, L. Morissette, C. Smith, D. Costa, J. McCarthy, J. B. Nation, S. Nicol, A. Pershing, and V. Smetacek. 2014. "Whales as Marine Ecosystem Engineers" *Frontiers in Ecology and the Environment* 12 (2): 377–85.

estimate of about 1400 individuals (ACCOBAMS 2021), the estimate in half of the proposed PSSA (the whole Pelagos Sanctuary and French waters; Laran *et al.* 2017) was between 300 and 600 individuals, with higher numbers in winter. The predicted distribution of these two species is shows in figures 2 and 3.



Figure 2: Above: Fin whale predicted densities (summer data: 1999-2016) (Mannocci et al., 2018);



Below: Fin whale predicted densities (summer 2018) (ACCOBAMS, 2021)

Figure 3: Sperm whale sightings and acoustic detections (ASI 2018, white squares and red/orange circles), overlaid on a predictive density map from Mannocci et al., 2018 (yellow = highest probability, blue = lowest probability) (ACCOBAMS, 2021)

To date, there is no fine-scale mapping of the preferential habitats of these cetacean species for the entire North-Western Mediterranean basin that could be used to guide a zoning approach. Thus, the identification of areas with higher risk of collision between ships and sensitive species (the fin whale and the sperm whale) within the proposed PSSA is complex.

The latest cetacean research campaigns in the Mediterranean carried out as part of the *ACCOBAMS Survey Initiative* (ASI) have confirmed the knowledge on preferential presence of fin whales within the proposed PSSA (figure 2), particularly from off the Gulf of Lion to the coastal and offshore waters off Catalonia. Concerning the offshore areas, this may be linked to the presence of cyclonic eddies that are the main reason for the high productivity of the area, as canyons play more a local role.

A zone with one of the highest densities of marine canyons recorded globally and regionally, which probably strongly contributes to make it highly productive (see section 2.3.1). Concerning the Spanish offshore and coastal areas, this has been recently confirmed as a core feeding habitat for fin whales, especially in shallow coastal waters, through satellite tagging. Interestingly, these coastal waters coincide with areas of higher density within the North-West Mediterranean for European sardines (*Sardina pilchardus*) and European anchovies (*European anchovy*). Their occurrence extends to the edge of the continental shelf and their distribution generally overlaps, although sardines are distributed closer to the coast and reach larger sizes (EC *et al.* 2020).

Concerning the sperm whale, the predicted distribution by Mannocci and colleagues (2018) (figure 3) shows higher densities in the area within the PSSA between the Balearic Islands the Spanish continental coast.

A synthesis of distribution of both species has also been carried out for the Pelagos Sanctuary and adjacent waters (Laran *et al.*, 2012). Based on multiple datasets over 15 years, gathering more than 6,000 opportunistic observations, this study highlighted a number of important features on species' spatial and temporal distribution, including:

• The fin whale regularly frequents both the Pelagos Sanctuary and the adjacent waters of the Provençal area and southern Gulf of Lion.

- Within the Sanctuary, the fin whale seems to be present mainly in the western part.
- The distribution of fin whales in spring seems to be mainly related to permanent frontal structures,⁷ while from June to September it is also related to temporary frontal structures. At the end of the summer, the distribution of fin whales is more related to permanent frontal zones located closer to the coast in the *Liguro-Provençal* area or certain upwelling zones such as the one to the East of Bonifacio.
- The sperm whale is particularly frequent on the continental slope but can also be found in certain restricted areas offshore.
- The highest sperm whale encounter rates are in areas with lower fin whale encounter rates, demonstrating very distinct ecological niches likely due to their very different diets (planktonophagous the fin whale, teutophagous the sperm whale).

2.1.3 Dependency

The proposed area and particularly the Pelagos Sanctuary is an essential feeding ground for several cetacean species in the North-Western Mediterranean; here, meteorological and oceanic conditions allow primary productivity in spring and summer to be higher than in the coastal area. For example, Atlantic krill (*Meganyctiphanes norvegica*), a zooplankton species that is exceptionally abundant in the Sanctuary in summer and autumn, is the only identified source of food for fin whales in summer in the Ligurian-Provençal basin.

Cuvier's beaked whales, long-finned pilot whales, sperm whales and Risso's dolphins also take advantage of the Sanctuary's high productivity, particularly on the slope and in the canyons, but with a time lag compared to fin whales, since the peak abundance of their prey (mainly cephalopods) is observed later in the season. Bottlenose dolphins or striped dolphins are permanently present in the waters of the Sanctuary thanks to less specific diets consisting of cephalopods or fish.

The proposed PSSA also includes cetacean corridors. Of particular importance are the Spanish cetacean migration corridor, north of the Balearic Archipelago, which is also an important feeding area for striped dolphins, Risso's dolphins, sperm whales and beaked whales (mainly a three-month period, between April and June). This corridor is also used by fin whales during their migration from the African coasts of the Mediterranean to the Gulf of Lion and the Ligurian Sea, in June and July.

The North-West Mediterranean is characterised by a very high density of submarine canyons. Canyons are important habitats for some cetacean species (e.g. Cuvier's beaked whales) and they also contribute to upwelling phenomena enhancing local primary productivity with the effects extending up the food chain to include birds, marine mammals and fisheries. Commercially important pelagic and demersal fisheries and unique benthic habitats are commonly associated with the heads of shelf-incising submarine canyons that are characterised by steep bedrock exposures. Submarine canyons that extend across the continental shelf and approach the coast are known to intercept organic-matter-rich sediments being transported along the inner shelf zone. This process causes organic-rich material to be

⁷ Hydrological discrepancies corresponding to areas of high horizontal density gradient, which are very often the site of increased biological productivity.

supplied and transported downslope, where it provides nourishment to feed a diverse and abundant macro fauna (Wurtz 2012).

Other unique habitats that highly vulnerable to shipping accidents are present in the region surrounding the PSSA. For example, the Camargue wetlands – a Ramsar site of about 135,00 ha, the largest French wetland and the second largest Mediterranean wetland after the Nile Delta region. This is a key site of international importance for nesting, staging and wintering of several species of waterbirds. It harbours breeding populations (Greater Flamingo, Collared Pratincole, Squacco Heron, Glossy Ibis, Eurasian Bittern), wintering populations (Mallard, Gadwall, Red-crested Pochard, Common Teal, Bewick's Swan, Greater Spotted Eagle) and stopover populations (Pied Avocet, Kentish Plover, Curlew Sandpiper, Black Tern).

2.1.4 Productivity

Although the Mediterranean is generally considered to be an oligotrophic sea, i.e. low in nutrients, its North-Western basin is characterised by relatively high mesotrophic productivity throughout the year, due in part to the physical characteristics mentioned above (see sections 1.1.1 and 2.1.3). The phytoplankton bloom begins in mid-April. This high level of primary productivity conditions the structuring of the upper levels of the food web, in particular the presence of tertiary consumers such as cetaceans, which are particularly abundant in summer.

2.1.5 Spawning and breeding grounds

Mediterranean cetaceans do not show specific breeding grounds. However, a high percentage of juvenile whales are reported in the study area. Biopsy sampling analyses determined that at least one third of the individuals sampled were breeding females and the remaining two thirds were active breeding males (Siliart *et al.*, 2012), supporting the hypothesis of this as an area favourable to the reproduction of the species. Similarly, the analysis of the structure and composition of the groups and their sex ratio have shown that this area is favourable for sperm whales and long-finned pilot whales too (Di-Méglio *et al.*, 2016).

Sardines' persistent spawning habitats are identified along Spanish and French waters, especially surrounding the river mouth areas of Ebro and Rhone, with persistent nursery habitats in the coastal areas and over the continental shelf edge of the Gulf of Lion and in the northern part of the Ebro delta. Concerning anchovies, persistent spawning areas are described along the continental shelf of the same region, with persistent nursery habitats found mainly over the Spanish continental shelf and in a localised area of the central part of the French waters (EC *et al.*, 2020).

2.1.6 Fragility

The semi-enclosed nature of the Mediterranean Sea and its high level of endemism, already mentioned, as well as the near absence of tides, make it particularly vulnerable to any change. The constant increase in human activities at sea, in particular maritime traffic, combined with phenomena linked to climate change (warming, acidification, eutrophication and bioaccumulation of marine waters in particular) are weakening the natural balance of the North-Western Mediterranean zone.

As far as cetaceans are concerned, all the species frequenting the area are particularly vulnerable because of their slow growth, their high longevity (up to 100 years for some individuals) and their low reproduction rate: for these species in particular, human exploitation

of the area at high levels (maritime traffic, but also fishing and leisure activities) is a permanent challenge (Reeves and Notarbartolo, 2006).

The importance and fragility of this region is clearly demonstrated by the large and consistent amount of official international deliberations and recognitions (Pelagos Agreement, Bonifacio Strait PSSA, 11 SPAMIs, two EBSAs) and expert recognitions (three IMMAs) and the national implementations of area-based protection measures (7 National Parks, 230 Natura 2000 sites and other marine protected areas). See all details in sections 3.9.2 and 3.9.3.

2.1.7 Bio-geographic criteria

The particular qualities of the North-Western Mediterranean Sea have already been mentioned and make it singular in biogeographic terms. This singularity is particularly marked in the Ligurian Sea with the presence of the *Ligurian-Provençal* front, a region of rapid transition between the light waters of the Ligurian current and the denser waters of the central zone of this front, in the shape of a horseshoe. It runs about twenty nautical miles along the western coast of Corsica, the Italian coast of Liguria and the French Riviera in a cyclonic movement. The permanent nature of this front, as well as its interannual stability in terms of hydrology, gives it a dominant role in the organisation of phytoplankton communities and ensures the maintenance of a zone that is richer in nutrients than the adjacent regions, particularly in spring (Goffart *et al.*, 1994).

2.1.7.1 A remarkable and rich marine fauna

The North-Western Mediterranean is of particular importance from an ornithological point of view. It is the most important area in the world for the conservation of the Balearic Shearwater (*Puffinus mauretanicus*), a species endemic to the North-Western Mediterranean whose status is considered critically endangered in Europe. The area is also essential for Audouin's Gull (*Larus audouinii*), whose conservation status in Europe is said to be "localised" as more than 90% of the breeding population is clustered in less than ten sites. The colony in the Ebro Delta (Spain) alone accounts for 67% of the world population of this species (Gutierrez *et al.*, 2008). The area is also used extensively by the Mediterranean endemic subspecies of the crested cormorant (*Phalacrocorax aritotelis desmarestii*) and storm-petrel (*Hydrobates pelagicus melitensis*).

This area hosts Mediterranean subpopulations of tropical, subtropical or boreal fish species or coastal invertebrates, but also top predators such as fin whales, sperm whales or bottlenose dolphins. This allows the existence of a naturally balanced and functional food web.

The importance of biodiversity within the study area and the genetic specificity of its populations makes it a special area, whose deterioration could lead to the disappearance of entire sub-populations.

2.2 Social, cultural and economic criteria

2.2.1 Social or economic dependency

The Mediterranean coasts welcome an ever increasing number of travellers and are a stronghold of world tourism. Seaside tourism, favoured by an exceptional marine environment, is one of the main economic resources of this region. The proximity of several beautiful islands (Corsica, Sardinia, the Tuscan archipelago, Balearic Islands, etc.) makes this region particularly attractive and, to a large extent, economically dependent on tourism.

Commercial whale-watching (a tourist service that allows visitors to observe cetaceans in their natural environment) has been a fast-growing activity since the 1990s. A study conducted in the French Mediterranean identified 32 operators (with a capacity of 1,075 places). Between the 1980s and the early 2000s, the annual growth rate in the number of operators was estimated at 3.5% (Mayol *et al.*, 2014). This activity is mainly carried out between June and September.

Professional fishing is an integral part of the Mediterranean landscape, despite a relative economic weight and decreases in the number of vessels, sailors, sales in value and volume. It contributes to the dynamism and survival of the Mediterranean coastal economic fabric as well as to its reputation. Fishing activity is constrained in several ways, particularly with the decline in fish stocks and the management measures implemented to remedy this (MTES, 2019).

2.3 Scientific and educational criteria

2.3.1 Research

It is essential to study Mediterranean cetaceans in order to gain a better understanding of them and then define the most effective management and conservation rules. The Pelagos Sanctuary, which includes France, Italy and Monaco, is a pilot area in which a number of international research programmes are already being conducted to improve knowledge not only of cetacean populations in the North-Western Mediterranean, but also of the main anthropogenic threats to which they are exposed, both at sea and on land. The establishment of the Spanish cetacean migration corridor also makes it possible to promote research on these populations, embracing an even wider diversity of habitats.

2.3.2 Education

Knowledge of cetacean populations must continue to progress, but it must also be disseminated to as many people as possible. The existence of marine protected areas contributes effectively to this and promotes collective awareness of the rich and fragile nature of marine areas and the populations they shelter, through the awareness-raising and communication activities they implement.

The development of whale-watching activities in situ also contributes to this, when properly supervised. The emblematic nature of cetaceans makes it possible to communicate more widely with the general public on ecological issues that concern the entire marine environment and the impacts it is suffering, particularly as a result of direct human action and climate change. The training of marine professionals is also an important lever for raising awareness, which can be deployed in different formats: initial and ongoing training, courses, webinars, etc.

3 VULNERABILITIES OF THE AREA TO DAMAGE BY INTERNATIONAL SHIPPING ACTIVITIES

3.1 Vessel traffic characteristics

The Mediterranean Sea is one of the busiest shipping areas in the world, being the gateway between the European continent and Asia via the Suez Canal. With an estimated 220,000 merchant ships per year,⁸ commercial shipping is particularly intense in the Western Mediterranean, especially in relation to passenger transport. Commercial activity concerns the

⁸ Source: https://www.sanctuaire-pelagos.org/fr/?Itemid=260, consulted 8 January 2021.

transport of passengers or goods by ships often exceeding 100 metres in size, sailing at between 14 and over 20 knots (ferries, cargo ships, tankers, container ships, etc.) and up to more than 35 knots for high-speed craft (HSC), which are mainly used to serve the islands.

From the mid-1990s to the mid-2000s, the Mediterranean Sea has seen a 58% increase in transit capacity, coupled with a 30% increase in vessel size since 1997. Maritime transport in the Mediterranean basin is expected to increase in the coming years, both in number of routes and in intensity, especially in connection with the enlargement of the Suez Canal.⁹ Marine Mammal Observers working within the Fix Line Transect Mediterranean Network (FLT) aboard ferries, at the command deck, raise awareness of the navigating staff of ferries.

An analysis of Automatic Identification System (AIS¹⁰) data by the Centre for studies and expertise on risks, environment, mobility and urban and country planning (Cerema – France) shows a gradual trend towards an increase in the number of vessels equipped with this identification system using the area and in the number of voyages¹¹ made in the area (figure 4).



Figure 4: Number of ships and sailings in the study area (based on AIS data)

3.1.1 Operational factors

In the North-Western Mediterranean, shipping traffic is mainly structured towards or from the ports of Valencia, Tarragona, Barcelona, Marseille, Genoa, La Spezia and Livorno for goods traffic, to which are added the ports of Toulon, Sète, Nice, Savona and all ports in the islands of Corsica, Sardinia, the Tuscan archipelago, Sicily and the Balearic Islands for passenger transport. This geographical situation of proximity to the islands, combined with commercial port infrastructures, promotes maritime ferry traffic. Moreover, the cruise activity has largely developed in the Mediterranean, benefiting from favourable weather conditions and dedicated infrastructures: the region represents the second world market for this sector, after the Caribbean (Di Méglio *et al.*, 2010). Finally, more than 700 marinas are listed in the Mediterranean basin (*Invest in Med* study, published in 2010¹²).

⁹ Source: https://www.medqsr.org/fr/node/235, consulted 8 January 2021.

¹⁰ This ship identification system is mandatory for all ships of 300 gross tonnage or more in international service, cargo ships of 500 gross tonnage or more not engaged in international voyages and all passenger ships, irrespective of their size.

¹¹ The term navigation is understood here in the sense of Article R334-39 of the French environment code: "any movement of a vessel within the perimeter of the marine protected area, including from or to a port, an offshore installation or structure, a pilot station or any other point located within that perimeter".

¹² Study directed by the Chamber of Commerce and Industry of Marseille Provence, in partnership with the CCI of Malaga. https://www.econostrum.info/La-Mediterranee-est-la-premiere-destination-mondiale-de-tourisme-nautique_a3720.html, consulted 8 January 2021.

3.1.2 Vessel types

A recent study conducted by the Quiet Oceans consultancy on behalf of WWF (Gallou and Folegot, 2020) analysed shipping traffic in the North-Western Mediterranean, using AIS data from 2019. In terms of distance travelled in this area, passenger ships and cargo ships travel by far the greatest distance, followed by motorised pleasure craft and fishing vessels.

3.1.3 Traffic characteristics

Freight traffic is higher in winter, in the northern part of the study area, along the coasts of the Gulf of Lion, towards Barcelona and with Corsica and Sardinia. Passenger traffic is highly structured around links between the main ports of France, Spain and Italy on the one hand, and Corsica, the Balearic Islands, Sardinia and the Tuscan archipelago on the other. Traffic intensity increases significantly during the summer months for passenger transport between the Mediterranean islands and the mainland, as well as with additional connections to North Africa and Barcelona and with cruise activity (figure 5).



Figure 5: Percentage of distance travelled in the NW Mediterranean Sea, by ship type and season (AIS data 2019, analysed by Quiet Oceans)



Figure 6: Representation of the maritime traffic during the winter period (2019, AIS source)





Figure 7: Representation of the maritime traffic during the summer period (2018, AIS source)

More than two thirds of the vessels using the study area (68% in winter and 71% in summer) fly the European flag, representing more than 70% of the cumulative distances travelled, whatever the season.

3.1.4 Harmful substances carried

The rules on the transport of harmful substances are derived from the International Convention for the Prevention of Pollution from Ships, known as the *MARPOL* Convention. These rules are contained in different international codes, depending on the nature and mode of transport of these substances. The Mediterranean is an important transport route, but also a major oil loading and unloading centre. It is also a major route for tankers.

3.1.4.1 Oil

In 2006, about 18% of the world's crude oil shipping, representing 4,224 voyages and 421 million tonnes, took place in the Mediterranean (MIU, 2008). Of the 10 main ports of discharge identified in 2006, four are located in the study area: Fos and Port-de-bouc (Marseille region), Genoa and Savona (Italy).

3.1.4.2 Liquefied Natural Gas (LNG) and Liquefied Petroleum Gas (LPG)

In 2006, LNG and LPG loadings amounted to 31 and 19 million tonnes respectively and unloading to 25 and 20 million tonnes for the whole Mediterranean (MIU, 2008).

3.1.4.3 Chemical Products

Chemicals include organic compounds, animal oils and fats, inorganic compounds and other miscellaneous products. The transport of chemicals in liquid and gaseous form represents a

relatively small share of international maritime trade (about 2%)¹³ but remains a very dynamic and important sector in terms of value of goods; however, their accidental release would be harmful to the marine environment.

3.2 Natural factors

3.2.1 Hydrographical

Some areas are known to present risks to navigation, due to the presence of the narrowness of the passage or sectors with numerous islands and islets. This is particularly the case of the Strait of Bonifacio, which is 15 to 20 km wide and 100 metres deep at its deepest point between southern Corsica and northern Sardinia. At its eastern mouth, it also contains the islands of the archipelagos of La Maddalena, Lavezzi and the island of Cavallo. This passage is considered dangerous due to the presence of numerous rocks and strong currents that can increase the risk of grounding and other accidents. These characteristics prompted the establishment of the Bonifacio Strait PSSA.

The small pass of the islands of Hyères is also a potentially dangerous area for large vessels. Located between the Giens peninsula and the island of Porquerolles, its narrowest part extends over less than one mile, with depths of less than 20 metres. The traffic of passenger HSC is very important in the summer season. Cruise ships and ro-ro passenger ships also use it, generally in an east-west direction in heavy westerly weather (GIS3M, 2010).

3.2.2 Meteorological

The Mediterranean climate is characterised by hot, dry summers under the influence of the Azores anticyclone, and mild, relatively rainy winters. Local winds are variable, in both direction and strength, and become stronger in winter with gusts that can exceed 100 km/h. North and north-west winds (Tramontane and Mistral) create the most violent storms.

3.2.3 Oceanographic

In the Mediterranean, the influence of the tides is weak; the tidal range does not exceed 40 cm on average near the coast. Tidal currents are weak and negligible compared to wind-induced currents. Generally, they are not felt near the coast in wide open areas, but they can be rapid in some narrow passages or shallow areas. The average sea waves and swell are generally weak, due to the small size of the Mediterranean basin where swells are infrequent and not very developed. The strongest states of the sea, in terms of height, are generated by north to north-west winds.

3.3 Impacts of shipping traffic on the area

3.3.1 Collisions between ships and large cetaceans

Long underestimated, this impact is now internationally recognised as an important threat to cetaceans, especially as shipping traffic, vessel size and speed continue to increase. Collisions involve a wide variety of vessels, with the risk of collision increasing with vessel speed (as does the severity of injury to the animal), although there is currently insufficient data to adequately quantify this risk (Leaper, 2019).

¹³ Source: https://www.lantenne.com/Les-chimiquiers_a14360.html, consulted 19 February 2021.

The actual total number of collisions between large cetaceans and ships and the consequent impact at population level are difficult to be assessed. Accidents generally take place offshore and are rarely noticed by seafarers (this is particularly true when the vessels are large). Nevertheless, scientific work carried out over the last fifteen years, sometimes in collaboration with shipping companies, has shown that two species are mainly concerned in the Mediterranean: the fin whale (*Balaenoptera physalus*) and the sperm whale (*Physeter macrocephalus*). The latter spends long periods of rest floating at the surface, usually about 10 minutes, between deep dives: this behaviour makes it very vulnerable to ship strikes (UNEP/MAP-RAC/PSA, 2016).

Analysis of records of collisions between ships and the Mediterranean fin whale population over the period 1971-2001 showed that more than 80% of fatal ship strikes occurred in the North-West Mediterranean (Panigada *et al.*, 2006). During the period 2012-2018, the annual number of deadly collisions within the proposed PSSA perimeter was up to 25.38 (Standard Deviation (SD) =5.97) fin whales per year. Based on recognized management rules, this value means that collisions alone prevent the restoration of the fin whale subpopulation within 100 years. Furthermore, there are almost 10% chance that ship strike mortality triggers a subpopulation decline.

Strandings data may complement the information on these accidents. A study carried out on strandings on the French coast since 1972 (Peltier *et al.*, 2019) gave the following results:

- collisions are the main human cause of death for fin whales in the western Mediterranean (22.5% of stranding causes analysed on average; they are the cause of one in five strandings for all species combined);
- evidence of collision could only be found for the period 2005-2017 for the sperm whale in the Mediterranean;
- the majority of fin whales fatally struck by ships had not yet reached the reproductive stage; and
- the small size of the fin whale population in Mediterranean waters makes it particularly vulnerable to anthropogenic pressures.





An assessment carried out by France as part of the implementation of the European Marine Strategy Framework Directive (MSFD), in 2018, reports that in the western Mediterranean collisions are a cause for concern for fin whales, accounting for 80% of recorded events, compared to 10% for sperm whales (Spitz *et al.*, 2018). Other work indicates that collisions and incidental catches alone may be responsible for the decline of the Mediterranean fin whale sub-population, and points to the need for further research to determine how indirect anthropogenic mortalities (pollution, prey depletion) affect the sperm whale population (Sèbe *et al.*, 2020).

Another approach to assessing the risk of collision is theoretical statistical analysis. Thus, the processing of data concerning shipping traffic with those mentioning the presence of cetaceans makes it possible to calculate a theoretical ship-whale encounter rate ("near miss event" or NME). This approach was implemented for the study area (excluding the Spanish corridor), and gives the following results for fin whales (Gallou and Folegot, 2020):

- seasonal differences are mainly due to the variability in the number of ships using the area, which doubles in summer compared to winter; and
- passenger ships and cargo ships have the highest cumulative risk of collision (84% NME in winter, 72% in summer).

The method uses the Tregenza equation,¹⁴ with the following working assumptions:

- the whole animal is vulnerable and represented by a straight line of the same length as the animal itself;
- the orientation of this line with respect to the direction of the ship is random;
- the animal does not try to move towards or away from the ship's path; and
- the vessel does not change its course.

The theoretical number of collision situations is calculated by integrating five parameters: the length of the individual, the time spent at the surface by the animal, the width of the ship's hull, the density of the whale populations and the distance travelled in the area by the ship.

The assumptions of this model do not necessarily reflect the behaviour of animals or vessels in real life, but these data are considered a basis for quantifying this risk, in the absence of more realistic data.

This work could not be carried out for sperm whales due to the lack of sufficient biological data.

In a similar manner the Spanish experience focuses on a study carried out in the MPA Cetacean Migration Corridor in the Mediterranean (CEDEX, 2021), where the presence of fin whales (*Balaenoptera physalus*) and sperm whales (*Physeter macrocephalus*) has been confirmed. For this purpose, a spatial qualitative indicator of "potential risk of collision" has been used considering, on the one hand, data related to maritime traffic, based on AIS data, and on the other hand, the available information related to sightings of the species under study, cited above.

¹⁴ N. Tregenza, N. Aguilar, M. Carillo, I. Delgado, F. Diaz, A. Brito and V. Martin, "Potential impact of fast ferries on whale populations a simple model with examples from the Canary Islands.," in Proceedings of the Fourteenth Annual Conference of the European Cetacean Society. Cork, Ireland, 2-5 April. 2000. http://www.chelonia.co.uk/collision_prediction.htm, 2000.

The analysis carried out for the period of Oct 2018-Sep 2019 showed that up to 4,552 ships (including high-speed crafts, passenger ships, cargos and tankers) have transited this marine protected area, making a total of 5,81 million km travelled with an average route per ship of 132 km.

In order to obtain this spatial distribution of collision risk, a hazard analysis has been carried out, based on the logistic curve that relates the ship's speed and mortality (Vanderlaan and Taggart, 2007) (figure 9) and an approximation to an hazard index based on Vaes and Druon (2013). This index includes not only the traffic involved, but also the characteristics of the ship and its navigation features (i.e. distance travelled), which can affect the fate of the cetacean after the collision. This concept of risk represents a further step, since it combines the hazard of maritime traffic with the exposure associated with the presence of cetaceans.



Figure 9: Vessel collisions with whales: the probability of lethal injury based on vessel speed (Vanderlaan, A.S. and Taggart, C.T. 2007)

The final objective is to identify those zones within the study area where the concentration of individuals and overall risk is higher. Within the cetacean migration corridor, for the total traffic analysed, these areas were identified with the north-western end of the corridor and the area affected by the routes starting from the port of Barcelona, as shown in figure 10. A more detailed analysis (not included in this document) makes it possible to quantify the contribution to this risk indicator of the different categories of ships or the incidence of the seasonal effects of traffic.



Balaenoptera physalus

Physeter macrocephalus

Figure 10: Potential collision risk index associated with the presence of the cetaceans and maritime traffic in the CCM Oct 2018-September 2019 (CEDEX, 2021)

In order to help the decision-making process this analysis allows focusing on where and when taking measures (i.e. depending on the availability of data related to a temporal distribution of cetaceans). Currently a similar risk analysis is being carried out in the proximities of the Catalan coasts, given the high presence of the fin whale, to serve as support to define future measures to mitigate the risk of collisions with large cetaceans to be included in the corridor management plan.

The advantage of this methodology lies in its flexibility to adapt to different spatial and temporal scenarios, a measure that can gradually introduce improvements in the data it feeds. In this regard, it should be added that while the treatment of information related to maritime traffic is quite consistent, due to the robustness of the data, the same does not occur with the information from sightings of the species. Added to the difficulties of field work in the marine environment are the environmental conditions that are very important when it comes to having more or less probability of observing cetaceans and limiting being able to know the status and distribution of populations.

Based on the above it is concluded that the whale population has suffered ship strikes in the region and therefore the cetacean population is at risk. Without associated protective measures to mitigate the risk of collision within the perimeter of the PSSA, a decline in the populations of medium and large cetaceans is to be expected. Implementing a speed reduction strategy will allow a significant decrease in the likelihood of collision and fatal wildlife-related injuries.

The IWC Scientific Committee has identified the need for a better understanding of the relationship between vessel speed, the risk of death or injury to the whale and damage to the vessel. It has considered a number of studies and approaches since 2009 when MEPC.1/Circ.674 was adopted. All the studies considered have confirmed an increased risk with increased speed, supporting the use of speed restrictions as a way of reducing risk. Some studies have attempted to quantify the speed-risk relationship for specific whale species (Conn and Silber, 2013) or the hydrodynamic forces in relation to speed (Silber et al., 2014). Others (e.g. Wiley et al., 2011) have evaluated the relative risk reduction that might be achieved by speed restrictions. In addition to studies based on collisions, studies based on

observations of whales close to vessels have inferred greater collision risks with increases in speed (Gende et al., 2011; Harris et al., 2012).

At its last meeting (2022) IWC Scientific Committee, recommended that 'action needs to be taken to reduce ship strike risks to the Mediterranean populations of fin and sperm whales'. The Committee also recognised that, 'in line with its previous recommendations, since routing options do not seem to be possible in the area, the most effective way to reduce risk is through speed reductions'. Finally, the Committee recommended that 'any measures that are implemented are fully monitored and evaluated in terms of the risk reduction that is expected to be achieved, including through the use of AIS data to assess levels of industry cooperation, and that measures can be adapted based on this'.

The most recent example of voluntary speed reduction to mitigate cetacean ship strikes is given by the case of the endangered Bryde's whales in the Hauraki Gulf, New Zealand (Constantine et al., 2015). Since the introduction of a speed limit of 10 knots in 2013, no collision events were recorded after an average of 2.4 whales per annum recorded in the period 1996-2014 (Ebdon et al., 2019).

Along the Atlantic coast of the United States, in the five years after the enactment of mandatory 10 knots speed restrictions in several Seasonal Management Areas, there were no right whale mortalities attributed to ship strikes either in or within 45 NM of these areas. These results indicate a statistically significant reduction in right whale ship lethal strikes in these areas suggesting that the speed limits have been effective (Laist et al., 2014).

Several models have shown that speeds between 10 and 13 knots drastically decrease the probability of lethal injuries in case of collisions between ships and cetaceans (Vanderlaan & Taggart 2007; Gende et al., 2011; Conn & Siliber 2013). There is strong support to identify 12 knots (11.8 knots or 6.1 m/s) as Bayesian change point of probability for the relationship between ship speed and encounter distance. Average encounter distances above and below the 11.8 knots change point vary from 448 m (95%CrI, 398-485) to 562 m (95%CrI, 468-676) (Gende et al., 2011).

3.3.2 Physical disturbance of cetaceans by ships

The presence of ships may influence cetaceans: attraction, flight or no apparent reaction, depending on species and individuals (Di-Méglio *et al.*, 2010). It is likely to generate behavioural responses causing individuals to move to less favourable habitats, altering the normal course of functions such as foraging, social functioning, reproduction, suckling, resting or migration. This state of stress alters the health status of individuals and demographic parameters may be degraded. If changes in cetacean behaviour have been observed (notably in the case of the bottlenose dolphin in the Mediterranean¹⁵) and disturbance distances have sometimes been inferred, it is difficult in the current state of knowledge to quantify the impacts of this pressure in terms of population ecology.

3.3.3 Underwater noise from commercial shipping

Underwater noise generated by human activities is one of the pressures identified and assessed in the framework of the implementation of the Marine Strategy Framework Directive (descriptor 11 of the Directive) and its complementary process at the Mediterranean level (Ecosystem Approach Process (EcAp) led by the Barcelona Convention). Among the activities concerned is shipping, where the main contributor to the noise generated by a merchant ship is the movement of the engine propeller. The noise level increases with the shape of the

¹⁵ Bearzi *et al.*, 2008.

propeller, the state of wear of the ship, its size, speed and loading. The literature shows a direct relationship between speed and noise (McKenna et al., 2013; Zobell et al., 2021). Leaper (2019) concluded that a 10% speed reduction would reduce the total sound energy from shipping by around 40% on the global scale.

In the Mediterranean basin, anthropogenic noise levels have been steadily increasing over the past 50 years as shipping traffic has increased. According to the first EU maritime transport first environmental impact report (EMTER report) published in 2021, for EU waters the total accumulated underwater radiated noise energy more than doubled between 2014 and 2019. The underwater-radiated noise (URN) from shipping, both in IMO and EU is now recognised as a significant environmental issue with regional and global impact. The European Maritime Safety Agency (EMSA) conducted a study in 2021, focusing on a number of key aspects related to URN: the existing policy and current understanding about sources of continuous URN from different types of ships, its impacts on the marine environment, and mitigation actions. The study was carried out by "WavEC Offshore Renewables" and "Maritime Research Institute Netherlands" (MARIN) on behalf of EMSA. Commercial vessels can have short- and long-term negative consequences for marine life, in particular marine mammals (IMO, 2014, MEPC.1/Circ.833): the diffuse increase by maritime traffic in ambient noise levels, especially in the low frequencies, reduces the communication range of cetaceans, making it difficult for them to find mates or establish social relationships, as well as foraging and orientation. Furthermore, repeated shallow dives to cope with persistent acoustic disturbance are likely to increase the risk of decompression illness in marine mammals (GIS3M, 2010).

To be noted, ships concerned with speed reductions should be chosen carefully, as these measures can also have opposite effects on underwater noise and gas emissions depending on propeller designs (Leaper, 2019), and the technical criteria of the electrical distribution and the type of propulsion of the ship. As the aim of this project is not to increase the impact of maritime traffic on cetaceans, consideration should be given to the equipment of vessels to reduce noise. For example, changing the propellers during maintenance, having a certificate of conformity, equipping with a noise self-estimation and cavitation detection system. The designation of the PSSA will allow to carry out further studies in the matter.

3.4 Chemical pollutions

3.4.1 Hydrocarbons

Accidental oil spills have become rare in the Mediterranean, the last major accident being the MT Heaven in the Gulf of Genoa in 1991, but they can cause considerable damage to the marine environment given the quantities of oil spilled and the length of time it takes for the impacted habitats to recover.

With regard to illegal discharges, the use of satellite imagery can contribute to the estimation of the number of oil spills from ships, without providing proof that the discharge is illegal or that it is from a ship. In 2016, EMSA's CleanSeaNet platform recorded a total of 1073 detections of likely polluting incidents and a total of 1060 detections of potentially polluting incidents in the Mediterranean region and off the Atlantic coasts of Morocco, Portugal, Spain and France (figure 11). Although these data remain to be confirmed, both in terms of the nature of the pollution and its origin, they clearly indicate that oil pollution incidents caused by ships remain a concern in the Mediterranean.¹⁶

¹⁶ Source: https://www.medqsr.org/fr/resultats-et-etat-y-compris-les-tendances-ic19, consulted 18 January 2021.



Figure 11: Number of oil spill incidents recorded by EMSA in the Mediterranean in 2016

Polycyclic aromatic hydrocarbons (PAHs) can bioaccumulate in the tissues of marine mammals. The viscous crude oil spilled during an oil spill can cover the surface of the cetacean's body for a long period of time, which can reduce its filtering capacity: this can be the case for fin whales. The deterioration of zooplankton by an oil spill can also generate an indirect negative impact on some whales, as it is the main food for them.

3.4.2 Antifouling paints

These paints are one of the sources of heavy metals and biocides in Mediterranean waters, particularly off the coast of port areas. Through bioaccumulation, marine mammals can be sensitive to this type of pollution, which can disrupt their immune system and even lead to death.

3.4.3 Other toxic products

In addition to oil, hazardous and noxious substances (HNS) accidentally spilled into the marine environment can threaten marine species such as cetaceans. HNS include bulk liquid cargoes (petrochemicals, solvents and liquefied gases, etc.), bulk solid cargoes (fertilisers, etc.) and packaged chemicals. The quantities of HNS accidentally spilled have decreased considerably between 1994 and 2013 in the Mediterranean. Since 2003, the discharge of HNS has become insignificant compared to the period from 1994 to 2002.

3.5 Marine litter

The Mediterranean Sea is one of the most affected areas by marine litter in the world and by plastic in particular, (it can constitute up to 90% of the seabed litter). The study from Arcangeli *et al.*, 2020 shows that there is a gradient x10 in density if marine litters from offshore, to coastal and to river. Meaning that marine litters are coming from land through rivers (highest densities) and then are spread over the vast oceanic surface. Its origin is mainly land-based, but it is estimated that ships are the source of almost a quarter of this litter (Koutsodendris *et al.*, 2008; loakeimidis *et al.*, 2014).

Accumulation rates vary greatly and are influenced by several factors, such as the proximity of large cities, coastal artificialisation and frequentation, hydrodynamics and maritime activities. The semi-enclosed nature of the Mediterranean basin also explains the high accumulation rates observed. The analysis of this waste shows a great variability *in* its nature and origin, with the highest quantities located mainly near large cities, river mouths and coastal canyons where currents are slower and strong sedimentation occurs.

In the French part of the study area, accumulation rates of 290 objects/km² can be reached on the continental shelf, with plastic waste found at different depths. The majority of plastic waste found in this area originates from fishing activities, with ferry traffic around Corsica also representing a considerable source of waste, particularly bottles and cans thrown overboard (Gerigny *et al.*, 2019). The presence of marine litter in increasing quantities is a serious threat to marine ecosystems, particularly for turtles and marine mammals (risk of entanglement, suffocation by ingestion).

3.6 Biological pollutions

Shipping transport is considered to be the most important vector for the import of exogenous marine species in the world, *via* ballast water or biofouling accumulated on the surface of ships' hulls, respectively managed by the IMO through the Ballast Water Management Convention and the Anti-Fouling System Convention. The semi-enclosed nature of the Mediterranean Sea and the importance of shipping traffic, particularly in its North-Western basin, make it very sensitive to this risk. Invasive species can cause the restructuring of entire habitats to the detriment of native species, with the risk of reducing biological and genetic diversity within populations. However, this risk is only likely to affect very indirectly cetacean populations in the Mediterranean.

3.7 Greenhouse gas and air pollutant emissions

Greenhouse gas emissions have a global impact and are generated by various sectors of activity, including transport. Shipping traffic contributes to this, but only to a limited extent: in 2017, 3.15% of total EU greenhouse gas emissions were attributable to international shipping. However, with a significant increase of 32% over the last 20 years and an estimated projection of 50-250% by 2050, despite reductions in fuel consumption, the European Parliament voted on 16 September 2020 to include shipping in the EU Emissions Trading Scheme (EU ETS) and to set binding standards for shipping companies to reduce their CO_2 emissions by at least 40% by 2030.¹⁷ Negotiations are still ongoing on the EU's Fit for 55 legislative package.

¹⁷ Source: https://www.europarl.europa.eu/news/fr/headlines/society/20191129STO67756/emissions-de-co2des-avions-et-des-navires-faits-et-chiffres-infographie, consulted 18 February 2021.

 CO_2 emissions from maritime transport are estimated at about 10% of the total CO_2 inventories emitted by the 21 Mediterranean countries that are signatories to the Barcelona Convention. These emissions also contribute to increased acidification and eutrophication of the marine environment.

The consequences of the increase in greenhouse gases on the marine environment are known and include the increase in temperature and acidification of marine waters. This may have consequences for cetaceans in terms of the distribution of their prey and their vulnerability to pathogens, which could thus find more favourable conditions for their development.

The Mediterranean States have jointly committed, within the framework of the IMO, in a landmark initiative on the greening of maritime transport. They have submitted to the IMO a joint and coordinated proposal to establish a SO_x Emission Control Area (SECA) in the whole Mediterranean Sea at the seventy-eighth session of the Committee for the Protection of the Marine Environment (MEPC), which approved its creation. The designation of this area entails the obligation for all ships entering the Mediterranean to use fuel with sulphur content not exceeding 0.10% by mass, i.e. fuel five times less polluting than the international standard in non-SECA. Pending the adoption by the next session of MEPC in December 2022, the amendments to the Annex VI to the International Convention for the Prevention of Pollution from Ships (MARPOL) will enter into force in 2024 with a possible entry into effect of the area in 2025. This new SECA will significantly improve air quality in the area and protect health of millions of Mediterranean citizens and their fragile environment.

3.8 Summary of groundings, collisions or spills in the area

The Mediterranean Integrated Geographic Information System for Risk Assessment and Response to Marine Pollution (MEDGIS-MAR), administered by REMPEC,¹⁸ lists 82 events that occurred in the study area between 1977 and 2017. However, as no data is available for the study area between 2002 and 2011, it is likely that some information is missing or not published.

Of the events listed, 8 resulted in the release of more than 700 tonnes of hazardous substances into the environment (6 involving oil pollution), 8 resulted in the release of between 7 and 700 tonnes, 42 resulted in the release of less than 7 tonnes of hazardous substances.

The most dramatic event for the marine environment in the area was the accident off Genoa on 11 April 1991, when an explosion followed by a fire on the Cypriot tanker *MT Haven* resulted in the loss of 144,000 tonnes of heavy oil at sea. In terms of media coverage, the sinking of the cruise ship Costa Concordia in 2012 is widely remembered, mainly for the loss of life, although its impact on the marine environment was limited.

On Sunday October 7, 2018 in the morning, the Cap Corse semaphore reports to CROSS La Garde the collision between the Tunisian ro-ro ship ULYSSE and the container ship CSL VIRGINIA. The collision has resulted in pollution of around 530 m³ of hydrocarbons from the holds of the container ship.

During the night of Saturday 12 to Sunday 13 October 2019, *RHODANUS*, a small cargo vessel flying the flag of Antigua and Barbuda, was heading straight for the *Cappiciolu* peninsula on the south coast of *Corsica*. Called by the MRCC on several occasions by VHF, the vessel did not answer. She stranded in the *Bonifacio* nature reserve, at the place called "*Cala Longa*". Alone on the bridge, the mate in charge of the watch fell asleep. The vessel was refloated on

¹⁸ Source: https://medgismar.rempec.org/, consulted 22 January 2021.

Friday 19 October and towed with her seven crew members to *Fos-sur-Mer*. There were no casualties nor pollution.

On June 11, 2021, air traffic control at Solenzara air base relayed the detection of an oil slick eight nautical miles long by an Air Force plane about ten kilometres from the east coast of Corsica. A Falcon from the French Navy carried out the relocation of two slicks then by the Customs launch "DF 25", whose samples confirmed that they were heavy hydrocarbons. In the evening, the means of combating pollution in Corsica and Toulon were mobilized by the maritime prefecture of the Mediterranean, while the POLMAR-land plan was activated. It could correspond to the discharge by a ship of oily waters.

In relation to collisions between ships and cetaceans, a very recent collision event can be cited. The vessel Hypatia de Alexandria, from the Balearia fleet, brushed against two fin whales that were 15 miles off the coast of the Llobregat Delta on 26 May 2022. One of the individuals made an emergency dive about 50 metres from the vessel and the other is believed to have grazed the keel of the vessel.

3.9 Measures taken to protect the area and their positive effects

The wealth and plurality of environmental issues in the study area, as already described, have prompted the Coastal States or local authorities concerned to take specific protection measures by creating various marine protected areas. In total, almost 145,000 km² of the study area has a special status.

3.9.1 Measures already adopted by the Organization

Adoption on 2 November 1973 of a special area (SA) covering the entire Mediterranean under Annexes I (Regulation for the Prevention of Pollution by oil) and V (Regulation for the Prevention of Pollution by garbage from ships) of the MARPOL Convention. This measure came into force on 2 October 1983.

Adoption on 15 July 2011 of a PSSA for the strait of Bonifacio by Resolution MEPC 204(62) which refers to protective measures previously adopted by Res.A.766(18) on 4 November 1993. In particular, IMO has adopted a mandatory ship reporting for ships of \geq 300 GT. In addition, vessels continue to use the existing recommended two-way route and any ships containing hazardous materials must require a pilot service.

Adoption of the creation of a sulphur oxide and particulate emission control area (SECA area) covering the entire Mediterranean Sea at the seventy-eighth Marine Environment Protection Committee of the International Maritime Organization (IMO) on June 10, 2022.

3.9.2 Measures taken for the protection of cetaceans

3.9.2.1 International Pelagos Sanctuary

The Pelagos Trilateral Agreement (November 1999) for the protection of marine mammals within the Pelagos Sanctuary entered into force on 21 February 2002, after ratification by the three concerned countries (France, Italy, Monaco). The Sanctuary covers a total area of 87,500 km². The objective of the agreement is to maintain a favourable conservation status for marine mammal populations within the Sanctuary, and to this end, to monitor cetacean populations, to reinforce the application of existing legislation on certain fishing activities, to reduce pollution, to regulate tourist observation of cetaceans and to improve the dissemination of information to the public. Since November 2002, the Pelagos Sanctuary has also been

recognized by the Barcelona Convention Contracting Parties as a Specially Protected Areas of Mediterranean Importance (SPAMI).

3.9.2.2 The MPA cetacean migration corridor in the Mediterranean (Spain)

The Spanish government has designated a 46,385 km² corridor between Valencia, Catalonia and the Balearic Islands as a Marine Protected Area, to protect cetaceans present and migrating in the area. The Barcelona Convention, allowing the area to be designated as a SPAMI, validated this in December 2019.

3.9.3 Measures taken for the wider protection of environments

3.9.3.1 The Calanques National Park (France)

Created by decree on 18 April 2012, the Calanques National Park is both terrestrial and maritime. The marine core of the park covers 435 km² and benefits from the strongest protection measures. The adjacent maritime area (977 km²) also expresses sustainable development guidelines and ends at the limit of French territorial waters. It is recognised as a SPAMI.

3.9.3.2 Port-Cros National Park (France)

Created on 14 December 1963, this National Park has a marine area of 29 km² (heart of the park), to which are added 1230 km² of adjacent marine area. It is the oldest marine park in Europe. It is also recognised as a SPAMI.

3.9.3.3 The National Park of the Tuscan Archipelago (Italy)

Arcipelago Toscano National Park, established in 1989, is the largest marine park in Europe: it safeguards 567.66 km² of sea and 178.87 km² of land. It includes the seven main islands of the Archipelago, as well as some minor islands and rocks. Each island and islet preserve traces of its history, each of them is unique. This Archipelago has always represented an important shelter and connection area between the Sardinian-Corsican system and the peninsula. This history has led to the presence in the Archipelago of extremely specialized animal and vegetal species, which formed during the periods of isolation, and species, which only live in Corsica and Sardinia. There are colonies of sea birds, like shearwaters and seagulls, among which the rare Audouin's Gull, a Mediterranean endemic species which in Italy lives in a few places. The presence of the Mediterranean monk seal has also been sporadically recorded, and it also possible to sight cetaceans. UNESCO as a Tuscan Islands Biosphere Reserve has also recognized the park since 2003.

3.9.3.4 The Maddalena Archipelago National Park (Italy)

This park, created in 1994, covers approximately 51 km² on land and 150 km² at sea. Fin whales, sperm whales and bottlenose dolphins but also sea turtles (*Caretta caretta*), are frequently seen within this Archipelago.

3.9.3.5 National Park of Asinara and Marine Protected Area of the Asinara Island (Italy)

Designated in 1997, it extends for 52 km² on land and 108km² at sea. The marine environment is an element of considerable scientific and naturalistic interest for Asinara. Throughout the western side there are some unique plant landscapes, dominated by large brown algae of Atlantic origin, such as *Cystoseira*, *Sargassum*, *Dictyopteris* and *Phyllariopsis*.

3.9.3.6 National Park of Cinque Terre and Marine Protected Area of Cinque Terre (Italy)

Designated in 1999, the Cinque Terre National Park is a Unesco World Heritage site with priceless environmental and cultural features. It is a naturalistic oasis which preserved the features of an uncontaminated nature. The landscape, formed by rocks of different origin and age, is marked by a particular steepness and by the lack of plain stretches.

The coast, high and jagged, is linear, with a few inlets and promontories, dug by the sea in suggestive caves. There are a few sandy and pebbly beaches which are the result of the detritus of the watercourses, of landslides, or of accumulation of materials left by man.

Cinque Terre National Park is also the habitat for several faunistic species which find here the ideal conditions to live and reproduce. The Marine Protected Area extends for about 39 km².

3.9.3.7 Natural reserve of Bouches de Bonifacio (France)

The largest nature reserve in mainland France, created in September 1999, the *Bouches of Bonifacio* covers 800 km², mainly maritime, between Corsica and Sardinia. More than 98 km² of the sea are under so-called enhanced protection. This reserve is part of the PSSA of the Strait of Bonifacio, recognised as such in July 2011 by IMO, which concerns maritime areas under French and Italian jurisdiction (MEPC, 2011); it is also recognised as a SPAMI.

3.9.3.8 Cape Corsica and Agriate Marine Natural Park (France)

Created in 2016, the Cape Corsica and Agriate Marine Natural Park covers an area of 6,830 km², of which 4,282 km² is located in the French EEZ.

3.9.3.9 Gulf of Lion Natural Marine Park (France)

Created in 2011, the Gulf of Lion Natural Marine Park has an area of 4,010 km². Its offshore limit is set at 35 miles, or approximately 60 km, where the depths reach 1,200 m. The Park aims to meet three fundamental objectives:

- Knowledge of the marine environment,
- The protection of this environment and the species it shelters, and
- To contribute to the sustainable development of maritime activities.

3.9.3.10 Portofino Marine Protected Area (Italy)

With a surface area of about 4 km², it is delimited at sea by 11 luminous buoys in the near coastal area. Also recognised by the SPAMI, it is home to rich and diverse underwater landscapes, and in particular to red coral (*Corallium rubrum*), a species essentially endemic to the Mediterranean.

3.9.3.11 Capo Testa - Punta Falcone Marine Protected Area (Italy)

The Capo Testa – Punta Falcone Marine Protected Area, established in 2018, leans over the Strait of Bonifacio over 51.6 km² and is characterized by a landscape of white sands and imposing granite rocks which represent true natural monuments.

3.9.3.12 Bergeggi Island Marine Protected Area (Italy)

Bergeggi Regional Nature Reserve and the Bergeggi Island Marine Protected Area cover about 3 km². The coastal stretch between Bergeggi and Spotorno alternates small beaches

and short promontories to overhanging cliffs, in which the sea dug some small caves. In front of it, not too far from the mainland, there is the small Bergeggi Island. The island and the rocky coast facing it are part of Bergeggi Regional Nature Reserve since 1985; whereas the MPA was established in 2007.

3.9.3.13 Secche della Meloria (Meloria's shallows) Marine Protected Area (Italy)

At 3 miles far from the coast near Livorno, you could see on the horizon the Lighthouse and Meloria Tower, bulwarks of one of the most peculiar Marine Protected Areas in the Mediterranean Sea.

The Secche della Meloria Marine Protected Area covers more than 9 km², delimiting an area of exceptional historical, archaeological and natural interest. Its high biodiversity, thanks to its variety of habitats, makes it an important ecological conservation site, and also an exceptional destination for snorkelers and divers. The Tower and the Lighthouse of Secchie della Meloria could really be considered as Marine (or maritime) Monuments, since they represented a natural fortress against the enemies, and many shipwrecks occurred there. This Marine Protected Area is thus a site of significant historical importance and a "paradise" of underwater archaeology.

3.9.3.14 Blue Coast Marine Park (France)

Recognized as a SPAMI, it includes the marine protected areas of Carry le Rouet (about 1 km²) and Cap Couronne (about 2km²) in the near coast.

3.9.3.15 Marine natural reserve of Cerbère Banyuls (France)

It covers 6.5 km² of sea, up to about one and a half miles offshore. It is recognized as a SPAMI.

3.9.3.16 Embiez Archipelagos (France)

It covers a marine area of about 3 km² in the very close coastal zone. It is recognized as a SPAMI.

3.9.3.17 Cap de Creus Natural Park (Spain)

Created by law on 12 March 1998, Cap de Creus Natural Park is both terrestrial and maritime. This park, which lies between land and sea, is an area of great beauty and a remarkable geological ensemble with structures and outcrops that make it unique in the world. The impact of the tramontane wind has generated whimsically eroded shapes and transformed its landscape. The marine part of the park covers 2054, 19ha. One of the most remarkable attributes of the seabed of Cap de Creus is its great diversity of communities and species. From the coast to more than 80 m deep, almost everything is possible: rocky bottom and muddy bottom; coves with calm waters and places exposed to strong currents, waves or the tramontana; flat bottoms and rocky walls; well-lit places and shady places. It is recognized as a SPAMI.

3.9.3.18 Parque Naural de Montgri les iles Medes e Baix ter (Spain)

Created by law on 28 May 2010, Montgrí, Medes islands and Baix Ter Natural Park is both terrestrial and maritime. The park has a coastline with cliffs, coves and beaches and seabeds with an undeniable ecological value. It also features a mountain massif that rises from alluvial plans and wetlands formed by the River TER when it runs into the bay of Pals. The marine part of the park covers 2038, 98ha and the Medes Islands with a higher level of protection covers 100,56ha, contemplating their seabed is like going back in time and enjoying the flora, fauna and landscape of a stable and complete ecosystem. Medes Islands are recognized as a SPAMI.

3.9.3.19 Columbretes Islands (Spain)

Recognised as SPAMI

3.9.3.20 Natura 2000 sites

The proposed NW Mediterranean PSSA encompasses over 230 Natura 2000 coastal and marine sites.

3.9.4 Future measures proposed for the wider protection of environments

At the twenty-second meeting of the Conference of Parties to the Barcelona Convention (COP 22), the Contracting Parties agreed to submit to the Organization a proposal for the designation of the Mediterranean Sea, as a whole, as an Emission Control Area (ECA). The goal is to prevent, reduce and control emissions of sulphur oxides (SO_x) and particulate matter (PM) from ships pursuant to regulation 14 and Appendix III to Annex VI to the International Convention for the Prevention of Pollution from Ships (MARPOL). Hereinafter referred to as the proposed "Med SOX ECA".

The submission set out in document MEPC 78/11 was presented and approved at the seventy-eighth session of the Committee in view of its adoption at the following session (MEPC 79), with an entry into effect in 2025.

Conclusion of the first part:

The elements presented in this first part allow a number of observations:

- Firstly, the proposed NW Med PSSA is particularly frequented by ships, whether for the transport of goods, passengers, pleasure craft or fishing. The area is a crossroads for trade and a major tourist destination, with a high level of frequentation in all seasons. In addition, the maritime traffic trends observed are upwards and economies of scale by increasingly large ships transiting within the PSSA.

- Secondly, this area is particularly important from an ecological point of view, at the level of the Mediterranean Sea but more widely at the global level. The area is particularly frequented with marine mammals, including two species that are particularly vulnerable to the risk of ships strikes because of their size: the fin whale (the second largest mammal in the world and vulnerable species according to the IUCN) and the sperm whale (a species in danger of extinction). It is recognized worldwide that the target speed of 10 knots would significantly limits the risk of fatal ship strikes in case of collision between ships and cetaceans. Moreover, it is highlighted the decrease in the probability of encounter between ships and large and medium cetaceans and therefore the mitigation of the risk of collision below 12 knots.

In view of this threat to marine mammal populations and the international commitments made to protect these species, it is essential to propose effective measures to mitigate the risk of ship strikes with cetaceans and to address in the future other ship-generated pollution to protect cetaceans in the area.

ANNEX 2

INFORMATION SUPPORTING THE PROPOSITION OF A PARTICULARLY SENSITIVE SEA AREA (PSSA) IN THE NORTH-WESTERN MEDITERRANEAN SEA

Part II – APPROPRIATE ASSOCIATED PROTECTIVE MEASURES AND IMO'S COMPETENCE TO APPROVE OR ADOPT SUCH MEASURES

Introduction

France, Italy, Monaco and Spain made a joint statement in favour of the creation of a PSSA at the annual meeting of the ACCOBAMS¹ in November 2019.

1 ASSOCIATED PROTECTIVE MEASURES

Different associated protective measures were considered to protect cetaceans from any adverse effect generated by ships. These include prevention of pollution from ships but also action to minimize ship strikes with cetaceans. The latter is particularly difficult to manage in a large area and needs some thorough considerations.

Circular MEPC.1/Circ.674 of 31 July 2009, guidance document for minimizing the risk of ship strikes with cetaceans, sets out a number of measures to reduce the risk of collision between large cetaceans and ships. A document presented by the IWC in February 2016 (MEPC 69/10/3) summarises the results obtained in terms of reducing the risk of collision between ships and cetaceans since the adoption of the IMO circular. The measures or recommendations already implemented worldwide are of various types:

- traffic management measures (permanent or seasonal);
- recommendations for specific routes;
- prohibited areas;
- reduction in the speed of ships and in the propeller cavitation (permanent or seasonal); and
- mandatory ship notification systems to trigger anti-collision manoeuvres.

As indicated in MEPC.1/Circ.674, "collisions between cetaceans and ships occur worldwide where there is an overlap between cetaceans and vessel activities. Such collisions involve a wide variety of vessel types, including recreational, commercial and governmental vessels. Damage to vessels, ranging from minor to extreme, has resulted from ship strikes of cetaceans. Such damage includes cracked hulls; damaged propellers, propeller shafts, and rudders; damaged port and starboard aft strut actuators; broken steering arms; and ruptured seawater piping. In some cases, in particular involving large vessels, captains may be unaware that a collision with a cetacean has occurred."

Collision of HSC with a cetacean will be fatal for the marine mammal but can also result in damage to the HSC and serious injury to passengers.² In that respect, it is proposed the following appropriate measures to prevent ship strikes with cetaceans as basic safety measures to all ships.

¹ ACCOBAMS: Agreement on the Conservation of Cetaceans in the Black Sea, Mediterranean Sea and contiguous Atlantic area.

² https://people.com/pets/japan-high-speed-ferry-hits-whale/

In that respect, France, Italy, Monaco and Spain propose associated protective measures that should benefit to the preservation of cetaceans but the safety of navigation as well.

1.1 Existing associated protective measures

- 1.1.1 International existing measures
 - Adoption on 2 November 1973 of a special area (SA) covering the entire Mediterranean under Annexes I (Regulation for the Prevention of Pollution by oil) and V (Regulation for the Prevention of Pollution by garbage from ships) of the MARPOL Convention. This measure came into force on 2 October 1983.

SA under MARPOL Annex I prevents the viscous oil during an oil spill to cover the surface of the cetacean's body for a long period which can reduce its filtering capacity.

SA under MARPOL Annex V prevents the presence of marine litter in increasing quantities, which is a serious threat to marine ecosystems, particularly for turtles and marine mammals (risk of entanglement, suffocation by ingestion).

 SOLAS V/4 Navigational warnings and Res.MSC.469(101) amendments to world-wide navigational warning service (WWNWS).

WWNWS includes coastal warnings broadcast information, which is necessary for safe navigation within areas seaward of the fairway buoy or pilot station, should not be restricted to main shipping lanes. Where the area is served by International NAVTEX, it should provide navigational warnings for the entire NAVTEX service area. Coastal warnings should include different subjects, in particular drifting hazards (including derelict ships, ice, mines, containers, other large items over six metres in length, etc.).

Today the NAVTEX is one of the principal components of MSI within GMDSS in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974. Moreover, it should be noted that this solution is inexpensive and does not require material adaptation on board ships and for coastal States.

Large and medium cetaceans can be considered as a dangerous drifting object, which, in the event of a ship strike, can be a cause of death for the cetacean but can also cause significant damage to the structure of the ship or to the hull appendix. Information in real or near real time is relevant for maritime safety as well as the preservation of cetaceans. The proposed NW Med PSSA is covered by three international NAVTEX stations in La Garde (France), La Maddalena (Italy) and Cabo La Nao (Spain).

For instance, navigational warning broadcasted on NAVTEX could be used for "Dynamic Management Areas" (DMA) whereby temporary zones are created aggregations of cetaceans. Ships would be asked to avoid DMA or travel through them with caution at reduced speed. If that was the case, it would only be necessary to establish an information transmission chain to the different NAVTEX coordinators from the source of information generally coming from ships at sea at it is the case for any navigational warnings.

 SOLAS V/27 Nautical Chart and nautical publication. Nautical charts and Nautical publications, such as sailing directions, notices to mariners and other nautical publication are necessary to inform the danger of navigation.

These measures may assist to reduce and mitigate ship strikes with cetaceans and ship generated pollution, which may severely affect cetaceans, but additional measures are needed.

1.1.2 Existing measures in France, Italy, Monaco and Spain

France:

- The only specific measure implemented to reduce the risk of collision of a certain type of vessels with cetaceans concerns the obligation to equip a position-sharing device to avoid strike with cetaceans in the Pelagos marine sanctuary. This provision was introduced for certain types of French vessels by Law 2016-1087 of 8 August 2016 for the reconquest of biodiversity, nature and landscapes.³
- Law 2016-1087 also introduces liability and compensation for "pure environmental damage", or "ecological damage" into the French Civil Code.

Spain:

 The Mediterranean Cetacean Migration Corridor (CMC) Marine Protected Area (MPA) established by Royal Decree 699/2018 on 29 June 2018 by the Spanish government:

The protected area covers 46.385,7 km² and is characterised by its concentration of significant numbers of many cetacean species (including fin whale and sperm whale), having special relevance for the fin whale that uses it as a migratory route towards its breeding and feeding areas in the Northern Mediterranean.

- Underground geological research by means of active systems (probes, compressed air or controlled explosions, or underground drilling) are forbidden, except for permits for research or exploitation in force.
- Any type of hydrocarbon extractive activity is prohibited, except for research or exploitation permits in force.

The marine reserve of Islas Columbretes created under Ministerial Order of 19 April 1990.

The marine reserve has a total area of 5.543 hectare. Its Management Plan (Ministerial Order ARM/384/2008) reflects its updated zoning and allowed uses. The marine reserve encompasses two no-take marine reserves, prohibits discharges into the sea, the introduction of exotic species and sets a maximum speed of three knots for recreational vessels.

 In addition, an exclusion zone for maritime navigation was established around the Columbretes Islands marine reserve in 2004, by the Spanish Directorate-General for Merchant Shipping. This exclusion area covers a circular area of eight miles, centred around the Racon of the Isla

³ https://www.legifrance.gouv.fr/codes/article_lc/LEGIARTI000033029052/

Grande, and is mandatory for ships over 1,000 GT transporting dangerous or polluting goods. It is included in Nautical Charts.

- The proposed NW MED PSSA covers part of the Traffic Separation Scheme (TSS) established 6 nm off Cabo de la Nao, in the southern part of the area. This TSS is part of the three TSS (Cabo de Gata and Cabo de Palos) established around the Spanish Mediterranean coastline to regulate traffic flows from/ to the Gibraltar strait towards/from NW Mediterranean ports.
- Notice to Mariners to protect cetaceans from the risk of ship collisions in the Strait of Gibraltar and the new location for the "Cabo de Gata" Traffic Separation Scheme. In the Gibraltar Strait, a Notice to Mariners has been published in January 2007 by the "Instituto Hidrográfico de la Marina" (Spanish Navy Hydrographic Institute under the Ministry of Defence). This Notice establishes a security area characterized by high densities of sperm whales, where crossing ships are recommended to limit their speed to a maximum of 13 knots, and to navigate with particular caution. The same notice will be broadcasted regularly by VHF radio from April to August and included in the Nautical Charts.

Italy:

Environmental protection in the Constitution of the Italian Republic (Articles 9 and 41)

On 8 February 2022, the Italian parliament approved the amendment to articles 9 and 41 of the Constitution regarding the protection of animals. The edited articles now read as follows: "Article 9: The Republic promotes the development of culture and scientific and technical research. It protects the landscape and the historical and artistic heritage of the nation. It protects the environment, biodiversity and ecosystems, also in the interest of future generations. State law regulates the methods and forms of animal protection". "Article 41: Private economic initiative is free. It cannot take place in conflict with social utility or in a way that could damage safety, freedom, human dignity, health, the environment. The law determines the appropriate programs and controls so that public and private economic activity can be directed and coordinated for social and environmental purposes".

Italian ratification law of the Agreement for the Pelagos Sanctuary – Law no. 391 of 11 October 2001 and prohibition of high-speed motorboats competitions/racings within the Pelagos Sanctuary.

In addition to the ratification of the trilateral Agreement for the protection of marine mammals (Pelagos Agreement), while transposing the text of the Agreement into its own legal system, Italy has provided for the prohibition of carrying out competitions of high-speed motorboats in territorial waters, therein including inland waters (article 5 of the Italian ratification law of the Agreement for the Pelagos Sanctuary – Law no. 391 of 11 October 2001). This prohibition is duly applied by competent authorities for different types of fast motorboats including jet skis, under the control of the Port Authority – Coast Guard.

 Prohibition of hydrocarbon exploration and exploitation (Legislative Decree 3 April 2006, n. 152 Environmental regulations, Article 6 paragraph 17 amended by Law Decree 22 June 2012 n. 83 Urgent measures for the growth of the country, article 35). Article 35 of Law Decree 83/2012 establishes the following: "For the purposes of protecting the environment and the ecosystem, within the perimeter of marine and coastal areas protected [...], by virtue of laws national, regional or in implementation of international acts and conventions, the activities of research, prospecting and cultivation of liquid and gaseous hydrocarbons are prohibited" in various Italian sites of national importance. "The prohibition is also established in the sea areas located within twelve miles of the coastlines along the entire national coastal perimeter and from the external perimeter of the aforementioned marine and coastal protected areas, [...]".

Rules for the enforcement and organization of the Portofino Marine Protected Area (G.U. N°181 of 04.08.2008)⁴

The Marine Protected Area of Portofino has a number of restrictions for boaters since 2008 (Article 16 – Discipline of pleasure boating; Article 17 – Rules of mooring activity; Article 18 – Discipline of anchoring activity), including a general speed limit of five knots and anti-pollution requirements (entry allowed only units equipped with boxes for the collection of sewage; engine compliant with Directive 2003/44/EC relating to gaseous and acoustic emissions (electric outboard motors, inboard engines compliant with the directive, four-stroke outboard engines with unleaded petrol, two-stroke outboard engines with direct injection); use of zero release antifouling paints).

Regulation governing the activities permitted in the Cinque Terre Marine Protected Area (Decree of the Ministry of the Environment of 12 December 1997).

Various rules on pleasure crafts, including speed limits depending on the areas (five knots "zone B" and in "zone C" within 300m from the coast; 10 knots in "zone C" over 300m from the coast).

1.2 Proposed associated protective measures (APM)

In order to better assist to prevent ship strikes with cetaceans, the following is also proposed:

- .1 recommendation to seafarers/ship operators to navigate with particular caution within the NW Med PSSA, when and where large and medium cetaceans are present, and to limit their speed to between 10 and 13 knots as voluntary speed reduction, while seeking to avoid possible negative impacts of reduced speeds on manoeuvrability and underwater noise in absence of other design adaptations on the ship;
- .2 recommendation to ships to avoid large and medium cetaceans and keep an appropriate safety distance or speed reduction measure from any large and medium cetaceans observed or detected in close quarter situation. A safety distance or speed reduction measure should be adapted to the circumstances and existing conditions;
- .3 recommendation to ships to broadcast by VHF or other suitable means on the area the position of medium and large cetaceans observed or detected and to transmit the information and the position to a designed coastal Authority;

⁴ https://www.portofinoamp.it/chi/statuto-e-regolamenti/regolamentoAMPinglese.pdf
- .4 ships should report any collision and near miss collision with cetaceans to a designated coastal Authority(ies). Designed coastal Authority(ies) should forward this information to the International Whaling Commission (IWC), which holds a global cetacean ship strikes database. This can be done by using the IWC web-base interface: https://crm.iwc.int/data/databases or by emailing the IWC Secretariat at: shipstrikes@iwcoffice.org; and
- .5 recommendation to designated coastal Authority(ies) to broadcast information, when needed, to ships about the presence of large and medium cetaceans as navigational warning.

Large and medium cetaceans can be considered as a dangerous drifting object, which, in the event of a ship strike, can be a cause of death for the cetacean but can also cause significant damage to the structure of the ship or to the hull appendix. Information in real or near real time is relevant for maritime safety as well as the preservation of cetaceans. In order to support the broadcasting of navigational warning it is recalled that the proposed NW Med PSSA is covered by three international NAVTEX stations in La Garde (France), La Maddalena (Italy) and Cabo La Nao (Spain). The coverage areas of the NAVTEX stations indicated in the GMDSS master plan module of the Organization's Global Integrated Shipping Information System (GISIS) are represented on figure 1 below, with the following values:

- .1 Cabo La Nao NAVTEX station : 220 NM
- .2 La Garde NAVTEX station : 250 NM
- .3 La Maddalena NAVTEX station : 320 NM



Figure 1: NAVTEX coverage in NW Mediterranean

- .6 Recommendation to shipmasters to determine the watchkeeping arrangements taking into account the presence of large and medium cetaceans, including the use of infrared binoculars to help the detection of large and medium cetaceans by night or fixed infrared camera detection system. These systems would help to detect not only large and medium cetaceans, but also any man-overboard or castaways by night; and
- .7 The designated coastal authorities should prepare material, and disseminate information in order to raising awareness on the crews (by means such as the publication of materials) and increase their knowledge on the protection of the marine environment on the PSSA with a particular emphasis on cetaceans.

To ensure their effectiveness, the measures adopted, in particular 1, 2, 3, 4 and 6 would have to be clearly indicated on nautical charts, nautical publications and nautical information.

1.3 Prospective protective measures

Navigational warnings:

Information to navigators by navigational warnings could be enhance in the future in digital format by the NAVDAT system.

At its 102nd session, the Maritime Safety Committee (MSC) agreed to include in its post-biennial agenda an output on "Development of performance standards for a digital navigational data system (NAVDAT)".

The proposed output will introduce a new high-speed digital system capable of delivering a higher volume of information at a higher rate than the present NAVTEX system, including graphical data. In areas where it would become available, ships can choose to receive this information optionally via NAVDAT rather than NAVTEX.

"Dynamic Management Areas" (DMA) would be transmitted in an easier way to ships and could be displayed on ECDIS or ENC. Digital information will hence facilitate the change in the voyage planning by navigators in order to avoid area of aggregations of cetaceans or travel through them with caution at reduced speed.

Regional governance:

France, Spain, Italy and Monaco should sign a Memorandum of Understanding to harmonize and facilitate the collection of data within the NW Med PSSA with the aim of better informing ships on the presence of cetaceans and implementing incentive measures to ships following the PSSA's recommendations to protect cetaceans.

This Memorandum of Understanding should also make it possible to create synergies between the riparian States in order to support the development of new technologies for detection at sea and thus reducing ship strikes of cetaceans, as well as the implementation of incentive measures. The riparian States should consider fund research activities in connection with industry and the scientific and research community, actions to raise the awareness of shipping stakeholders on the protection of cetaceans and the implementation of incentive measures to ensure compliance with the recommendations. Emerging devices in the future could, for example, include passive acoustic monitoring, predictive modelling or tagging of cetaceans. There are currently known methods providing such information on a scale that could be of interest to minimize the risk of collision which deserves to be deployed and integrated into the chain of navigational warning broadcast to inform navigators in due time.

A share governance in the detection of cetaceans in the PSSA will facilitate the collection of information on the presence of cetaceans within the PSSA by:

- direct observation from navigators on ships;
- detection by any shipborne system; and
- detection by a network of acoustics buoys monitored by riparian States.

The riparian states should encourage the review of the adopted measures after a certain time to assess their effectiveness, the opportunity to implement new operational measures at national and international level in order to limit the pressures generated by the maritime traffic on medium and large cetaceans.

1.4 Category of ships to which the proposed APM would apply

The proposed associated protective measures would apply to any commercial ships and to pleasure yachts of gross tonnage >300 UMS. Exempted vessels are those not subject to measures defined in these annexes and include war ships and state law enforcement vessels engaged in enforcement or in search and rescue activities.

2 POLITICAL IMPLICATIONS

Proposed associated protective measures are win-win measures for cetaceans and ships and in line with the Organization's instruments.

3 ECONOMIC IMPLICATIONS AND EXPECTED IMPACT ON SHIPPING

The costs of development and maintenance in operational condition of a detection network based on emerging technologies should be address in the future between coastal States involved in the NW Med PSSA in order to reduce the economic impact via the Memorandum of Understanding.

The implementation of local and temporary avoidance and slow down measures is likely to have both positive and negative economic impacts. (*Analysis of the maritime traffic and the risk of collision in North-West Mediterranean Sea. WWF 2021*).

The proposed associated protective measures only recommended and by their nature do not have any significant economic impact for shipping. Voluntary speed reduction measures (VSR) can have economic implications unless it is associated with an incentive system to reward virtuous ships.

3.1 Positive impact

Among the positive effects are:

- The relationship between the ship speed and fuel consumption and the related emissions – is almost cubic (i.e. consumption is proportional to speed cubed; Leaper, 2019). Reducing speed is, therefore, one of the most effective solutions to reduce emissions (Aronietis et al., 2014; Psaraftis et al., 2009; Seediek and Transport, 2015) and fuel consumption.
- In addition, by reducing speeds, the trip becomes safer, which can have financial benefits in the form of lower insurance costs. Measures can also differentiate a marketing proposition and increase customer satisfaction. Environmental excellence and respect for good practices by ships in favour of biodiversity that can be certified by eco-labels.
- Permanent measures facilitate understanding by operators and avoid a regulatory watch by the shipowner that would be linked to a dynamic management of the area and reduce the administrative burden and the impact on the management of the vessel within the PSSA.

3.2 Impacts to be mitigated

Among the negative effects are:

- The lengthening of journey times due to avoidance manoeuvres linked to a cumulative effect between a lengthening of the trajectory (avoidance) or a slowing down on a portion of the trajectory; leading to a longer trajectory or a slower vessel speed.
- Increased uncertainty about arrival times, at destination which is likely to generate management costs relating to the organization of the activity and access to port facilities; keeping the same arrival time is an important criterion for some activities, but less critical for others. Ferry companies have built their economic models on crossing schedules, taking into account the requirements of their customers, and can hardly afford to extend the transit time to comply with their business model.
- The dissemination of cetacean location data sharing should be optimized so as not to overload crews with information.

4 ACTION TAKEN PURSUANT TO DOMESTIC LAW

France, Italy, Monaco and Spain should take the necessary measures to promote compliance by ships flying their flag with rules adopted by the Organization to reduce and minimize ship strikes of cetaceans. Enforcement and police measures are in the hands of coastal States depending on their national law and the location of the offense, which may expose offenders to administrative and/or criminal sanctions.

ANNEX 3

Description of the proposed NW Med PSSA (France-Italy-Monaco and Spain)

The proposed NW Med PSSA is located between the coastline of France, Italy, Monaco and Spain and a line with the following coordinates:

А	38° 39' 59.379" N	000° 6'0.000" E
В	38° 39' 59.379" N	000° 47' 59.476" E
С	38° 50' 03.331" N	001° 00' 00.398" E
D	39° 19' 01.812" N	001° 00' 25.212" E
Е	39° 28' 42.075" N	001° 40' 02.495" E
F	39° 51' 21.986" N	002° 16' 09.853" E
G	40° 34' 13.067" N	004° 04' 31.926" E
Н	40° 58'0.000" N	008° 12'0.000" E
I	41° 09'10.800" N	009° 31'10.800" E
J	42° 21'14.400" N	011° 31'0.000" E

To be noted, from H (Falcoe Cape) to I (Ferro Cape) the South boundary follows the coastline of Sardinia.

Coordinates are provided by the European Terrestrial Reference System 89 (ETRS-89).

This area encompasses the existing Spanish "Mediterranean Cetacean Migration Corridor" and the Pelagos Sanctuary defined as such:

A – "Mediterranean Cetacean Migration Corridor"

ID	Longitude (ETRS-89)	Latitude (ETRS-89)
1.	003° 39' 02.002"E	42° 18' 57.294'' N
2.	003° 39' 02.026"E	41° 54' 15.252'' N
3.	003° 30' 32.060"E	41° 37' 36.567'' N
4.	003° 15' 18.370''E	41° 23' 05.374'' N
5.	001° 34' 43.766''E	40° 42' 21.785'' N
6.	000° 33' 27.757''E	40° 00' 55.698'' N
7.	000° 20' 21.559"E	39° 30' 07.070'' N
8.	000° 20' 21.559''E	38° 49' 44.729'' N
9.	000° 30' 05.254''E	38° 39' 59.379'' N
10.	000° 47' 59.476''E	38° 39' 59.379'' N
11.	001° 00' 00.398''E	38° 50' 03.331'' N
12.	001° 00' 25.212"E	39° 19' 01.812'' N
13.	001° 40' 02.495''E	39° 28' 42.075'' N
14.	002° 16' 09.853''E	39° 51' 21.986'' N
15.	004° 04' 31.926''E	40° 34' 13.067'' N
16.	004° 33' 24.766''E	41° 06' 51.050'' N

B – Pelagos Sanctuary

Boundary	Description	Longitude	Latitude
Western	A line extending from the Escampobariou Point (on the western edge of the Giens peninsula)	N 43°01,70'	E 06°05,90'
	to the Falcone Cape (the westernmost part of the Gulf of Asinara)	N 40°58'00	E 08°12'00
Eastern	A line extending from the Ferro Cape (on Sardinia's north-eastern coast)	N 41°09'18	E 09°31'18
	to Fosso Chiarone (on the west coast of Italy)	N 42°21'24	E 11°31'00

ANNEX 4

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Pelagos sanctuary:

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Barcelona Convention – Mediterranean 2017 Quality Status Report:

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MSP-MED QUESTIONNAIRE: PSSA proposition in the Western Mediterranean and MSP national plans implications

This guestionnaire takes place in the framework of the MSP-MED project and its WP4: International cooperation with EU Member States and Third Countries. It will be employed to draft a document relating to the common challenges and opportunities in the Thyrrenian Sea with regards to the management of maritime activities and nature protection. The focus will be on the possible interactions between the PSSA proposal in the North-Western Mediterranean Sea for the protection of cetaceans from international shipping and national plans required by the MSP Directive (2014/89/EU).

*Obligatoire





Category of the institution * 7.

Une seule réponse possible.

National Authority

Regional Authority

-) Intergovernmental organization (including EU bodies)
-) Security and surveillance Authorities

Research

) NGO

Other

Autre :

PROCESS

8. 2.1 How did the PSSA proposition consider the Maritime Spatial Planning directive and the Maritime Strategy Framework Directive? (and/or other existing policies and ongoing planning activities in the area) Please answer only if your institution is concerned by the question

9. 2.2 How did the process of designing the PSSA involve different levels of governance and institutional actors at national level? Please answer only if your institution is concerned by the question

2.3 Would the PSSA recommendations and measures be implemented 10. through national/regional legislation? If yes how? Please answer only if your institution is concerned by the question

CHALLENGES

11. 3.1 Would the PSSA recommendations and measures be implemented through national MSP plans? Please answer only if your institution is concerned by the question

12. 3.2 How should the PSSA be integrated into national MSP plans? In case of integration, what will be the adjustment of MSP plans needed? (at regional level, please consider also the sub-area) *Please answer only if your* institution is concerned by the question

13. 3.3 Which are the institutions that would be in charge of enforcing the proposed area? And in the hypothetic case of its integration in the MSP plans? Please answer only if your institution is concerned by the question

OPPORTUNITIES

4.1 How will the PSSA involve and interact with existing agreements 14. (ACCOBAMS, PSSA Strait of Bonifacio...) and protected areas (Pelagos Sanctuary, Tuscan archipelago...)? Please answer only if your institution is concerned by the question

15. 4.2 How may the PSSA be an opportunity for strengthening transboundary cooperation (knowledge sharing, common tools for monitoring and assessment, common measures, knowledge transfer, etc.) Please answer only if your institution is concerned by the question

16. 4.3 In general, what are the expected benefits of the PSSA in your opinion and with regards to your area of expertise/action? Please answer only if your institution is concerned by the question

17. FURTHER INDICATIONS, ADDITIONS, SUGGESTIONS, PROPOSALS, ETC

Ce contenu n'est ni rédigé, ni cautionné par Google.





Annexe III Background paper on the Bilateral Event Italy-France





MSP-MED | Bilateral Meeting Italy-France 04/10/2022 (09:00-13:00)

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Addressing transboundary uses: data to guide enforcement of plans

Maritime Spatial Planning is expected to achieve its goals by ensuring transboundary cooperation as stated in Article 11 of the MSP Directive (2014/89/EU) "Cooperation among Member States:

1. As part of the planning and management process, Member States bordering marine waters shall cooperate with the aim of ensuring that maritime spatial plans are coherent and coordinated across the marine region concerned. Such cooperation shall consider, in particular, issues of a transnational nature."

The MSPMED project was established in regard of these indications provided by the Directive and to foster harmonization of plans in the Mediterranean region, in particular WP4- Sharing Experiences Across Countries- was conceived to facilitate the exchanges via transboundary meetings; this event is therefore focusing on uses that happens in neighbouring areas and may cross borders in terms of flows and broader impacts: namely they are maritime traffic, especially linked to ship transporting goods, touristic fluxes, energy, surveillance and military activities.

The area shared by France and Italy in the Northern Tyrrhenian Sea is at the crossroads for trade and major tourist destination, with high frequentation of the coast extremely important at all seasons. The Mediterranean Sea is one of the most used maritime road in the world, with major harbours in the French-Italian Mediterranean (Marseille, Genova, Toulon, La Spezia, Savona, Livorno, Olbia) that host activities related to commercial shipping, passenger transportation, and military actions. Moreover several important recreational ports can be found (Nice, Cannes, Bastia Sanremo, Portofino, Porto Cervo, etc).

The area is also of importance for biodiversity, and one of its hot spot, as testified by the presence of the Pelagos Sanctuary and of several Natura 2000 areas. Within this biodiversity area, marine mammals are considered as one of the endangered species.

The co-existence of both maritime traffic and cetaceans is unfortunately stained with collision of cetaceans. The maritime traffic in the area is expected to increase both in intensity and number of roads in the coming years. With this in mind, the EU Member States of the western area of the Mediterranean Sea, France, Italy, Monaco and Spain have decided to propose effective measures to mitigate the risk of ship collisions and reduce underwater noise in the area under the form of a PSSA (Particularly Sea Sensitive Area).



During the lifetime of the MSP-MED project a set of events involving French and Italian authorities working on security and biodiversity protection in the area took place and there is the need to bring together some of the results and the participants (MSP-MED and RAMOGE Meeting, MSP- MED Trilateral Meeting).

The recent agreement for a PSSA proposal among France Spain and Italy is identified as main topic of relevance to investigate how it will integrate MSP plans for effective implementation.

Why is it important to tackle this topic?

Enforcement of regulations for sensible or protected areas is always a delicate action, especially across borders. Common datasets and/or data standards and coordinated actions can greatly ease the enforcement in these peculiar areas and support the exchange of good practices between neighbouring countries.

A project proposal for the creation of a large Particularly Sensitive Sea Area (PSSA) in the Mediterranean for the protection of cetaceans was presented by France, Italy, Monaco and Spain to the European Council and officially submitted to the International Maritime Organisation (IMO) Secretariat in early September this year.

This proposal is a concrete illustration of the various steps and aspects involved in terms of both maritime spatial planning (MSP) and security and surveillance. Italian and French partners of the MSP-MED project are taking this opportunity to invite the respective stakeholders involved to communicate and exchange on the process of creation and management of PSSAs. The workshop will involve the national respective authorities involved as well as experts and representatives of existing initiatives for marine protected areas.

More information on the topic can be found at the official EC working document, available at this <u>link</u>.



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Towards the operational implementatic of MSP in our common Mediterranean

Msp-Med



The establishment of new transboundary sensible areas, such as the new PSSA France- Spain-Italy proposed to the IMO, may have important effects on the transboundary implementation of MSP.

What are the objectives of this sixth MSP-MED bilateral workshop?

The workshop aims at creating an environment for exchange between France and Italy on transboundary maritime uses and main issues that may ease shared planning and enforcement of the plans through coordinated surveillance and management. A focus will be offered to the definition and integration into MSP of large PSSA in the Mediterranean.

The main goal of this workshop is to identify priority aspects of interest to be considered in relation to the protection measures, especially those affecting speed limitation.

The invitation will be enlarged to representatives of RAMOGE, PELAGOS, ACCOBAMS secretariat and Spanish experts as observers.

What should be addressed during this workshop?

Giving the different national approaches to uses happening in areas of intense anthropic presence, the event will be subdivided as follows: Greetings, A set of presentations of issues and ongoing cases, an open discussion, closing remarks.

ATTENTION:

The event will take place online, registration is compulsory at:

PROGRAMME

1) Greetings

Greeting from the MSP-MED Coordinator: project advancements and national process update. Greetings from Accobams: Challenges, Achievements, Limitations TBC Greetings from EU DG MARE TBC

2) Presentation of the PSSA and national approaches





Mediterranean PSSA: the proposal, interaction with French MSP and its challenges – MTE TBC

PSSA, Italian national approach and vision -MITE TBC

PSSA scientific implications and relationships with PELAGOS - ISPRA

French approach Strategic aspect: strategic interests of extended surface, relevance, challenges – DGAMPA TBC Operational aspect and enforcement – Premar TBC

Italian Approach Presentation of Regional (Tuscany and Sardinia) main vision and measures considering MSP, Maritime traffic and natural protection.

Data driven protection: gaps, needs, future steps Tools and Innovation: national platforms for nautical information France: future PING national platform for nautical information -Shom Italy: Hydrographic Institute

3) Open discussion

A moment of exchange to enlarge the scope of the presentations.

4) Closing greetings

A final moment to summarize the key elements of the meeting.

Essential references used for this background paper

Directive 2014/89/EU establishing a framework for maritime spatial planning

Marine Spatial Planning (MSP) Toolkit (Chapter 4)

Marine Spatial Planning A Step by Step Approach toward Ecosystem-Based Management (Chapter 4)

MSPglobal International Guide on Marine/Maritime Spatial Planning

<u>COMMISSION STAFF WORKING DOCUMENT Union submission to the the 79th session of the International</u> <u>Maritime Organization's Marine Environment Protection Committee proposing to designate a Particular Sensitive</u> <u>Sea Area in the North-Western Mediterranean Sea to protect cetaceans from international shipping</u>



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Côte D'Azur Chiffres Clé 2018

Liguria cifre turismo



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Msp-Med Towards the operational implementation of MSP in our common Mediterranean Sea



Annexe IV Technical meeting minutes SP-IT 23/07/2021





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Technical Meeting Spain-Italy Madrid-23/07/2021

Introduction

A technical meeting was held in Madrid, hosted by the project partner Instituto Español de Oceanografía (IEO) on the 23th of July 2021.

The event was required by the Project Coordinator to share national plans state of the art among project partners and discuss the road ahead regarding common deliverables and events to be addressed in the coming months, especially in regard to Tasks that were postponed due to the pandemic.

The Grant Agreement requirements

The cooperation among Italy and Spain is foreseen in the original MSPMED Grant Agreement as part of **WP 4 Cooperation among Member States and with third countries**. More specifically in *Task 4.3 Establishing transboundary cooperation mechanisms and instruments with Third Countries. And especially* sub-task 4.3.2 Pan-Western Mediterranenan workshop. The broad goals of these activities should:

- Promote a coherent MSP Process, to address and facilitate the alignment of the governance and planning approaches.
- Identifying common issues impacting the cross-border MSP implementation in the Mediterranean and providing recommendations to eliminate obstacles and emphasize drivers.
- Fostering concrete cooperation and sharing on MSP between Mediterranean Member States.
- Establishing cross boundary issues to improve efficiency in planning and management of coastal and marine resources and activities.
- Facilitating the harmonization of MSP procedures in the basin by identifying areas and main sectors of concerns, analyzing the critical issues and concerns for the



implementation of transboundary MSP, and proposing mechanisms, instruments and planning measures for the identified areas.





Agenda

Agenda	
09:00	Introduction and greetings
9:10	MSPMED matters (CORILA-IEO)
11:45	Coffee Break
12:40	National processes (CORILA, MITERD & IEO)
14.30	Debriefing and conclusions

Participants

MSP-MED Partners		
CORILA -IUAV-CNR	Pierpaolo Campostrini, Barbara Giuponi, Andrea Barbanti,	
	Denis Maragno, Folco Soffietti.	
IEO	Cristina Cervera Nuñez, Monica Campillos	
Ministerio para la Transición	Sagrario Arrieta Algarra	
Ecológica y el Reto		
Demográfico		





Minutes

Introduction and Greetings

The meeting was introduced by Cristina Cervera Nunez, welcoming the Italian delegation and presenting the agenda.

It was followed by a greeting by MSPMED Project Coordinator's Pierpaolo Campostrini (CORILA) who presented the Italian participants, expressed how important it was to have in presence meetings to allow the project to be put back on track after the pandemic. He also recalled the long-lasting partnership between IEO and CORILA.

MSPMED Matters

<u>WP4</u>

IEO as WP leader for WP4 is asked to attend to the correct implementation of the tasks, and CORILA will help this, acknowledging the difficulties caused by the sanitary situation. The main outcomes to discuss are the Western-Mediterranean.

The Project Coordinator also expressed his hopes for possibilities of linking Western and Eastern Mediterranean from a MSP perspective, reporting on the Technical Meeting that took place in Athens on the 15th of July, during which first considerations on how the Eastern-Med event foreseen in the GA could take place were expressed.

He stated that the objective of this meeting and period is to arrive at the Steering Committee foreseen for September with concepts and ideas for the meetings required by the GA.

Other initiatives are already underway in the Western Mediterranean, such as WESTMED, MSPGlobal Pilot Project (closing) and other initiatives and bodies are active in the basin, BLUMED (closing) or Union pour la Méditerranée. It is important to share approaches and strategies with these initiatives. And invite representatives or involve institutions during MSPMED Pan-Mediterranean events, in this regard.

IEO, as WP leader at first intended to collaborate with MSPGlobal in organizing the West-Mediterranean and Trilateral Meetings (Spain-Morocco-Algeria), in task 4.3. However, due to the approaching end of MSPGlobal (October 2021) this is not possible anymore.





The original approach considered also to subcontract the organization of the events and the report creation. The tender is undergoing but is yet to be defined.

The original structure of the events would have been as follow:

-introductory afternoon

- full day

-closing morning

The number of participants and guest speakers would have been determined by the budget allowances and sanitary restrictions.

These considerations are still valid for the future but will likely need some rethinking. Topics have not been selected but there is the intention to avoid triggering any possible patronizing perception from Third Countries.

The PC suggested the Steering Committee as a rightful occasion to assess budget in order to cover for upcoming events and counter the underbudgeting caused by the pandemic.

He also suggested that meetings would address topics that are not likely to cause diplomatic issues. In this regard UNESCO may facilitate the presence of representatives of countries in conflict at the same table.

To achieve this it is important to use established networks and contacts in place and involve UNESCO from the design of the meetings.

Bilateral Meetings (4.2)

Task 4.2 foresees a Bilateral Meeting between France and Spain on the Gulf of Lion (4.2.1) and one involving Italy and France about the Tyrrhenian Sea (4.2.3), however, since these consultations will feed one single deliverable, D39, and the issues of common concern are shared among these three countries, the PC suggested the idea to have a three lateral consultation, whether by substituting one of the bilateral events or by combining them as to have a moment for common discussion.

Subjects of these consultations could be environmental issues, MSP oriented, also building on background work already carried out by French and Spanish partners in drafting an event focused on cetaceans.

IEO's Dr.Cervera Nuñez reported that the meeting was designed and coordination with ACCOBAMS secretariat was desirable, and this would link ongoing work in WP2 involving studies on birds, cetaceans and habitats with WP4. The approach would be the identification of conflicts between human uses and cetaceans.



Dr Barbanti highlighted that ACCOBAMS surveys 2018-2019 and subsequent workshop to take place OCtober 2021 will see involvement of many MSPMED partners (CNR,OFB, IEO, UTH, PA) and therefore MSPMED Consortium could support ACCOBAMS, while helping transboundary cooperation.

Further topics emerged as possible options for three lateral consultation, a synoptic list is the following:

- -Governance Levels (National, regional)
- -Conservation matters
- -Blue Growth
- -Maritime transport (also in relationship with conservation and touristic issues)
- -Struggles in delivering good scenarios
- -Port adaptation to changes
- -LSI: Small ports governance and changes defined by technology

In the end it was considered wise to contact Competent Authorities and verify which topic could be of greater interest and use in regard to planning.

Western Mediterranean Event (4.3.2)

The PC reiterated the interest in involving other institutions such as UNESCO and Union pour la Méditerranée, and possibly create a connection between Western and Eastern basins, for instance by tackling similar issues to enable comparison.

The topic of climate change, and climate change adaptation, its implementation in national plans that also emerged as a possible topic for discussion in the Eastern Mediterranean was considered as a good option to present to the Steering Committee and Third Countries.

Especially since Morocco expressed interest in this topic in the past and it is a matter of concern not only because of sea-level rise but also because of coastal erosion and extreme meteorological events.

The results of these consultations could then be integrated into national plans. Dates of when these meetings could take place (suggestions were made to move them towards the end of the project) is still to be determined.

This section was closed by the agreement on finding a pragmatic approach and have discussion on practical issues that can enhance the plans and help the establishment of more events foreseen from Articles 11 and 12 of the European Directive on MSP (2014/89/EU).





Presentations of National Plans

Italy

Dr Campostrini introduced how CORILA-IUAV-CNR are supporting the Italian planning process, and Dr Barbanti presented the Italian legislative framework, the procedural asset and highlighted how the planning took place. The planning was organized in different phases (6) and after analysis were carried out, vocations and objectives were identified, planning of sub-areas into planning units was performed by consulting the regional authorities and involved ministerial bodies.

In the current state of the art, a revised, well advanced, document for the plan was sent to the EC, but there is still need for the ESA and public consultation to finalize the plan.



Spain

In Spain the plan is available for public consultation (ongoing and set to end on the 8th of September) on the Infomar portal (http://infomar.cedex.es/), the ESA is well advanced and transboundary





consultation has been asked to neighbouring countries. France and Portugal have answered and a meeting will take place in the 1st week of September. To the EC Spain sent an official communication of the start of public consultation and a link to the online website where official documents are available.



A general discussion is offered by the national approach to the definition and design of areas identified for offshore energy:

in Italy vocational areas are designed according to regional indications. Pilot projects are under approval in Rimini and Taranto.

In Spain two different kinds of areas have been designed: one as potential and one as priority use for energy. They will be reviewed and redesigned after public consultation.



Wrap up and Greetings

The event was closed by a recap of the next steps to undertake:

- 1) the sharing of the present meeting results with French partners and Competent Authorities.
- 2) the onset of contacts with other project partners, and relevant authorities for the Western-Mediterranean event.
- 3) the onset of contacts with UNESCO, Union por la Mediterranée and other bodies that will ease a pan-Mediterranean approach.

A final reflection considered that the upcoming Steering committee, foreseen for early September 2021, could represent a good moment to present these initiatives to the full consortium and define key points for their design.

Final greetings expressed mutual satisfaction for this exchange and future cooperation.


Annexe V Trilateral Meeting IT-SP-FR 02/09/2021





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MSP-MED

Trilateral Meeting between Italy, Spain, and France 2nd of September 2021 - Paris

Introduction

In compliance with the Grant Agreement requirements of Task 2.7 *Sharing experiences among countries* (WP2) and WP4 *Cooperation among Member States and with third countries*, in order to compare the current MSP processes and assess the potential overlapping topics of interest, a trilateral technical meeting was called by the Project Coordinator (CORILA) on the 2nd of September 2021. The event took place in a hybrid form: the in-presence event was hosted in Paris, by the Secrétariat général de la Mer.

The objective of this trilateral meeting was to discuss different management approaches of the maritime space in the neighbouring areas: Tyrrhenian Sea - Gulf of Lion - Balearic/Sardininian Sea where the three countries have jurisdictions. The outcome of this meeting was to identify topics of interest for discussion between the three partner countries, since a series of consultation /seminars/ or workshops are foreseen to take place focusing on the shared maritime area between the three countries.







The Grant Agreement requirements

The cooperation among Italy, France and Spain is foreseen in the original MSPMED Grant Agreement as part of WP 4 *Cooperation among Member States and with third countries*. The first goal of any cooperation is to identify common issues, driving or hindering transboundary/cross-border MSP implementation in the Mediterranean and provide suggestions to strengthen drivers and/or remove obstacles.

Task 4.2 foresees a Bilateral Meeting between France and Spain on the Gulf of Lion (4.2.1) and one involving Italy and France about the Tyrrhenian Sea (4.2.3). However, since these consultations will feed one single deliverable, D39, and the issues of common concern are shared among these three countries. Hence, the Project Coordinator suggested the idea to have a three-lateral consultation by combining them to have a moment for common discussion.

More specifically, the objective of this trilateral meeting was to set up a topic of certain activities able to foster a concrete cooperation between the three countries.

The broad goals of these activities should:





- Promote a coherent MSP Process, to address and facilitate the alignment of the governance and planning approaches.
- Identifying common issues impacting the cross-border MSP implementation in the Mediterranean and providing recommendations to eliminate obstacles and emphasize drivers.
- Fostering concrete cooperation and sharing on MSP between Mediterranean Member States.
- Establishing cross boundary issues to improve efficiency in planning and management of coastal and marine resources and activities.
- Facilitating the harmonization of MSP procedures in the basin by identifying areas and main sectors of concerns, analyzing the critical issues and concerns for the implementation of transboundary MSP, and proposing mechanisms, instruments and planning measures for the identified areas.

Structure

The meeting was divided in three parts: in the first part, the French partners presented their national maritime spatial plan and progress so far in the three facades of the French Territory. Key issues, prospects and difficulties were also shared by the French partners.

Following the French partners, the Spanish partners represented by Aurora Mesa Fraile, and Sagrario Arrieta, explained the Spanish side and the common interests with France. Finally, the Italian partners presented the current state of the art of the Italian plan and potential challenges and topics of interest.

The final part of the meeting was dedicated for discussions and agreements on the main topics and issues to be discussed in the workshop and main consultation.

Programme

Draft Agenda		
09:30	Introduction and Greetings by Project Coordinator - Pierpaolo Campostrini (CORILA)	
9:40	Presentation by the French Partners (Maïté Verdol, Olivier Laroussine, Neil Alloncle)	



11:10	Presentation by the Spanish Partners (Aurora Mesa Fraile)
11:20	First part of the presentation by the Italian Partners (Daniele Brigolin, Fabio Carella, Andrea Barbanti)
13:00	Lunch Break
14:00	Presentation by the Italian Partners (Daniele Brigolin, Fabio Carella, Andrea Barbanti)
16:00	Discussions
17:00	End of meeting and Social Event

Participants

MSP-MED Partners FR-SP-IT			
CORILA -IUAV-CNR	Pierpaolo Campostrini, Andrea Barbanti, Francesco Musco,		
	Denis Maragno, Daniele Brigolin, Micol Roversi Monaco, Fabio		
	Carella, Folco Soffietti, Hadi El Hage, Alessandro Sarretta,		
	Amedeo Fadini		
Shom	Armelle Sommier, Adeline Souf		
OFB	Neil Alloncle, Camille Assali		
IEO	Cristina Cervera Núñez, María Gómez Ballesteros, Mónica		
	Campillos Llanos		
MSP Competent Authorities			
Ministry for the Sea (France)	Maïté Verdol, Olivier Laroussinie, François		
Ministry for the Ecological	Aurora Mesa Fraile, Sagrario Arrieta		
Transition and the			
Demographic Challenge			
(MITERD) – DG for the			
coasts and the sea (Spain)			





Minutes

The trilateral meeting started with an introduction by the Project Coordinator Pierpaolo Campostrini (CORILA) in presence in Paris, France. The event took place in a hybrid form: the in-presence event was hosted in Paris, by the Secrétariat général de la Mer. The possibility to join in online mode was granted for those unable to participate in person via the online platform GoToMeeting.

France:

Maite Verdol, representing the French competent authority, shared and explained about the French MSP Process that was adapted in 2017.

Dr Verdol explained the Sea Basin Strategy Elaboration (mainland France) where it combines the integrated maritime policy from the European Commission with the National Strategy for the Sea and the Coast while having institutional consultation. The process is conducted both nationally and internally, where there are four different facades of the French marine space. The process conducted at the Sea Basin Scale includes the localisation of 4 parts and facades.

The process is conducted under the responsibility of two coordinating prefects which are the French State Representatives - resulting in a legally binding document divided into 4 parts and having two components: the strategic component and the operational component. The legally binding document is adapted for 6 years, and coordinated by 2 prefects that are the representative of the state both the marine and the territorial sides.

Stakeholder Engagement and Consultation has been done in the French MSP Plan where different stakeholders work in different thematic working groups to deal with different aspects. Public consultation has been organized in two moments. However, the French emphasized that it is very important to go back to the public to better understand their needs. The public consultation helped deal with the people's choices and helped in the operational part of the Sea Basin Strategy.

Dr Verdol highlighted the timeline from 2018 up until 2022. Where the first 2 years were the strategic phase, and from 2020 through 2022 the operational one. The monitoring framework is common to all the sea facades and share the same strategic objectives. The endorsement of the monitoring program is by the sea basin coordinating prefects. The adopted strategy includes all the synoptic maps that sum up the issues related to the sea basin.





The strategic objectives are common for all the facades that include the conservation of marine habitats and marine species, the pressure reduction, the maritime and coastal economic activities, and cross-sectoral objectives.



The Monitoring Framework has also been discussed, with the two main chapters related to the objectives defined within the strategic component. The chapters meant for assessing implementation of the strategy document include:

- Chapter "Activities, uses and public policies".
- Chapter "Coastal ecosystems: state and pressure".

Once collected, data gathered through the monitoring mechanism are integrated into the information systems related to the relevant directives (esp. Metadata for MSFD) and made available via the Marine Environment System SIMM.

One of the interventions from the Project Coordinator Pierpaolo Campostrini was regarding the integration of the data that is not coastal. Maite Verdol and Olivier Laroussinie replied by explaining that this will rely on the data service that is statistics, and that it is difficult to integrate elements not related to coastal activities. The data is related to the strategic objectives and are therefore connected to the coastal objectives. For instance, Coastal tourism





- the data is derived from the National Statistic Institute. Though monitoring of both land and sea is the objective, the problem that the French side is facing is the implementation of the MSFD within the French framework. MSPD is only marine, and due to those challenges it was difficult to implement it in connection to the land.

Dr Verdol continued the presentation by explaining the focus on the Mediterranean action plan which are 6 *Chapters,* 6 *Universes*. And she elaborated the Mediterranean Sea basin action plan by mentioning the selection of representative actions:

- Implementing the Mediterranean strategy for the management of ships' moorings.
- Developing and implementing a sustainable cruise management strategy in the Mediterranean.

This is to protect the area of where the seagrass Posidonia (*Posidonia oceanica*) is more present.

Another selection of representative actions includes:

- Capitalising and releasing knowledge about offshore wind farms and their environmental impacts.
- Deploy a competitive, sustainable and structured "commercial floating wind" sector.
- Develop and implement a sustainable cruise management strategy.
- Strengthening territorial cooperation to participate in the deployment of ecotourism.

The 6 Chapters, 6 Universes included: *Littoral, Ressources halieutiques et aquacoles, Espèces et espaces emblématiques, Ports et industries navales et nautiques, Éduquer sensibiliser former, et Dechets and presented a wide specific list of representative actions.*

These were the three topics proposed by the French Partners as possible common issues in the Tyrrhenian Basin to be discussed during the trilateral meeting:

Coordination of MSP process with sectoral planning esp. marine renewable energies

In France, marine renewable energies are developed through a specific timing and process different from MSP. Several projects are being submitted to the public. Regarding the need to foster knowledge and deal with cumulative impacts linked to marine energies, recent works have been initiated to bring closer these processes.

From an operational perspective, this topic could be addressed via a discussion over the institutional organisation of each country, the current marine renewable projects and their implementation as well as the way cumulative effects are dealt with.





Integration of economic and environmental strategies

France has chosen to implement MSP and MSFD within the same process (elaboration of the Sea Basin Strategy document) with the objective to promote coherence and synergies between the two approaches.

Several questions remain at the end of the first implementation cycle:

Planning uses accordingly to environmental needs/sensitivity (avoiding impacts) or using MSP to support environmental transition (promoting maritime uses evolution to make them compatible or benefit to the environment)?

- What is the predominant factor to spatially plan maritime uses: significant areas from ecological point of view? Distribution of maritime uses? Administrative boundaries?
- Do we have enough knowledge? How to deal with incoherence between these different ways of zoning (when administrative boundaries don't fit with ecosystem repartition for example)?
- How to assess compatibility between environmental and economic strategies? Role of SEA but is it an iterative work all along the planning process or a kind of control at the end?
- Do we have enough knowledge to promote sustainable uses or alternative solution when economic development could create impacts?

From an operational perspective, such an integration could be addressed through the case of the development of large size yachting along with the preservation of Posidonia meadow.

Territorial implementation and relation with local authorities

French Sea Basin Documents should be fully operational in March 2022 once the action plans are adopted by the coordinating prefects.

Regarding the French administrative structure, several actions depend on regional, subregional or municipal competence.

Several questions arise to ensure that Sea Basin Strategies are implemented locally and take into account land-sea interactions among which :

- Governance: how are regional, sub-regional and local levels associated within the MSP Process?
- Means: how are financed actions that help accomplish MSP (subsidy, public call for proposals,...) ?





- Monitoring: what mechanisms are developed to monitor the contribution of local actions to MSP?

From an operational perspective, coastal tourism represents an activity that could be discussed deeper, especially given the pressures associated with it and the efforts currently made to understand better its economic importance, develop a more sustainable approach (eco-tourism) to reduce pressure while maintaining territorial attractivity.

Cristina Cervera Nunez from IEO intervened and questioned the hot topic of the sustainable management of the cruise ship? Dr Verdol explained that there was a specific commission working on the policy of harbours and ports strategy and regulation of cruises and syndicates that was working in the French institutes. This includes a program of measures (PoM) and includes a 2 step process: first gathering at the sea basin level and then the focal point in charge of the MSFD - that reports back to the French competent authorities.

Francesco Musco (IUAV) questioned the spatial dimension of the actions done and the management of the activities and the interrelationship. Dr Verdol replied that the spatial planning is done in the policy and the strategy related to the cruise ships and portal zones.

Arietta Sagrario raised a question regarding the consultation and previous discussions before launching the projects. The question revolved on how the French plan is considered to have an impact on the planning strategy with respect to the neighbouring countries and the formal consultation about the action plan. The main issue at stake at Gulf of Lion is regarding the wind farm location and the problem of the bats in the Gulf of Lion. Dr Verdol concluded that the directorate general in the Ministry of Energy is the one responsible to produce and manage the wind farms, and that it is a topic worthy of discussion and shared these links for further information.

http://eoliennes-flottantes-mediterranee.geophom.info/ www.eos.debatpublic.fr/

Finally, the topics of the landscape and the seascape were also discussed and taken into consideration as relevant topics to the French side and could be further explored.

Spain:

The second country sharing the MSP Plan regarding the area of interest was Spain and the MSP plan was presented by Aurora Victoria Mesa Fraile from MITERD - Ministerio para la Transición Ecológica y el Reto Demográfico. Dr Mesa Fraile explained the Spanish Maritime Spatial Plans by explaining the:



- Context and the scope of the application, by focusing on the regulatory framework and the methodologies followed in Spain and mentioned the scope of the application of the MSP.



- The Guiding Principles and Planning Objectives were also shared. These Objectives are based on the regional (subnational), national, European and international already existing objectives. The General Planning Objective of Spanish MSP Plans is divided into three types of objectives from General-Interest objectives, to multi-sector horizontal planning objectives, to sectoral planning objectives.
- The Diagnosis of each of the 5 marine demarcation areas were explained. For each marine demarcation the following topics are address within the Spanish MSP Plans: the main features and the characteristics, the Maritime sectors, the current limitations on certain uses and activities, and the spatial distribution of the future uses and activities. Moreover, the land-sea interactions were discussed and the interaction between uses and the activities in all the areas.
- Regarding the Maritime Spatial Planning, the general criteria and measures for a co-existence were elaborated by Aurora Mesa Fraile. The planning framework was explained by focusing on the co-existence of the uses, the priority use activities, and the high potential areas. A set of criteria were used to identify each of the PUA and HPA, like the horizontal criteria for sustainable coexistence, the sectoral criteria, the land-sea





interactions criteria, and the zoning criteria. These were the basis for the zoning and normative cartography needed.

These maps can be found on: <u>www.infomar.miteco.es/</u> which is the information system about the marine environment developed and updated by CEDEX's - Centre of Port and Coastal Studies.

- Finally, the application, assessment and monitoring of the plans was shared. This includes the measures in the maritime spatial plans, the strategic environmental assessment, and the monitoring of the maritime spatial plans.

The monitoring of the plans is done through 4 main aspects: the environmental status, the human activities, context and socio economic evolution, and the MSP objectives and effectiveness of the plans.

Ending the presentation, the Spanish partners shared about the next steps which include:

- July September 2021: the integration of the allegations received and to draft the final version of the plans and the strategic environmental assessment document.
- End of 2021 Beginning of 2022: the approval by the Royal Decree.
- 2022: submission to the EC.
- 2022-2027: the implementation of the measures, monitoring, annual reports, etc.
- End of 2027: Reviewing and updating.

Also, the challenges faced were all discussed and these were regarding the stakeholders' involvement in the context of the COVID-19 Pandemic. The knowledge gaps regarding the impact of renewable energy on fisheries and biodiversity. And the conflicts that emerge between traditional and emerging sectors.

Prior to the meeting, the Spanish Partners shared these 3 topics to be potentially discussed in the trilateral meeting between Spain, Italy and France.

Coherent management of marine mammal's populations

Activities developed in marine environments can lead to different impacts in marine mammal's populations, such as collisions, underwater noise, building new infrastructures (wind farms), etc. Given the highly migratory nature of these species, a coordinated management between countries is essential.

When effectively managed, Marine Protected Areas are important mechanisms for safeguarding ocean life. In Spain, the Mediterranean Cetacean Corridor was declared as a





"Marine Protected Area" in 2018, in order to guarantee the conservation of species and habitats present in the area.

Addressing this topic in a future technical workshop might be useful in order to exchange experiences, coordinate efforts between countries, and establish future ways of collaboration.

Knowledge gaps related to renewable energy interactions with other maritime activities and uses

Marine renewable energy is considered by the EU 2021 Blue Economy Report as one of the main emerging maritime sectors. This sector can contribute to national, European and international decarbonisation objectives, hence playing an important role in supporting climate change mitigation efforts. However, implementation of these new technologies can lead to different interactions with other activities and uses in marine space.

During the Spanish Maritime Spatial Plans public consultation, different issues are arising concerning the interactions between floating wind farms and other activities and uses, mainly fisheries and biodiversity conservation.

Although some information exists regarding the impact of floating wind farms, some questions remain unclear, and more research and development is needed. Regarding cross-border issues, floating wind farms in one country can have impacts on migratory populations of certain animal groups, like cetaceans and seabirds, of neighbouring countries, crossing through the Gulf of Lion, for example.

This topic could be the object of a future technical workshop exchanging experiences and information between countries, analysing the already existing information, trying to harmonize methodologies used and identifying knowledge gaps where more information and data is needed.

Transboundary cumulative effects of maritime uses and activities planned

Spanish partners considered that it could also be interesting to take into consideration how the number of current and future activities should need to be analysed and planned in a transboundary area. For example, related to wind farms, if the number of these infrastructures increase during the following years in an area, it might have cumulative effects, in addition to the marine environment, to other human activities, and it might also have effects in a transboundary area. This could affect the behaviour of biological marine resources, such as fishing grounds, and also activities like tourism.







Italy

The Italian MSP plan was presented by Daniele Brigolin (IUAV), Fabio Carella (IUAV), and Andrea Barbanti (CNR-ISMAR). The Italian partners began their presentation by explaining the national legal framework needed for maritime spatial planning. This included: the Italian Law implementing the EU directive naming the Ministry of Infrastructure and Sustainable Mobility as the competent Authority, the Rules of Procedure for the Technical Committee where the committee was deliberate unanimously, and the Italian Regulation Supplementing the guidelines containing the addresses and criteria for drawing up the MSP Plans.



The MSP decision-making procedure was explained and the division into three Maritime Areas. The focus of this meeting is on the "Tyrrhenian - Western Mediterranean", which shares the common maritime space with France. It consists of a total of 11 sub-areas, 7 coastal sub-areas and 4 offshore sub-areas.

The Operative phases of the plan are composed of 6 phases:

- 1. The initial status, current and expected trends.
- 2. The Analysis of the interaction between uses and the impacts on the environmental components.
- 3. Vision and strategic objectives.





- 4. Strategic planning, specific objectives, planning units and measures.
- 5. Methodology and indicators for monitoring and adapting the plan.
- 6. Activities to consolidate, implement and update the plan.

The fourth phase includes the cognitive data such as the legal regime, the maritime transports, the energy, the aquaculture, the protected areas, the fishing, coastal risk and marine aggregates, the coastal and maritime tourism, landscape and cultural heritage, military constraints, and the research sites.

The coastal overlay of uses was discussed and the presenters explained the definition of the planning unit, where the MSP Plan started from the analysis of existing uses. At the national level, the data was added by the regions. For instance, the data about artisanal fisheries or aquaculture development have been provided by the regions. Daniele Brigolin explained the definition of a planning unit which is existing data and combined with data from the regions. In many cases, creating planning units with multiple priority uses were needed because there are many sectors to consider, for instance

The Italian partners also explained the synoptic infographics that have been created for each of the Maritime Areas to present how the plan was created. A diagram was used to explain how the input and output data could be read.

The Italian partners proposed three topics to be discussed including:

the Interaction between landscape, cultural heritage and new uses. This has been fueled due to the high density of cultural heritage and landscapes along the Tyrrehenian coast and the pressure due to mass tourism. The different kinds of landscape characterizing the coastal area: the natural landscape, the seascape, and the anthropic landscape. The idea of the landscape conversation in the land-sea intervisibility has been discussed as well as the impacts on the traditional landscape of existing and new uses such as the installation of renewable energy, facilities for aquaculture and cruise ships.

The definition of seascape (quoting the Florence Convention) was discussed among the partners and the importance of underwater landscape, seascape, and the human-made component.

The second topic discussed was related to the interaction between Maritime transport and Protected Areas, where intense transport flows are present in the Tyrrhenian Sea, even in areas hosting priority habitats and species of interest for conservation (e.g. CBD-EBSAs, Pelagos). The Italian Plan seeks a solution to the conflict existing between the transport and the conservation priorities by identifying Planning Units (PUs) with a double priority to create a





synergy between both. In addition to looking at safety, as control and limitation of accidental and deliberate release of hydrocarbons and other hazardous substances into the sea, (Marpol Convention 73/78 and Directive 2005/35/EC). This aspect represents an important element in the PUs insisting on the straits of Bonifacio and Messina.

With the Italian plan with the Ministry - the question asked whether there is a plan to identify Marine Protected Area through the MSP Plan? But then it was decided that this was left for Natura2000 and other assets. MSP is found to be the driver of such matters.

The Third topic discussed was how can current sectoral plans be integrated and how will the future sectoral plans implement MSPIan? MSP plans made use of the existing knowledge available from sectoral plans (e.g. GSAs plans for fishery, PITESAI-PNIEC for energy). The limits of the sub-areas have been defined taking into consideration the limits of the three different GSAs present in the Tyrrhenian Sea. So how new sectoral plans (e.g. AZA - Allocated Zones for Aquaculture) will implement the MSPIans?

An intervention from the French partners highlighted that the situation is similar to France: there are plans for aquaculture and they are not foreseeing what will happen. There are plans for the aquaculture, but the partners highlighted that it is important to fully integrate aquaculture in msp planning.

Prior to the meeting, the Italian partners shared the following topics to be discussed in the Trilateral meeting with the Spanish and French Partners.

1) Landscape, Cultural heritage, and 'New' Uses

Landscape and cultural heritage are crucial within the Italian legal and planning system. Therefore, according to Italian national guidelines for MSP, both the underwater cultural heritage and the coastal landscape can be considered marine water uses, or interests within the plan. In addition, conservation and enhancement of landscape and cultural heritage should be included - since the very beginning – in MSP Plans, as objectives to be pursued. These uses or interests are connected with the promotion of a sustainable and high-quality tourism.

There are some controversial issues regarding the visual impact of renewable energy infrastructures and facilities for aquaculture, and also the presence of cruise ships. Moreover, there are some issues regarding the coastal space (e.g. illegal building along the coastal area).

It could be interesting to deepen this topic, also in a future technical workshop, exchanging experiences among countries involved in MSP-MED.

In particular, it could be interesting to focus on:





- Measures and legal provisions to ensure a sustainable and high-quality tourism;
- Technical possibilities to lower the visual impact of installations;
- The relationship between MSP and urban planning powers of coastal municipalities.

2) Interaction between Maritime Transport and Protected Areas

In the Tyrrhenian Sea, the high intensity of transport flows, in particular that of passengers and tourism, coexists with an extensive presence of marine areas for the conservation of priority habitats and endangered species, including Marine Protected Areas (MPAs), the Natura 2000 Sites, Pelagos Sanctuary, CBD designated EBSAs, and other Ecological Protection Areas.

The Italian Plan for the Tyrrhenian Sea approached the problem of coexistence between transport and nature conservation by identifying Planning Units (PUs) with a double priority to create a synergy between both. In addition, the plan attentioned the continuity of large scale conservation corridors among sub-areas.

On the interaction between transport and conservation, the protection of marine mammals (see Pelagos) is a topic of interest. Another aspect that can be touched is that of the Marpol convention, with reference to the safety issue (examples of Bonifacio and Messina). Hence, sharing and coordinating efforts with neighbouring countries is worthy of discussion.

As there is a lot of pressure exerted on these areas, studying and measuring the interaction and the effects between these transport flows and the environmentally protected areas is to be considered.

3) How can we integrate the current sectoral plans and how will the new plans be integrated in the MSPlans?

On the subject of coordination with sector planning, the effort to integrate the plans of the GSA in the Tyrrhenian Sea could be mentioned, starting with the definition of the limits of the sub-areas. For aquaculture, however, the current absence of the AZA (Allocated Zones for Aquaculture) plans did not allow proceeding in the same way.

Integration means also harmonizing measures, actions and targets with those of the sectoral plans. In terms of integration, the plans for the Tyrrhenian Sea tried to minimize the effects due to the presence of administrative borders, by coordinating the plans between the different regions and subareas, and combining their specific goals.

This is a potential topic that could be discussed and elaborated with the other partners where sharing of experiences and knowledge in a technical workshop could take place.





Final Discussion between the partners

After several discussions, the partners wrapped up the discussion and found a common theme to be discussed in the upcoming trilateral consultation. The theme approved was the new concepts of seascape and landscape that are common to Italy, France, and Spain.

Within the theme of landscape that should be addressed, cultural heritage could also be looked into. As it is the aspect that could be all across the Mediterranean, especially also the East Mediterranean - where finding a common non-political topic is more difficult. The topic of landscape is related to perception based on the paesaggio/landscape convention done in Firenze by the European Union. Articulating more about the landscape of the sea, especially in Spain, France, and Italy which have a rich landscape and cultural heritage.

The French partners agreed to elaborate on this topic about Landscape. OFB formed a protection agency on underwater seascape and they issued a book on underwater seascapes. Also, the National council showed that the landscape is taken into account in their plans. Hence, this topic is of great value and importance.

The Spanish side also expressed their enthusiasm and agreement towards this topic to be addressed. Cristina Cervera Nunez from IEO, emphasized the importance of making it a more tangible topic, relating to issues and topics shared by the three countries.

For instance, a point of interest could be in looking at how the marine renewable energy impacts on biodiversity, also the impact on the local communities and seascape impacts. A more elaborate idea would be how to deal with local management in a concrete and practical way.

Landscape is a multifaceted issue that started with the idea of aquaculture, wind farms, the increase of leisure boats and transport. The perception of the people changes as they are above the sea level. The landscape is perceived by the community, so this includes the lives of the people and the values of the space.

The Italian partners also agreed about the importance of this topic. In Italy, landscape is a very important and significant issue. The Ministry of Cultural Heritage is overlooking the Italian plan, and has superintendency in each region and province in the 3 planning areas in Italy. For the landscape issue, as far as the Maritime space is concerned, the ministry is also interested in landscape considerations.





The partners also agreed to find experts that can discuss this topic in depth as an exploratory theme. A workshop could be designed within MSPMED, where we can see what kind of targets or plans that could be imagined.





Annexe VI – IT-GR Technical meeting minutes

Report 15/07/2021





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Technical Meeting Greece-Italy Athens-15/07/2021

Introduction

A technical meeting took place in Athens, hosted by the Ministry of Energy and Environment (YPEN) on the 15th of July 2021, the meeting was the first in person, since the beginning of the project.

The event was necessary in order to share national plans state of the art among project partners and discuss the road ahead regarding common deliverables and events to be addressed.

The Grant Agreement requirements

The cooperation among Italy and Greece is foreseen in the original MSPMED Grant Agreement as part of **WP 4 Cooperation among Member States and with third countries**. More specifically in *Task 4.2 Establishing a solid transboundary cooperation in MSP among bordering Mediterranean Member States*, with sub-task 4.2.3 Northern Ionian Sea (GR-IT) Consultation and activities on the shared maritime area between Greece and Italy. The broad goals of these activities should:

- Promote a coherent MSP Process, to address and facilitate the alignment of the governance and planning approaches.
- Identifying common issues impacting the cross-border MSP implementation in the Mediterranean and providing recommendations to eliminate obstacles and emphasize drivers.
- Fostering concrete cooperation and sharing on MSP between both Mediterranean Member States Italy and Greece.
- Establishing cross boundary issues to improve efficiency in planning and management of coastal and marine resources and activities.
- Facilitating the harmonization of MSP procedures in Italy and Greece by identifying areas and main sectors of concerns, analyzing the critical issues and concerns for the





implementation of transboundary MSP, and proposing mechanisms, instruments and planning measures for the identified areas.







Programme

Agenda		
09:30	Introduction and greetings (5 min each):	
	Pierpaolo Campostrini (CORILA)	
	Harry Coccossis (UTH)	
9:40	Presentations of the Greek plan state of the art (Foteini Stefani, YPEN)	
10:35	Coffee Break	
11:00	Presentation of the Italian plan state of the art (Francesco Musco, IUAV)	
12.30	Lunch Break	
13.30	Discussion on future events and collaborations	
17:00	Debriefing and conclusions	





Participants

MSP-MED Partners	
CORILA -IUAV-CNR	Pierpaolo Campostrini, Barbara Giuponi, Francesco Musco,
	Fabio Carella, Folco Soffietti.
UTH	Evangelos Asprogerakas, Panos Manetos, Harry Coccossis,
	Tonia Koutsopoulou, Kallinoi Lagga, Alexandroi Chaxalis
YPEN	Foteini Stefani, Elena Lalou, Anna Spyropoulou, Evgenia
	Lagoiu, Georgia Kotini

Minutes

Introduction and Greetings

The meeting was introduced by Harry Kokkosis, welcoming the Italian delegation, presenting the Greek participants and the agenda.

It was followed by a greeting by MSPMED Project Coordinator's Pierpaolo Campostrini (CORILA) who presented the Italian participants, expressed his satisfaction about this first in person meeting and explained the relevance of a cooperation between Greece and Italy in the framework of of the project and of international MSP, especially in the Eastern Mediterranenan where there fewer projects and collaborations are in place.

Eventually Folco Soffietti from IUAV made an overview of MSPMED progresses, highlighting the need for fostering bilateral consultations and pan Mediterranean events, since they had to be postponed in reason of the pandemic but are now in need to be performed as required by the Grant Agreement.

Presentations of National Plans

Greece

Foteini Stefani (YPEN) presented the Greek legislative framework, since the plan is still at a pre-design stage.







The Greek planning is structured among three levels: a National Spatial framework, a Regional Spatial Framework and a Urban Local Planning. Objectives of the regional spatial planning are the

Protection/ promotion of Regional identity and the Economic development and social cohesion through synergy of sectoral policies.

To this day two main laws have been issued and are regulating the planning: a National Maritime Spatial Strategy which:

-Determines the strategic directions for marine areas

-Indicates the priorities for the implementation of Maritime Spatial Frameworks

And a Maritime Spatial Frameworks that:

- Correspond to the Regional spatial level

- Refer to spatial units, which determined by the national Maritime Spatial Strategy and which can be sub-regional, regional or interregional level

The national plan procedure is ignited by the Ministry of Energy (Competent Authority) that opens a consultation with other ministries, the Spatial Planning Council and the public. A second phase is set when the Ministry of Energy presents a proposal that needs approval by the Council of Ministries a presentation to the Parliament and an official announcement.



In parallel to the plan a Strategic Environmental Assessment is performed, in compliance with European requirements. The bodies responsible for the SEA the Ministry of Energy and Environment, the





Co-competent ministries and authorities and the regions. Public administration and participation procedure must be integrated.



Italy

Dr Campostrini introduced the Italian legislative framework regarding MSP and the governative and technical bodies involved in the creation of the plan and how they interact in order to deliver it.

The Italian legislation has integrated the Maritime Spatial Planning Directive (2014) with two laws. The first is the Legislative Decree n.201/2016. which establishes that the Ministry of Infrastructure and Transport (now the Ministry of Infrastructure and Sustainable Mobility) is the Competent Authority and establishes the Technical Committee at the Ministry, as the Competent Authority, which includes five central Administrations and the Maritime Regions.

The second, is the Ministerial Decree no.529 of 13/11/2017, as amended by Ministerial Decree no.89 of 11 March 2019 and Ministerial Decree no.263 of 27 June 2019, which governs the organization and functioning of the Technical Committee. It also set the national guidelines for the plan.

The National procedural structure sees therefore the Ministry of Infrastructure managing the Technical





committee in order to formulate a plan proposal that is then presented to the Interministerial Table with the opinion of the Conference of Regions. The approval of the Table allows the plan to become official. A SEA study is performed in parallel and will be presented to the Table as integration to the plan.



Prof. Musco (IUAV), supported by Fabio Carella and Folco Soffietti analysed the Italian plan submitted to the attention of the EC. They explained the 6 Phases in which the plan is structured and focused on phase 4, sharing the methodology followed to design the sub-areas and planning units in the three maritime areas identified by the Italian legislation







Phase 3 – Vision and Strategic Objectives



. The planning procedure was performed by consulting Regional Authorities and analysing relevant data. Uses types were assigned accordingly in Planning Units, whose design is derived from the geometry of the existing or potential uses.

The presentation was based on maps and infographics that conveyed the performed analysis and design of spatial data.



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Synoptic Infographics on planning methodology

Synoptic infographics have been created for each Maritime areas to present how the plan was created.









Foreseen events

As part of the WP 4, the foreseen events regarding the Eastern Mediterranean and the transboundary cooperation between Greece and Italy were the main topic of discussion in the second part of the meeting.

Bilateral Event GR-IT

The consultation on the Northern Ionian Sea basin, where the two countries share a common border, was addressed by reflecting on issues of common concern that could become matters of cooperation among the two nations. The identified topics were:

-Transboundary Governance,

-Maritime Transport, especially decarbonisation at Interreg Level, in regard to Blue Growth or Blue Hydrogen.

-Coastal landscape from the sea and broad seascape (from land perspective and at sea).

The latter was the one selected, ideally it would build on the Florence Convention (2000) identifying ways of applying it in regard to marine and maritime landscape.

The intention of the exchange is to reflect on public perception and find ways of using the spiritual value of land-seascape, a changing feature, by incorporating anthropogenic and natural evolution of coastal and marine landscape in MSP. This could result in enhanced protection of the cultural value while proposing new ways of using it in a blue growth scope.

Hopefully this action will be endorsed by the IOC-UNESCO, especially in regard to the Decade for ocean science in which scope, great attention is given to Ocean Literacy and the relationship between mankind and the sea.

Furthermore, cultural bodies, both public (ministries of culture, universities) and private ones could participate in the consultation.

On the Italian side the Ministry of Culture has been heavily involved in the planning and it is likely that its representatives will be interested in participating in this exchange.

Expected results could be guidelines and propositions for practical actions.





The concept of the event was agreed to be a meeting to be held in Athens towards the end of October. It should happen in a hybrid form, with an online option for those unable to attend in person.

Further design will be carried out in the coming months, a starting point will be the involvement of the cultural ministries of the two countries and the identification of experts in planning and landscape that could apport relevant contributions to the event.

Pan-Eastern-Mediterranean workshop

The event represents a great opportunity to establish fruitful collaborations in the Eastern Mediterranean where fewer (compared to the Western side where recent initiatives have taken place WESTMED, MSP Global Pilot Project) international cooperations are in place.

The GA requirements wish to involve EU Member states; Italy, Greece, Slovenia, Croatia, Cyprus and Third Countries; Lebanon, Israel and Turkey.

Among some of the referred countries there are to this day diplomatic issues that need to be taken into account in order to avoid conflicts or a toxic environment that could undermine the exchange.

Proposed topic for discussion during the meeting were the following:

-Blue transport (The area is relevant due to the presence of the Suez Canal)

-Cultural heritage

-*Climate change and sea level rise in MSP* (The topic is of great concern due to the high number of islands that insist in the area.)

The concept of the event, to be submitted to other referred countries, hence highly under discussion, would be an hybrid or online event to be held in November or December 2021.

Wrap up and Greetings

The event was closed by a recap of the next steps to undertake:

1) the creation of a concept document to be shared among partners in order to develop a proper background document for the bilateral meeting.





- 2) the onset of contacts with UNESCO, Ministries of Culture and other relevant bodies on the landscape-seascape topic.
- 3) the onset of contacts with other project partners, and relevant authorities for the Eastern-Mediterranean event.

A final reflection considered that the upcoming Steering committee, foreseen for early September 2021, could represent a good moment to present these initiatives to the full consortium.

Final greetings expressed mutual satisfaction for this exchange and coming cooperations.





Annexe VII – Bilateral Meeting IT-GR Report





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Statement on the Future of Landscape, Seascape and Underwater Cultural Heritage in MSP: Italian-Greek joint suggestions to develop a Mediterranean approach



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MSP-MED | IT-GR Bilateral Meeting 21st of June 2021, Italian Archaeological School of Athens - Athens

A Bilateral Meeting between Greece and Italy is organized to allow sharing of advancements in national MSP processes. The meeting took place back to back with the MSPMED Pan-Eastern-Med Conference on land-seascape in MSP and capitalized the results of that event, in order to identify more specific sub-topics regarding Italian and Greek shared sea.

The meeting involved the two following National Authorities:

- The **Italian Ministry of Culture**, which has been fully involved in the national MSP planning process, specifically considering the theme of Landscape and Cultural Heritage.
- The MSP Competent Authority in Greece, the **Ministry of Environment and Energy** (YPEN), who is also partner of the MSPMED project

The other attendance in the meeting was from the two MSPMED partners from IT and GR, i.e. CORILA (with IUAV) and the University of Thessaly.

The Grant Agreement requirements

The support to the cooperation among Italy and Greece in MSP is foreseen in the original MSPMED Grant Agreement, as part of **WP 4 Cooperation among Member States and with third countries**. More specifically in *Task 4.2 Establishing a solid transboundary cooperation in MSP among bordering Mediterranean Member States*, with sub-task 4.2.3 Northern Ionian Sea (GR-IT) Consultation and activities on the shared maritime area between Greece and Italy. The broad goals of these activities should:

Promote a coherent MSP Process, to address and facilitate the alignment of the governance and planning approaches.

• Identifying common issues impacting the cross-border MSP implementation in the Mediterranean and providing recommendations to eliminate obstacles and emphasize drivers.

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- Fostering concrete cooperation and sharing on MSP between both Mediterranean Member States Italy and Greece.
- Establishing cross boundary issues to improve efficiency in planning and management of coastal and marine resources and activities.
- Facilitating the harmonization of MSP procedures in Italy and Greece by identifying areas and main sectors of concerns, analyzing the critical issues and concerns for the implementation of transboundary MSP, and proposing mechanisms, instruments and planning measures for the identified areas.

The process of topic's selection

The meeting's topic has been identified in a Technical Meeting that took place in July 2021 between MSPMED's IT and GR partners.

In that occasion, three possible subjects were proposed:

-Transboundary Governance,

-Maritime Transport, especially decarbonisation at Interreg Level, in regard to Blue Growth or Blue Hydrogen.

-Coastal landscape from the sea and broad seascape (from land perspective and at sea).

The latter was selected, with the aim of addressing a matter that is usually considered only under the terms of "protection", without assessing the human beneficial influence on landscape or opportunities for blue growth.

The intention of the exchange is to reflect on public perception and to identify ways of using the spiritual value of land-seascape, a changing feature, by incorporating anthropogenic and natural evolution of coastal and marine landscape in MSP. This could result in an enhanced protection of the cultural values, while proposing new ways of utilisation in a blue economy scope.

This issue is of great relevance, for instance considering the European energy strategies, that are directed towards a strong enhancement of renewable energy production, supporting a fast expansion of offshore windfarms also in the Mediterranean Sea, whose aesthetic impact is of concern for coastal populations and institutions.

The starting point for the bilateral meeting were intended to be the results of the Pan-Eastern Mediterranean event occurred the day before in the same location. The bilateral event is the occasion to have a more focused exchange on the transboundary dimension between Italy and Greece.

Expected results were the suggestions for implementing new landscape conceptual uses and approaches into national maritime plans and propositions for practical actions, e.g. pilot projects or





partnerships with public and private stakeholders that could result in enhanced use and protection of the landscape.

Objectives of the Italy-Greece bilateral event

Greece and Italy share a millennial history of cultural and economic exchanges. They have a similar peninsular dimension that in the Greek case evolves in an archipelagic one. There is, therefore, the need to share experiences involving a land/seascape that is similar but also different, taking into account land sea interactions and insular dimensions.

The event is established to allow these two EU Member States, owing a vast cultural heritage and natural beauty, to share advancements of the respective MSP processes. Especially on main barriers to MSP implementation and transboundary MSP, in order to identify issues of common concern and sensible areas, and possible instruments to solve them.

The two countries during the event could share experiences about national policies and strategies regarding the marine/maritime landscape and cultural heritage: how is it preserved? how it helps socio-economic development (e.g. tourism/scientific research/educational programmes)? how it interacts with other uses (aquaculture, extraction platforms, shipping)? How can MSP help integration of these aspects? Can transboundary aspects be addressed jointly?

The exchange of best practices and strategies can offer an overview of the MSP topics of concern in the Ionian and Levantine seas and identify possible ways of collaboration in terms of shared knowledge or joint effort with a focus in ensuring MSP exploiting the full potential of landscape/seascape, in terms of sustainable development and ensuring its conservation. Tangible results expected are the identification of tools (e.g. shared geoportals, etc.) or proposition of framework of cooperation, for instance future European projects.

Points addressed during the IT-GR Bilateral event

MSP advancements and issues of concern

-Greek process by the Ministry of Environment and Energy (YPEN) -Italian MSP process: a landscape and UCH perspective (MIC)

Landscape/Seascape and the maritime dimension

- -Plans, issues and opportunities, Italian and Greek perspectives (IUAV, UTH)
- Underwater Cultural Heritage and MSP (HMCS)





Transboundary dimension of landscape also regarding uses and capacity building -Discussion

Programme Tuesday 21 June 2022 Bilateral Italy - Greece				
9:30	Introduction and greetings: MSPMED: Pierpaolo Campostrini (CORILA) YPEN: Evgenia Lagiou MIC: Dr Rocco Rosario Tramutola			
11.00	Coffee Break			
	HMCS: Dimitrios Kourkoumelis -Director of Ephorate of Underwater Antiquities IUAV: Prof Francesco Musco and Micol Roversi Monaco UTH: Prof Harry Coccossis			
12:30	Discussion			
13:00	Debriefing and conclusions			

Participants

MSP-MED Partners	
CORILA -IUAV-CNR	Pierpaolo Campostrini, Barbara Giuponi, Francesco Musco ,
	Maddalena Bassani, Denis Maragno, Fabio Carella, Folco
	Soffietti, Hadi El Hage.
UTH	Evangelos Asprogerakas, Panos Manetos, Harry Coccossis
	Tonia Koutsopoulou
MSP Competent Authorities	
Ministry of Environment and	Elena Lalou, Evgenia Lagiou <u>. Anna Spyropoulou.</u> Georgia
Energy (Greece)	Kotini General Director of Spatial Planning of the Ministry





Other Institutions	
Ministry of Culture (Italy)	Barbara Davidde, Rocco Tramutola, Serena Bisogno, Isabella Fera
<u>Hellenic Ministry of Culture</u> and Sports	Dimitrios Kourkoumelis, Director of Ephorate of Underwater Antiquities

Minutes

The event is introduced by the Project Coordinator Pierpaolo Campostrini, who briefly summarizes the results of the Pan-Eastern event (that took place the day before). The Mediterranean basin, in reason of its history and culture, is the ideal place to propose a specific "Cultural-Based Approach" to MSP, which can be considered a complement to EBA. Italy and Greece, presenting on their territories and waters, sites and features recognized for their value and considered often World Heritage, have in some sense a "moral obligation" to promote this approach, with the aim of having positive impacts on both the societies and the environment. This approach should be able to consider also the new uses of the Sea and can become a factor of sustainable development for the whole Mediterranean basin.

The evolution of the landscape concept has to be taken into account. There is a urgent need to "plan the landscape", that can be performed without putting at any risk the cultural heritage, but including the "new uses" (e.g. windfarms, aquaculture, etc.) in a proper way, establishing new paradigma and useful regulations.

The identification of key features for landscape protection and future steps for including these concepts in MSP processes are the main objective of the day.

Giving the fact that the previous day presentations were already provided, the meeting proceeded with interventions from the participants, offering elements for reflections.

Harris Kokkosis (UTH) stated that Landscape is embedded in Mediterranean culture and is an element of support that has been present throughout history. Something that is part of the Mediterranean way of living. It presents specific characteristics. It is very important to consider how we can use the landscape as a framework to enhance the opportunities for blue growth and to explore ways to counter the different kinds of crises.

There is an opportunity of using landscape protection and management as a solution that can be implemented in natural contexts, but can also act as an urban solution. Eventually, it





can represent a way to facilitate the incorporation of the new uses of the Sea. Greece and Italy are in a position to take the initiative to lead this process.

There may be an interest in integrating landscape into MSP, a capacity level to deal with growth and protection.

The present is an opportunity for the Ministry of Culture of Greece and the Ministry of Culture of Italy to informally discuss, in a sort of brainstorm. MSP can be considered, in this context, as a tool to launch new considerations.

The present meeting can lead to the creation of an index for a potential agreement to cooperate for doing specific activities, experimenting the management and the integration of landscape and all its perspectives.

Some of the questions to be answered are: how landscape will be managed and included in the maritime spatial plans and how can maritime spatial planning contribute to that? This, of course, including underwater archaeology and the new underwater museums?

How can MSP contribute? Is really MSP a tool to enhance further considerations on the Landscape?

- 1- Scale is one issue to consider. Regional, national, supranational, Mediterranean.
- 2- Explore the different perspectives and experiences (land to sea, sea to land...).
- 3- Consider the opportunity for synergies of different uses.

Considering the Cultural Heritage aspect of this issue:

The two countries IT and GR have a long history and long-lasting cooperation. The Italian Archaeological school in Athens (where we are) it is a clear example of it. Cultural Heritage is a real identity asset in Greece as well as in Italy.

Identity and cohesion mean a high social value of this feature.

Considering the political aspects of this issue:

Dimitrios Kourkoumelis pointed out that Exclusive Economic Zones in the sea between Italy and Greece are going to be set. The new frontiers between Italy and Greece have been established recently and the connections between the areas are well in place. Italy and Greece already have a strong collaboration. Connection with Italy is strong. (e.g. Sicily gave back a piece of the Parthenon to Greece just recently).

International cooperation – how can "seascapes" help in that context? Not only the cultural part, since the future and the exploration of the economic zones will be crucial in every state (gas, pipelines, and all...).





Another point of reflection is how to incorporate both tangible and intangible elements in the plans. A solution could be the Landscape Character Assessment, a reference to what has been performed by the British MMO was made by Hadi El Hage (IUAV). MMO mapped what people perceived in coastal areas, creating a map that has identification zones. So far, this approach has not been investigated by Mediterranean EU Member States.

Maddalena Bassani pointed out that the Code for cultural heritage and landscape in Italy builds on specific definitions, it is important to clarify the distinctions between cultural landscape and underwater heritage.

The attendees consider that it is important to consider the legal point of view, too, and therefore to compare the existing legislations. The latest version of the Code in Greece is from 2021, hence, quite updated.

Evgenia Lagiou and Anna Spyropoulou wandered how to incorporate underwater cultural heritage in landscape and seascape - find the balance in the protection and in the incorporation of it in the sustainable blue economy.

A first suggested step was to identify and explore already possessed data - quite a challenge in reality.

Ministries of Cultures pointed out that as planners it is beyond the cadasters.

Furthermore, there is the issue of natural landscapes which is linked with cultural landscapes to protect. How do you protect and enhance the landscape? Especially with upcoming offshore wind farms?

Isabella Fera and Rocco Rosario Tramutola reported a few assets of the Italian territory that might be of interest.

In Italy there is what can be identified as "Bad heritage" caused by the building boom of the 1960s, resulting sometimes in towns without cultural or touristic value. Brownfield regeneration could also be considered.

From the Greek side it was reported that in Greece, coastal populations usually don't like having the aquaculture /offshore wind farms.

But the landscape is dynamic and offers an opportunity to enhance MSP. A concept to bring together different aspects, to incorporate the upcoming change.

Results: Joint Statement

After the sharing of remarks from different participants, an open discussion to establish key points took place, facilitated by Folco Soffietti (IUAV). As result, a joint statement was issued





with the aim of contributing to the development of a Mediterranean approach in the integration of Landscape, Seascape and Underwater Cultural Heritage in MSP. The integral statement is proposed in the following pages. The statement is intended to help the development of MSP in the shared sea and enabling the efforts of EC in promoting a sustainable use of marine resources.

Essential references

Directive 2014/89/EU establishing a framework for maritime spatial planning

The Communication from the commission to the European Parliament [...] for a sustainable blue economy in the EU, COM/2021/240 final

2021 Union for the Mediterranean (UfM) Ministerial declaration on Sustainable Blue Economy

UNESCO World Heritage Convention (1972)

Council of Europe Landscape Convention (2000)

European Commission (2021). The EU Blue Economy Report. 2021. Publications Office of the European Union. Luxembourg

Ocean-climate. org, Marine and Coastal ecosystem services. [Accessed 21/07/2022]

Assistance Mechanism for the Implementation of Maritime Spatial Planning. Kyvelou Stella Sofia, Henocque Yves, McDougall Chris (Ed.) (2021), *How to incorporate Underwater Cultural Heritage into* Maritime Spatial Planning: Guidelines and Good Practices. Publications Office of the European Union. Luxembourg







Statement on the Future of Landscape, Seascape and Underwater Cultural Heritage in MSP: Italian-Greek joint suggestions to develop a Mediterranean approach

The Italian-Greek bilateral meeting taking place in the framework of the project MSP-MED, Towards, with the participation of the representatives of the Italian Ministry of Culture, the Hellenic ministry of Culture and Sport, the Hellenic ministry of Energy and Environment with the objective of identifying issues of common concern and opportunities regarding MSP in the transboundary sea has resulted in the following joint statement:

Considering the results of the Pan-Eastern Mediterranean Conference that took place in Athens on the 20th of June, that allowed the sharing of knowledge and best experiences between EU Member States and Non- EU Countries of the Eastern shore of the Mediterranean;

Considering the cultural specificity of the Mediterranean, the meeting aimed at identifying possible innovative ways of using landscape as a framework for blue sustainable development that may help facing current and coming challenges (e.g. shortage of energy, climate change adaptation, blue growth);

Considering the world-recognized importance of the cultural heritage present in the Mediterranean region, of which Italy and Greece are part;

Considering the relevance of landscape and cultural heritage as part of the social identity of regional and local communities;

Considering the legal framework established by the Council of Europe Landscape Convention (ETS No. 176) in Florence 20/10/2000, the Land-Sea Interactions recommendations as mentioned in the MSP Directive (2014/89/EU), the national legislations of the two countries: the Italian Legislative Decree No. 42 of January 22, 2004, Code of Cultural Heritage and Landscape, as Mandated by Article 10 of Law No. 137 of July 6, 2002 (L.D. No. 42), the Greek Law 3028/2002"On the Protection of Antiquities and Cultural Heritage in general" (Government Gazette 153/A/28-6-2002) in matter of underwater cultural heritage, Law 3827/2010 "Ratification of the European Landscape Convention (Government Gazette 30/A/25.2.2010)";

Considering the long-established cooperation and the strengthening of the existing relationship between the two countries offered by the recent signing of the agreement on national EEZ;



Considering the common interests for the protection and the enhancement of the cultural heritage in its tangible and intangible values, that are essential components of landscape and seascape;

Considering the relationship between the cultural heritage and the biodiversity of the landscape;

Considering the importance of landscape and seascape peculiarities that can be recognized at the local and the regional scale;

Considering the importance of the scenic and panoramic values of the land-sea inter-visibility relationship and the preservation of the open sea horizon against the coastlines with historical habitation and tourism as a unique and valuable resource that justifies the attractiveness of the living environment of coastal and island areas.

The participants identified:

-The necessity to integrate Landscape and Seascape as main considerations in maritime policies and MSP, given the usefulness of MSP as a tool to enhance and protect landscape and cultural heritage.

-That Landscape offers an important common framework to enhance the potential of MSP in addressing current and future challenges identified by the MSP Directive.

-The necessity to recognise a Mediterranean approach to MSP, which takes into account the regional specificities in LSI regarding Landscape and Seascape (coastal, insular, peninsular, wetlands, lagoons etc.).

Therefore, they suggest to explore the possibility to integrate the following points:

- Enforce and strengthen collaboration at institutional and scientific level. Exploring possibilities of capacity building, social awareness and communities of practice regarding landscape and seascape in MSP.
- Explore the necessity to enhance knowledge (data collection and data management) to further integrate landscape and cultural heritage in MSP.





- Explore the possibility to share and valorise knowledge via existing and innovative tools (guidelines, indicators, assessments, etc.).
- Seek collaborations, strategies and common targets in terms of protection and enhancement of land and seascape as well as cultural heritage in MSP.
- Recognize the tangible and intangible values, related to identity-definition, of landscape-seascape and cultural heritage in order to protect, valorise and promote/increase them.
- Explore the possibility of integrating these tangible and intangible assets into policy tools, such as a cultural assessment and land-seascape character assessment that can support MSP.
- Recognize the importance of considering the following peculiarities of Landscape and Seascape in MSP:
 - Spatial scales: Transboundary, National, Supra-regional, Regional, Local, Sites
 - Temporal scales: Day-Night, Seasonal, Short-Long term.
 - Perceptions: Land to Sea, Sea to Land, Sea to Sea, Underwater.
 - Values: Environmental, Economic, Cultural, Social, Spiritual.
- Strengthen the communication at national, bilateral and Mediterranean level to raise awareness among local populations on the necessity to protect and enhance the marine and maritime landscape and cultural heritage.
- Suggest EC DG Mare to realize specific initiatives on landscape/seascape, also in cooperation with the Council of Europe and other EC Directorates (e.g. DG EAC, DG ENV, DG RTD) dedicated to the Member States' MSP competent authorities and to the Member States' authorities in charge of Landscape Convention application (e.g. the Ministry of Culture for Italy and the Ministry of Environment and Energy for Greece).
- Explore the possibility to consider the opportunity to include Maritime Spatial Planning as a subject in the Symposium on the implementation of the Council of Europe Landscape Convention, in order to promote the tools to enhance and manage Landscape and Seascape.

Athens, Greece 21st of June 2022.



Participants:

Evgenia Lagiou, Hellenic Ministry of the Environment and Energy Elena Lalou, Hellenic Ministry of the Environment and Energy Anna Spyropoulou, Hellenic Ministry of the Environment and Energy Dimitrios Kourkoumelis -Rodostamos Deputy Director of the Ephorate of Underwater Antiquities, HMCS Harry Coccossis, Professor Emeritus, University of Thessaly Rocco Rosario Tramutola, Italian Ministry of Culture, Head of Landscape Protection Isabella Fera, Italian Ministry of Culture Pierpaolo Campostrini Director of CORILA Barbara Giuponi, assistant to the Director, CORILA Francesco Musco, Head of Research University Iuav of Venice Maddalena Bassani, Professor of Classical Archaeology, University Iuav of Venice Denis Maragno, senior researcher, University Iuav of Venice Fabio Carella, PhD student, University Iuav of Venice Folco Soffietti, junior researcher, University Iuav of Venice Hadi El Hage, junior researcher, University Iuav of Venice





Annexe VIII NORTHERN ADRIATIC SEA

SL-IT Bilateral Workshop Report





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MSPMED Bilateral Meeting 4.2.4 Northern Adriatic Sea: Slovenia-Italy 21st of September 2022

Manzioli Palace, Manzioli Square 5, Izola, Slovenia

Introduction

Bilateral Meetings are foreseen as part of WP4 in sub task 4.2 Establishing a solid transboundary cooperation in MSP among bordering Mediterranean Member States.

As stated in the MSPMED Grant Agreement, transboundary/cross-border cooperation and collaboration in MSP is essential to improve the efficiency of planning and management of coastal and marine resources and activities, facilitating the decision-making processes. The transboundary methodological components of MSP are necessary to overcome barriers and obstacles for its implementation (e.g. conceptual barriers, institutional barriers, geopolitical impediments).

To facilitate the harmonization of MSP procedures of MS in the Mediterranean, this task will focus on transboundary dialogue on common objectives and transboundary planning on selected areas and selected sea uses. Throughout the task's framework, these aspects will be assessed and capitalized during different programmed activities in selected areas, that have been identified by the partnership:

• 4.2.1 Gulf of Lion (FR-SP) Consultation/seminar/workshop activities on the shared maritime area between France and Spain.

• 4.2.2 Tyrrhenian Sea (IT-FR) Consultation/seminar/workshop activities on the shared maritime area between France and Italy.

• 4.2.3 Northern Ionian Sea (GR-IT) Consultation/seminar/workshop activities on the shared maritime area between Greece and Italy

• 4.2.4 Northern Adriatic Sea (SL-IT) Consultation/seminar/workshop activities on the shared maritime area between Slovenia and Italy.

• 4.2.5 Central Ionian (IT-MT) Consultation/seminar/workshop activities on the shared maritime area between Malta and Italy.





This working document will focus on 4.2.4 Northern Adriatic Sea (SL-IT) consultation between Slovenia and Italy.

The proposed structure that will follow takes into consideration the methodology stated in the GA and structured around three main axes:

a) Transnational priorities regarding MSP implementation (identifying areas and main sectors of concern);

b) Analysis of the main criticalities/issues and concerns for the correct implementation of transboundary MSP;

c) Proposals of mechanisms, instruments and planning measures for the identified areas.

What was addressed during this event

The event was considered as an occasion to share national concerns regarding some of the key uses occurring in the area, namely tourism and maritime transport, and their interactions with ecosystems/biodiversity protection and other maritime uses.

The Slovenia-Italy transboundary area is of relevance for its environmental aspects and economic value, as reported for example by the UNEP MED Action Plan document of 2015. The area is an important foraging and overwintering habitat for the loggerhead turtle, and a key habitat for pelagic sea birds, including the rare European storm petrel. Furthermore, various species of cetaceans are present in the area, with different densities. Anthropic pressures due to activities such as tourism, fishing and maritime traffic may, however, impact this biodiversity. Moreover, Important bottom habitats (e.g. Coralligenous, Posidonia meadows, etc.) are threatened by mooring and other human pressures.

Several protection measures are in place (Marine Protected Areas, Natura 2000 sites) in respect to the Habitats Directive (92/43/EC), and the Birds Directive (2009/147/EC). MSP can help reduce environmental impacts, support full implementation and expansion of protection measures as well as underpin possible synergies between blue economy and environmental protection objectives

Coastal and cruise tourism are recognised as important economic and development factors in the North Adriatic. Maritime traffic of goods in the area is intense, since important port cities such as Trieste, Venice and Koper are located in the area. Governments have signed series of agreements in order to establish an IMO's Traffic Separation Schemes/Recommended Routes system in the Adriatic Sea, to enhance the safety of navigation and the protection of the marine environment, facilitating the movements of the vessels and supporting SAR and oil pollution response operations. Also in this case, MSP can play a major role in supporting the establishment of these and other spatial measure, ensuring that conflicts and synergies with other marine protection and other uses are optimized.





The event will be a moment to share national experiences of plan implementation of these topics, and frame them in future broader cooperation strategies, as in particular the EU Strategy for the Adriatic and Ionian Region (EUSAIR, in regards to Pillar 1: and Blue Growth and Pillar 3: Environmental Quality), the Italy-Slovenia Interreg program, the Mission Starfish 2030 and the Global Ocean Alliance 30by30.

Topics that will be addressed in the event include:

- relevance of tourism and maritime transport in the area within the Slovenian and Italian MSP processes and in relation to MSFD implementation,
- evidence-based concerns about interactions among maritime uses (e.g. tourism, maritime transport, and other relevant uses in the area) and between maritime uses and environmental protection in the area,
- analytical tools to support impact and conflict analysis in MSP,
- possible common initiatives fostering the coexistence between tourism, maritime traffic and marine ecosystems and biodiversity protection in the area.

Participants

Project partners: RRC KOPER, CORILA, CNR, IUAV

Contemplated institutional stakeholders to be involved, in addition to the project partners:

Italy

- Ministry of Infrastructures and Sustainable Mobilities
- Veneto Region
- Friuli Venezia Giulia Region
- Autorità di Sistema Portuale del Mare Adriatico Settentrionale
- Capitaneria di Porto Guardia Costiera Comando DIREZIOMARE Trieste
- Capitaneria di Porto Guardia Costiera Comando DIREZIOMARE Venezia
- Ministry of International Cooperation
- Miramare MPA
- OGS

Slovenia

- Kapitanija Koper
- Ministry of the Environment and Spatial Planning
- Planning, Construction and Housing Directorate
- Municipalities of Ankaran, Koper, Izola, Piran
- Ministry of Infrastructure, Department of Maritime affairs,
- Morigenos Slovenian marine mammal society
- Institute of the Republic of Slovenia for Nature Conservation
- National Institute of Biology, Marine biology station Piran
- University of Ljubljana, Faculty of Architecture
- Science and Research Centre Koper





- Institute for water of the Republic of Slovenia
- Krajinski park Strunjan
- ZAVITA d.o.o

EUSAIR Representatives

• Iztok Skerlic, Eusair Facility Point

Programme

	Programme
10:00	Introduction and greetings by Slavko Mezek (RRC)
	CORILA – MSPMED general results (10 min) Folco Soffietti (IUAV)
	RRC Koper – MSPMED in Slovenia (10 min) Slavko Mezek
10:20	Presentations moderated by Folco Soffietti
	Slovenian Ministry of the Environment and Spatial Planning The Slovenian MSP plan, implementation and transboundary dimension with a focus on maritime transport and coastal tourism (25 min) Lenca Humerca – Solar MSP in Italy: a focus on Veneto and EVG Begions
	The litelies MOD shap is the Ashietic with former an anality of the second states and the second states and the second states and the second states and the second states are second are second states are second ar
	tourism
	- Introduction on the Italian MSP process Emiliano Ramieri, CNR-Ismar (5 min)
	- MSP in the Veneto Region (10 min) Salvina Sist
	- MSP in Friuli Venezia-Giulia Region (10 min) Maria Pia Turinetti
	Break (10 min)
11.20	Session of presentations and discussions introduced by Martina Bocci and moderated with in collaboration with RRC Koper on:
	11:20 - 1 - impacts and conflicts/synergies
	Topics for discussion
	- evidence-based issues related to maritime transport and coastal and maritime
	conflicts/synergies with other uses
	Guiding Panelists:
	Sasa Raicevich (ISPRA)





	Peter Mackelworth (Blue World Institute)
	 11:50 - 2 Tools to support impact and conflict/synergy analysis in MSP Topic for discussion analytical tools to support impact and conflict analysis in MSP Presentations by CNR/ISMAR; OGS, Slovenian Ministry of Environment. TBC Guiding Panelists: Donata Canu (OGS) Stefano Menegon (CNR-Ismar)
	 12:50 - 3 Discussion on opportunities for transboundary cooperation Topics for discussion future initiatives fostering the coexistence between maritime traffic, coastal and maritime tourism, marine ecosystems and biodiversity and other maritime uses transboundary initiatives + discussion Guiding Panelists: Federico Rosset (Veneto Region) Iztok Škerlič
	13:20 Conclusions and keynotes: Slavko Mezek
14:00	Lunch

Participants

MSP-MED Partners						
CORILA -IUAV-CNR-OGS	Folco Soffietti, Martina Bocci, Emiliano Ramieri, Hadi El Hage,					
	Donata Canu, Stefano Menegon					
RRC Koper	Slavko Mezek, Mitja Petek					
MSP Involved Authorities						
Ministry of Infrastructures and Sustainable Mobilities	(Mandate gave to MSP-MED partners)					
Ministry of the Environment and Spatial Planning	Lenca Humerca Solar					
Ministry of Infrastructure, Directorate of Aviation and Maritime Transport	Zarko Pregelj					
Veneto Region	Claudio Chiapparini, Federico Rosset					
Friuli Venezia Giulia Region	Maria Pia Turinetti					
ISPRA	Sasa Raicevic					
Other Institutions						
Krajinski park Strunjan	Marko Starman					





National Institute of Biology Marine biology station Piran	Vesna Flander Putrle
Municipalities of Ankaran, Koper, Izola, Piran	Iztok Skerlic
Science and Research Centre Koper	Liliana Vizintin
Institute of water of the RS	Saso Santl, Helena Caserman
Morigenos Slovenian marine mammal society	Tina Centrih Genov
University of Ljubljana, Faculty of Architecture	Ljudmila Koprivec
Institute of the Republic of Slovenia for Nature Conservation	Tina Centrih Genov
Capitaneria di Porto Guardia Costiera Comando DIREZIOMARE Trieste	Salvatore Amenta
Capitaneria di Porto Guardia Costiera Comando DIREZIOMARE Venezia	Antonio Frigo
Eusair Facility Point	Iztok Skerlic
Blue World	Peter Mackelworth
Expert	Manca Plazar
ZAVITA d.o.o	Klemen Strmšnik

Bilateral Meeting minutes

Slavko Mezek (RRC Koper)

Slavko Mezek made the introductory remarks and welcomed all the guests attending in person in Isola, Slovenia. Folco Soffietti (IUAV) was also assisting Dr Mezek in the introduction and in the moderation of the entire bilateral meeting.

Folco Soffietti (IUAV)

Folco Soffietti started his presentation by giving an overview of the MSPMED project during the entire period of the project. The overarching objective of the project is to facilitate the MSP Directive implementation, by supporting the establishment of coherent and coordinated maritime spatial plans across the Mediterranean Region. At national level, the actions of the project concur in creating better coordination between national and regional authorities, thus enhancing the efficiency of national plans. The knowledge shared among countries during meetings will produce, in a whole, a more harmonised way of approaching MSP in the Mediterranean.

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Folco Soffietti outlined the different work packages and the current advancements of the project and the results so far:

- Support to the 6 National Plans, in different forms, e.g. datasets and map creations, stakeholder involvement.
- >10 meetings and events with national stakeholders
- 5 Technical Workshops on Key Enabling Factors for MSP
- Social media campaigns and dissemination material to raise awarness on MSP in the Mediterranean and Ocean Literacy, participation in events and1 joint event with MSP Platform on Marine Multi-use in the Mediterranean
- Transboundary cooperation for the identification of common issues and creation of data tools

1 Trilateral Event on Ramogepol Area: France-Italy-Monaco, bilateral Italy-Greece, Pan Eastern event, bilateral meeting Spain-Morocco, Trilateral Italy-France-Spain.

The main findings so far are a contribution to a common planning approach with broader harmonization consequences on very different coasts and waters that share, however, a great number of similarities and shared cross-border issues (e.g. cultural heritage, touristic flows, pollution, environmental risks etc.)

Mr Soffietti concluded by mentioning the bilateral meetings purposed, as it was stated in the MSPMED Grant Agreement, transboundary/cross-border cooperation and collaboration in MSP is essential to improve the efficiency of planning and management of coastal and marine resources and activities, facilitating the decision-making processes. This bilateral meeting between Italy and Slovenia has objectives to identify issues of common concern in the area and possible joint solutions; exchange information that may ease the implementation of national plans; enhance transboundary communication; foster synergies between planners and authorities; promote and reinforce international cooperation mechanisms between the 2 countries of Italy and Slovenia.

Slavko Mezek (RRC Koper)

Dr Mezek explained Slovenia's approach to the MSPMED approach and its main characteristics, which stem from the fact that Slovenia has already completed the process of preparation and adoption of the MSP in the course of project implementation. The Slovenian partner has coordinated the content in agreement with the Ministry of Environment and Spatial Planning (Directorate for Spatial Planning, Construction and Housing), the MSP competent authority.

WP2 - Setting up of maritime spatial plans

The main focuses of the WP2 were: formulation of the development vision and objectives for Koper bay coastal strip, the spatial development concept, (elaborated more in detail for the Koper – Isola coastal strip), and elaboration of elements for the Regional development program, with the list of proposed future projects on the coast.





Mr Mezek shared the entire work process – as seen in the figure below:



The preparatory activities and the analysis of the area lead to the formulation of the vision, the formulation of priorities and goals, and then the concept of the spatial development of the coastal strip subsequently and the programme concept for the Koper-Izola coastal strip. The activities done in Slovenia included online workshops in 2021 on the development vision of Koper Bay.

The elements of the vision for the spatial development of the coastal strip along the Bay of Koper, were defined taking into account the national strategic documents, the Maritime Spatial Plan and in views of local stakeholders. The vision was formulated as:

The Coastal Strip is the foundation of the quality of life and identity of the area, an area of green spaces, landscape, nature and cultural heritage, that is traffic-free, an area for sports and recreational activities, coexisting with urban centres, the port and tourism, co-managed by key stakeholders.

Based on the vision, the following objectives for the spatial development of the coastal strip have been defined:

- Ensuring the protection of nature, cultural heritage and coastal landscapes;
- Reducing car traffic in the the coastal strip,
- Improving the conditions for sustainable recreation and sports;
- Developing a commercial port in harmony with local communities,
- Establishing participatory coastal strip management.

One of the purposes of the task was to demonstrate how to approach spatial planning of the narrow coastal strip in the context of spatial planning at municipal level, based on the parent document - the Slovenian Maritime Spatial Plan.

In the framework of WP2 Slovenian partners prepared: :





- a conceptual plan for the development of the coastal strip between Lazaret (Italian border) and Izola (Jadranka).

- a draft programme concept for the coastal area between Koper (Žusterna) and Izola, as an expert basis for the preparation of the spatial planning acts for the Koper-Izola coastal strip, which the municipalities are working on together in a coordinated effort.

- a proposal for spatial development programme for the Bay of Koper (as a basis for the preparation of the content of the Regional Development Programme of the Coastal–Karst Region 2021-2027).



WP2 – Setting-up of maritime spatial plans

WP3 - Data use and sharing:

The work was focused on the 3 key tasks in the implementation of the MSP.

The first one was Identifying the competences and tasks of the local communities coming from the provisions of MSP Slovenia:

A number of tasks were identified. These tasks include the preparation of various required expert documents in the procedures for the drafting of municipal spatial planning acts, action plans and individual spatial interventions. The competent spatial planning authorities will impose on the municipalities which expert documents they have to prepare in the individual environmental assessment procedures (Comprehensive Environmental Assessment (CEA), Environmental Impact Assessment (EIA)).

MSP subsections 2.10 Tourism, sport and recreation and 2.12 Urban development also describe the spatial and managerial measures within the competence of the local authorities. These subsections stipulates that the municipalities are required to examine inter alia the cumulative load on the environment at least for the area of the entire coast in an individual municipality as part of drafting of implementing acts.





A comprehensive analysis of available data (related to local MSP needs) was prepared. We can conclude that a very large amount of data are available at different levels and with varying degrees of accuracy. The potential shortcomings or limitations are in keeping them up to date, as many of these data layers were created for a specific purpose over a specific period of time. State-managed data (e.g. GURS) are the most reliable in terms of relevance. These include the various cadastres used by local authorities. Furthermore, it can also be noted that although all available data do exist, knowledge of them among stakeholders involved in the planning and programming process may be somewhat insufficient.

Despite all this, new facts about space and the processes that take place in it are constantly emerging in the course of spatial planning and design. The Slovenian sea and coast are currently facing challenges mainly in relation to the regulation of tourism and the supply (catering, accommodation, etc.) and transport requirements associated with it. There are some data gaps in this area, both in terms of beach capacity assessment, public transport capacity and other data related to the production of a carrying capacity assessment.

The second task was Establishing a synthesised database for bathing areas: to establish a database (of all bathing sites) and to calculate their respective capacities, a synthesised list of the bathing sites was drawn up on the basis of official records and, additionally, in cooperation with all the coastal municipalities, their location and size (in m2) were defined. The m2 / bather formula is used to calculate the capacities.

The capacity of bathing sites and beaches was calculated according to the Rules for protection against drownings, which provide for a bathing area of 7m2 / bather. The actual capacity of a bathing site or beach area depends on the beach type (urban, natural) and the expected level of privacy, natural vulnerability, morphology (rocky, concrete, sandy beach), the provision of bathing infrastructure and other factors.

	Ankaran			City Municipality of Koper			Izola			Piran			TOTAL		
	numb er	surface area (m2)	no. of bathers m7/2	numb er	surface area (m2)	no. of bathers m7/2	numb er	surface area (m2)	no. of bathers m7/2	numb er	surface area (m2)	no. of bathers m7/2	numb er	surface area (m2)	no. of bathers m7/2
A: bathing sites with bathing w./water permit	2	11982. 0	1711.7	2	17087. 5	2441.1	3	8354.8	1193.5	10	120843.5	17263.3	17	158267. 8	22609. 5
B: other bathing sites	7	43204. 6	3570.0	2	41109. 8	5180.8	8	34794. 8	3851.6	12	55773.7	7632.6	29	174883. 1	20235. 0
total	9	55186. 6	5281.7	4	58197. 3	7621.9	13	43149. 7	5045.2	22	176617.2	24896.0	46	333150. 9	42781. 9

Table: Bathing sites capacity per municipality and in total.







The third task was Establishing a synthesised database for transport infrastructure (parkings) and public maritime transport infrastructure (ports, piers).

The analysis focused on car parks within the 300 m coastal zone, which are deemed to provide sufficient parking capacity to support all bathing sites. During the course of this process, it was found that in addition to the car parks within the 300 m corridor in question, there are several other parking areas (within a reasonable distance) which the local communities also consider to have potential for providing parking to bathing sites, and which have therefore been taken into account.



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Lenca Humerca – Solar Slovenian Ministry of the Environment and Spatial Planning

Dr Humerca Solar's presentation was about the preparation, implementation and transboundary dimension with a focus on maritime transport and coastal tourism. The responsible authority in Slovenia for the implementation of the MSP directive is the: Ministry of the Environment and the Spatial Planning – Construction and housing directorate.

She reminded the audience about the legal frameworks for MSP including the Directive, the proptal for ICZM. The planning area for Slovenian MSP encompasses the territorial sea and the internal waters of the Republic of Slovenia and the coastal strip. The territorial sea encompasses the sea between the baseline and the state border of the republic of Slovenia at sea (maritime border).

The coastal strip has been determined taking into account the Article 8 of the Barcelona convention by the portal of ICZM protocol. The coastal strip encompasses the marine and the land parts. The marine part of the coastal strip is 150 metres from the coastline towards the sea. The coastal strip on the land encompasses at least 100 metres wide coastal reform the boundary of the coast towards the land.



Planning Area

The planning area is relatively small. All the different activities already existed before the starting of the plan. There are a lot of protected values that should be protected for the future and should be kept.





In terms of previous activities: The preparation of the plan started 20 years ago while working with different projects. The cartographic information and geoinformatic basis for the MSP – databases were already created and served for today's purposes.

MSP is a strategic document. Before the building of the project, many steps should be followed. The document provides the spatial development guidelines for activities and use in the Slovenian sea and the coastal strip on land. The purpose of the MSP is to coordinate the existing and planned activities and usages at area and in the coastal strip at land. The MSP determines the objectives and guidelines for further development of activities and use at sea in a manner that will attain sustainable spatial development, sustainable growth of maritime economics, sustainable development of maritime areas and sustainable use of sea resources.

The different activities – Preparation and adoption process:

- Starting points and key objectives (published on the website, June 2019)
- Decision on the need to carry out SEA (screening, Dec 2019)
- Draft of the Maritime Spatial Plan and Environmental Report
- Opinion on the adequacy of the environmental report, Dec 2020)

Public debate on the Draft of the Maritime Spatial Plan and Environmental Report (from 28.12.2020 to 28.2.2021; documentation also published on website)

Drawing-up the Maritime Spatial Plan, considering results of SEA and ER and opinions obtained during public debate (Feb to May 2021)

Opinion on the acceptability of the effects of the plan, plan confirmation (8. 6. 2021)

Decree on the Maritime Spatial Plan of Slovenia (15.7.2021)

The concept of the spatial development of the planned area. There are some detailed maps that cover all the entities and the uses that described in the Directive ex: the maritime transport areas, the nature protection areas, the activities on the sea. [insert photo]







SEA of the Maritime Spatial Plan of Slovenia

- Long-term sustainability and the environmental effects were the focus in the SEA .
- The objective of the SEA was to integrate environmental aspects in the planning process.
- Within the **scoping** phase, it was assessed that the implementation of the MSP could have potentially significant impacts on:
 - the marine environment and nature,
 - water use,
 - occurrence of accidents,
 - human health and quality of living conditions,
 - cultural heritage and
 - landscape qualities.
- Potential **impacts** were assessed based on the extent of changes of indicators of the state of the environment, the degree of compliance with the conservation objectives or other evaluation criteria, the state of the environment, the protection of natural resources or natural values, the characteristics of population and to human health.

Cross border consultation:

• Slovenia is an integral part of the Adriatic-Ionian region, in which cross-border cooperation is implemented as part of the macro regional strategy of the EU.





- Cross-border consultation was performed according to the Protocol on Strategic Environmental Assessment to the Convention on Environmental Impact Assessment in a Transboundary context (ESPOO).
- Cross-border consultations with neighbouring countries Italy and Croatia.
- Cross-border impacts of the Maritime Spatial plan of Slovenia to neighbouring countries Italy and Croatia will be non-significant.

Maritime Spatial Plan of Slovenia:

The implementation of the Maritime Spatial Plan is monitored with regard to the efficiency indicators for the implementation of the plan and with regard to the marine environment quality descriptors.

The effectiveness of the Maritime Spatial Plan is monitored by means of indicators defined on the basis of planned activities and envisaged measures. The system of spatial indicators should be determined in greater detail.

- 1. The working group for the implementation of the MSP was established 6 months after the adoption of this plan.
- 2. An inter-municipal service of the Istrian municipalities is established with the purpose of coordinated implementation of the MSP at local level.
- 3. The report on effective coordination of all relevant stakeholders and activities at sea with the provisions of the MSP will be prepared every 4 years.

MSP in Italy: a focus on Veneto and FVG Regions

Emiliano Ramieri (CNR – ISMAR)

Dr Ramieri gave an overview of the Italian MSP process. He started his presentation by explaining about the governance of the MSP Process and the 2017 guidelines that provided the guidelines of the implementation of the MSP in Italy. This has been done by an inter-ministerial committee (11 ministries coordinated by Presidency of the Council of Ministers); by a technical committee (5 Ministries, 15 Maritime Regions, Observers, and Experts); Competent Authority (MIMS): Coordinates the TC, approves the Plans (after consulting the State-Regions Conference

The Maritime Spatial Plan of Italy is strategic, providing guidance on how the sea should be used. It is legally binding, as it integrates and harmonizes present and future plans and is divided into three parallel and coordinated processes a plans, in the three maritime areas: Adriatic, Ionian-Central Mediterranean, Tyrrhenian-Western Mediterranean

- Section 1 Initial assessment and current and expected trends
- Section 2 Analysis of interactions among uses and impacts on environmental components
- Section 3 Vision and strategic objectives
- Section 4 Strategic planning

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Section 5 - Methodology and indicators for monitoring and adapting the Plan
 Section 6 - Activities for the consolidation, implementation and updating of the Plan

The vision is translated in 42 strategic objectives that deal with 3 cross-cutting principals (Sustainable Development, Ecosystems and Biodiversity, Landscape and Cultural Heritage) and 8 sectors/themes: Safety, Security & Surveillance, Fishery, Aquaculture, Maritime Transport, Energy, Coastal Defense, Coastal and Maritime Tourism, Research & Innovation.

The Multi-Scalar Approach to Spatial Planning includes the division into 3 Maritime Areas (Adriatic, Ionian-central Mediterranean, Tyrrhenian Western Mediterranean).

There is a main focus on the Northern Adriatic Sea in this Bilateral meeting with Slovenia. The Adriatic Sea consist of 9 Sub Areas and 86 Planning units. Each planning unit is categorised in different uses: General, Priority, Limited, and Restricted Use.



This below info graphic gives an idea about the employed methodology for planning the maritime area Adriatic.

The Adriatic plan considers all the 11 sectors - with the identification of the

How do we deal with conflict and with synergy that are defined both at the national and the subnational level that are basically developed as points of coexistence that foster the convocation of each planning unit.

The planning unit running along the coast 2 nautical miles is considered a priority element for tourism development. Another planning unit is considered as a priority use due to the presence of gas / energy. There is the limited planning typology

The start of the Process, the SEA coping phase took place in March 2022. He plans and the SEA consultation that took place on September 15. The plan's approval is not easy to define. But this was imagined in early 2023.

Claudio Chiapparini (Spatial Planning Department of the Veneto Region)

On behalf of the Arch. Salvina Sist, Director of the Spatial Planning department of the Veneto Region that coordinates the territorial waters in Veneto Region. Claudio Chiapparini explained the main uses of the sea and the coastline through the map (as shown below)

(:::)	Borders sub-area A/2
	Maritime traffic separation schemes - TSS
	Simplified martime traffic
	3NM line from the coast
	ZTB areas
	Acquaculture concessions
0000	Simplified fishing effort [Log10(fishing h)]
	Nature 2000 areas
	pSIC area - being established
-	Relict sand deposit (engines)
	LNG regasification unit and security area
—	Power lines

The main uses of the sea in the Veneto Territorial waters include:

Maritime Transportation, the coastal tourism, fishing, aquaculture, the exploration and the cultivation of hydrocarbons (ban on the new concessions), defence-related activities, the protection of the landscape and the cultural heritage, the protection of the environment and the natural resources.

Vision and the Planning units of the Veneto Plan:

There is a main focus on the above mentioned uses, taking into the consideration the commercial and passenger transport – the most important use of the sea. Coastal and nautical tourism is majorly impacting. The main idea is to continue to support the maritime sector, in which there is a high possibility of development

Intermodal coastal development of the port and the maintenance of the roads. Regarding Tourism, mass tourism has been faced – due to the nature of the coast because of the natural richness present. Another important sector is fishing and aquaculture. This is a topic that is very difficult to be addressed because of the important interest group of fishermen in the area of Veneto – discussions with them should be done to make it more sustainable.

Marine sector is an essential element of regional economic development and is related to a multiplicity of uses. Most relevant uses are commercial and passenger transport, related port activity, and tourism (coastal and nautical) More sustainable forms of tourism are linked to sea and inland cultural and natural assets (e.g. experiential and slow tourism, inland waterways). It is therefore relevant to increase the quality of the coastal landscape by adopting an integrated approach for managing the land-sea interface. This would also improve resilience of the coastal environments to climate change, (habitat restoration, defence against erosion flooding, etc.). Ensure adequate income for the fisheries and aquaculture sector while balancing the needs of

natural capital protection

The overall area, according to vocation of use in the 5 planning units:

Planning Unit A2 01

The first planning unit has a high level of tourism pressure and a high level of urbanisation. There is a high presence of cultural heritage sites that are overlapping the natural protected area. For this reason, the plan is intended to continue and shift the mass tourism model into more sustainable practices (ecotourism and the rural tourism that draws tourists towards the hinterland.

Priority uses are for this area are:

- Tourism
- Landscape and cultural heritage protection

Other uses mentioned are

- Professional fishing
- Aquaculture
- Amateur sport fishing
- Other uses compatible with priority uses

The area is interested by:

- Dredging to maintain the navigability of waterways, with special reference to river mouths.
- Interventions aimed at countering coastal erosion.
- Ban on new hydrocarbon exploration and production

Relevant elements to natural, cultural, landscape value:

- aree Natura 2000 (Tegnue di Porto Falconera, Caorle)
- underwater archaeological heritage (RAPTOR project)

The other uses are also mentioned taking into consideration what has already been happening in the area. What kind of phenomena has been present in the area. There are activities related to dredging. Also the river mouths produce a lot of sediments that should be thought about through engineering solutions. The sand deposits are limited resources. There are Natura 2000 areas with particular interest for reproduction and for providing food for the fisherman.

Planning Unit A2 02

The second planning unit is the one facing the delta del Po and in front of Chioggia that have an important fishing point. There is a very high pressure on fishing in this area. As well as there are many aquaculture facilities. There are also a lot of protected areas on the sea and inland. Other uses mentioned are maritime transport, and coastal and maritime tourism (very high pressure of tourism). Similarly, there is coastal erosion everywhere in the area. Finally, there is also underwater cultural heritage that is subject to research in all this area.

Priority uses are for this area are:

Fishing and acquaculture

Other uses mentioned are

- Maritime transport;
- Coastal and maritime tourism (experiential and ichthyic);
- Navigation related to the offshore regasifier platform;
- Other uses compatible with priority uses.

The area is interested by:

- Dredging to maintain the navigability of waterways, with special reference to river mouths.
- Interventions aimed at countering coastal erosion.
- Ban on new hydrocarbon exploration and production

Relevant elements to natural, cultural, landscape value:

- aree Natura 2000
- underwater archaeological heritage (RAPTOR project)

Planning Unit A2 03

This planning unit is a very important area because of the natura 2000 site in Chioggia. The separation schemes are in place because of the interference of the passenger and maritime transport. The Planning unit is dedicated to natural preservation. The priority uses of this area are the maritime transportation and port activities.

Priority uses are for this area are:

- Maritime transportation and port activities

Other uses mentioned are

- Coastal and nautical tourism
- Professional fishing (Chioggia port)
- Amateur sport fishing
- Immersion of dredged sediments
- Collection of relict sands.
- Other uses compatible with priority uses

The area is interested by:

- Dredging to maintain the navigability of inland waterways and access to the river ports of Venice and Chioggia
- Interventions aimed at countering coastal erosion.

Relevant elements to natural, cultural, landscape value:

- Natura 2000 and ZTB site «tegnue di chioggia»
- underwater archaeological heritage (RAPTOR project)
- proximity with polluted site of Porto Marghera (2200 ha)

Planning Unit A2_04

Priority uses are for this area are:

- Protection of the environment and natural resources

Other foreseen uses are

- Professional fishing and amateur fishing, consistent with site protection regulations
- Maritime transportation
- Nautical tourism
- Other uses compatible with priority uses

The area is interested by:

- Dredging to maintain the navigability of inland waterways and access to the river ports of Venice and Chioggia
- Ban on new hydrocarbon exploration and production

Relevant elements to natural, cultural, landscape value:

- Marine SCI established under the Habitats Directive
- Breeding and nursery areas for fish of commercial interest
- underwater archaeological heritage (RAPTOR project)

Planning Unit A2_05

Generic uses – equal importance of uses in this area and this goes towards Friuli Venezia Giulia. A good sand deposit to be used strategically for sand erosion.

Priority uses are for this area are:

- Generic use

Existing uses:

- Professional fishing and amateur fishing
- Acquaculture
- Maritime transportation
- Nautical tourism
- Immersion of dredged sediments
- Collecting relict sands to counter coastal erosion

The area is interested by:

- undersea deposits of relict sands as strategic resource
- ban on new hydrocarbon exploration and production

Relevant elements to natural, cultural, landscape value:

- Natural reefs, potential development of diving tourism
- underwater archaeological heritage (RAPTOR project)

Interaction of Uses:

It provides ideas between the uses' synergies/conflicts/coexistence because of the intrasector conference. It exploits the synergies

Sustainable environmental assessment and monitoring and this is not an easy task.

The Interaction of Uses in the Adriatic Maritime Areas - Maritime Transport

The potential conflicts to be managed are:

- Maritime Transport/Professional fishing (Trieste, Venice Lagoon, Chioggia, Po delta)
- Maritime Transport/Environment (noise pollution, collision with mesofauna, habitat alteration)
- Maritime transportation/tourism (ship handling, bathing, and nautical tourism)
- Maritime transport (Intra-sector Freight/ passengers, collision)

Potential Synergies to be exploited:

- Maritime Transport/ Tourism (cruise, coastal tourism)

The Interaction of Uses in the Adriatic Maritime Areas - Tourism

The potential conflicts to be managed are:

- Mass Tourism / Small-scale fishing

Potential Synergies to be exploited:

- Ecotourism / small scale fishing
- Ecotourism / aquaculture
- Ecotourism / nature conservation sites



Maria Pia Turinetti (Friuli Venezia-Giulia Region)

The FVG region has identified a regional representative in the Technical Committee for the drafting of management plans and set up a regional interdirectional group comprising research bodies, port system authorities, superintendence. It has also participated in training events on maritime spatial planning through the regional representative and suggested formal proposals for specific vision and objectives, planning units and local measures. Finally, FVG region collaborated directly with the scientific center providing the knowledge framework, suggesting additions and representing observations on the contents of the plan proposal.

The FVG Region in the VAS Procedure

During the scoping phase, the FVG Region provided: the presentation of the Preliminary Report of SEA to the local SCA; gave support to local SCAs for the purpose of a clearer and faster understanding of the documents under analysis; the presentation of their observations by acknowledging the local observations collected.

In consultation phase: The FVG Region is taking steps to facilitate the dissemination of plan documents for a more effective dissemination of information; and is evaluating further observations to make the plan more resilient and suitable for the current and future needs of the FVG and the upper Adriatic.

FVG Region Specific Vision

For the Friuli Venezia Giulia Region, the maritime economy of the coastal system is linked to a multiplicity of sectors: commercial, tourism (including cruises), pleasure craft, fishing and aquaculture . The overall development strategy for these sectors must necessarily include the maintenance of suitable bottoms for waterways and address the critical issues related to interference, as well as climate change and environmental emergencies, in order to allow harmonious and sustainable systemic development. Of great importance in this context is the role of commercial ports , the development of which is closely connected with aspects of logistics and functional infrastructures, including land transport, as well as shipbuilding activities . These activities are in fact historically linked to the territory and, also in consideration of the geopolitical context and the TEN-T networks, will continue to have an international strategic value. Another important factor for the maritime economy of the coastal system is the development of tourism, which nowadays increasingly requires a natural environment managed in a sustainable way.

Areas on which specific objectives and measures have been identified

- 1. Commercial port and shipyards;
- 2. Environmental protection and protection of special storage areas;
- 3. Fishing and aquaculture;
- 4. Bathing tourism, nautical leisure and cruising;
- 5. Dredging, maintenance of the bottoms and management of the relative sediments;

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6. Protection and enhancement of the landscape and the cultural heritage.

The special aspects emerged during the process are the following:

- Concrete opportunity for comparison, sharing and discussion on the interaction between uses.

- Opportunity to study the coexistence between the various floors and in particular on the interaction between the regional landscape plan and the PSM.

- Evidence of the need for maintenance of the waterway bottoms. In general, local measures have been proposed to allow better management of the related sediments.

- Awareness of the importance of maritime planning, with a view to correctly defining the regional role with specific functions and competences, in particular in the phases of maintenance and updating of the Plan.

The FVG region has identified a regional representative in the Technical Committee of the drafting of the management plans. In regard to future activities and opportunities:

The FVG Region remains available to support the activities in progress for the completion of the SEA procedures and the approval of the Plans. For the purpose of detecting and appropriately monitoring uses, needs and effects of the measures, even at a more detailed level, also aimed at the future maintenance of management plans, the FVG Region is available to develop forms of interregional collaboration and international also within the community programming.

In the Q/A session:

Emiliano Ramieri (CNR-ISMAR) commented by saying that the Italian plan didn't identify exactly where you can identify a specific activity. But the plan identified priority areas complemented by measures to identify where these processes will take place in the future.

There are some elements for climate change adaptation that are implemented in the plan.

There is a national strategy approved by the government but the plan is in the pipeline. Existing documents as the climate resilience that have been reflected in the specific objectives and measures of the plan.

FVG is elaborating their own strategy for sustainability apart from the national strategy. It is in development this month, including addressing natural protection and climate change.

Climate change as a general address and the other one is the safeguarding of ecosystem services. That has to be bottom up and Top Down.

Another question would be:





EUSAIR pillar for the quality of the environment, dedicated to the issues of the biodiversity strategy. The annual forum in Tirana, for the establishment of further protected areas in the Adriatic Ionian sea.

FVG is taking into consideration this biodiversity issue. EUSAIR will support the countries that will do so.

Break

Session of presentations and discussions introduced by Martina Bocci and moderated with in collaboration with RRC Koper on:

Impacts and conflicts/synergies

Topics for discussion are the evidence-based issues related to maritime transport and coastal and maritime tourism in the area: impacts on ecosystems and biodiversity and conflicts/synergies with other uses

Guiding Panellists:

- Sasa Raicevich (ISPRA)
- Peter Mackelworth (Blue World Institute)

Martina Bocci is the moderator of the session and introduced Saša Raicevich as the first speaker:

Saša Raicevich (Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA))

Dr Raicevich's presentation tackled the evidence based issues related to maritime traffic and coastal maritime spatial areas. He shared about the martine traffic in the Mediterranean and the black sea by showing a photo taken that morning. He focused on one main point: to think about the data as a range of implications and impacts that are linked to this pressure.

A wide range of pressures that are associated with marine traffic.

Direct impact on the biodiversity due to ship movement including: noise, collision, grounding and anchoring.

Chemical pollution was from ship generated oil discharges and exhaust and also from the persistent organic pollutants, sewage, and debris (as impact on large vertebrates)

Biological pollution was due to non indigenous species. And coastal tourism has impacts and effects on vulnerable habitats.

Sasa discussed Some perspectives for aligning the MSP process with the increasing environmental protection demands. Evolving policy legislation with increasing demand for environmental protection (mirrored by increasing demand on marine space and uses. Eg: wind





farms). He concluded by saying that the lack of data layer doesn't mean that lack of impact (Eg: maps of tourists vessels distribution...)

Peter Mackelworth (Blue World Institute, Croatia - Institute for Tourism, Croatia - FAMNIT, University Primorska, Slovenia)

There are transboundary species in the northern Adriatic and Ionian, hence their management has to be transboundary.

The constant demand of resources and different uses --- offshore. This means We have different rules in each country. It is more complex in each country.

The Tourism sector:

Ocean space is also inherently needed for marine and coastal tourism, the second largest employer in the ocean economy and one of the fastest-growing segments of the world's tourism industry.

Cruise Tourism:

The Adriatic is the second-most-visited sea in the Mediterranean region: With 17% of all passengers, 30 cruise ports, Dubrovnik the second largest hosting city accounting for 833,588 passengers (16.5%) in 2016



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The Leisure Boating sector is a very big sector and is really growing in the Mediterranean region. The recreational boating industry generally creates one job for every four berths used in ports. Based on approximately 400,000 berths in Mediterranean ports, 100,000 jobs could be tied to the recreational boating sector in coastal countries. The ICOMIA Recreational Boating Industry Statistics gives a total turnover of \leq 4,059 million for Spain, mainly due to the activity of service providers, and \leq 3,437 million for Italy covered by the activity of boatbuilders.

Peter Mackelworth also gave an example about the Great Barrier Reef in Australia.

The Great Barrier Reef lies along the North east coast of Australiaextending over 14o latitude, adjoining the coast of the State of Queensland. The entire area was declared a Marine Park in 1975, extending from low water mark on the mainland coast out to a maximum of 250 kilometres offshore in which all is under Federal jurisdiction. To indicate its size, if the Marine Park was placed next to the US west coast, it would stretch from Vancouver to Los Angeles... a single MPA under Federal jurisdiction, with complementary (or mirrored) legislation over the adjoining State waters.



Great Barrier Reef Marine Park (an area that was classified in 1998 as World Heritage Area). Queensland. What is the implication of technology as they go further offshore.







Manca Plazar (Studio mediterana d.o.o., U-M-A d.o.o.)

Manca Plazar's presentation discussed the Maritime transport and coastal and maritime tourism in the area: impacts on ecosystems and biodiversity and conflicts/synergies with other uses.

Cross-border impacts of the Slovenian Sea.

Conflicts between the maritime transport, the nature conservation areas, blue corridors (main transportation routes of mammals, fish...) The impact of travel to blue corridors is chemical and biological. This

Maritime Affairs and transport in Slovenia, Nature conservation Area, Fishing areas, legal regimes and restrictions. Were all the topics discussed by Manca during her presentation with a visual support of Maps (as the one seen below)

Fishing areas, legal regimes and restrictions

Maritime spatial plan of Slovenia



MAP LEGEND

- 1: boundary of prohibited use of encircling net (distance from coast boundary 300 metres)
- 2: boundary of prohibited use of trawl (distance from
- coast boundary 1.5 nautical miles) 3: boundary of prohibited use of trawl (distance from
- coast boundary 3.0 nautical miles)
- 4: night trawling area 5: fishing reserver

Protected areas

- 6: Sečovlje Salina Nature Park
- 7: Strunjan Landscape Park (Strunjan Nature Reserve -Stjužo)
- 8: Strunjan Landscape Park (Strunjan Nature Reserve)
- 9: Debeli rtič Landscape Park
- 10: Cape Madona Natural Monument in Pirar
- 11: area of planned protection of detrific bottom 12: cultural heritage at sea/sea-reaching
- 13: Mariculture
- 222 Locations of existing mariculture farms
- The location of existing mariculture area without proper permits
- Areas that allow siting of mariculture farms by considering
- other activities and usages Potential locations of mariculture tarms
- 1150 m strip around potential mariculture areas
- 14: Traffic realmes
- Area of the national spatial plan for the comprehensive spatial arrangement of the international part in Kaper Area of actual daily mooring of vessels
- Area of actual mooring under the Maritime Code
- Area of limited fishing due to traffic regime





There was also an emphasis on the underwater protected sites for underwater cultural heritage (the brown dots) as seen on the map above.

Maritime Transport Conflicts are the fishing areas, the nature conservation areas, the areas of tourism sport and recreation, and the immovable cultural heritage protection area. Numerous actual and possible conflicts could be resolved by cumulative impact assessment studies. By various case studies, datasets, projects that helped this. There are a lot of data gaps that are needed for the assessment of these studies.

Some of these studies are supported by the MSPMED project in WP3. Informational support to MSP on the local level: Spatial planning in the coastal area.

Capacity assessment, potentials, assessment for future needs: Beaches. Parking lots, Maritime public traffic – transport lines and stops / piers.

Sasa Shan (Institute of Water – Republic of Slovenia) commented by saying that the Slovenian coastline wants to measure the leisure boats. So there is research now in Slovenia on how to gather data about these boats by checking satellite data, drone data, and field research. The boats can be very well monitored.

Pete Mackelworth added: radar maps are very much needed. There is a system that checks boats online. It allows the renters and owners of the boats through a tracking system in order to monitor the data. Access to these data is very important.

Martina Bocci contributed to the conversation by saying that in terms of the Italian plans, there are no formal corridors that are officially defined. But there is a wide use of nature, not only nature 2000 or maritime protected areas. But there is a lot of room for the introduction of such concepts.

11:50 - 2:00 pm Tools to support impact and conflict/synergy analysis in MSP

Topic for discussion is the analytical tools to support impact and conflict analysis in MSP Presentations by

- Donata Canu (OGS)
- Stefano Menegon (CNR-Ismar)
- Lenca Humerca Solar (Slovenian Ministry of Environment)

Donata Canu (OGS)

Dr Canu's presentation discussed the tools to support impact and conflict/synergy analysis in MSP.

These tools aim to support the mapping and presentation of the state of the sea of the main variabilities in space and time. Their possibility to envision the effect of climate change in different options in the choices of the uses of the marine environment. The tools for the transboundary cooperation between Italy and Slovenia include the coexistence of protection of environmental

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objectives and economic activities, the safety navigation measures in place, and the need of tools to map and represent their present state, variability and ability to address scenarios.

A variety of methodologies and models that are coupled integrated models including the following:



The models are applied in marine spatial scales across the Mediterranean all the way to the Gulf of Trieste. The modelling tools allow the interpolation of information in space and to evolve in time and to create scenario analysis. The models allow us to map a buffer and mitigation area around the sources and protection areas. And also the patterns that take place. Also, the modelling allows us to create scenarios analysis for the vision, adaptation, and mitigation to climate change.

The ShareMED – Northern Adriatic – Study Site products, data flow and web portal.







OGS

Pollution hazard assessment from model results: mercury in the Mediterranean sea:

The oiltrans model simulations are a good assessment model. Examples are the oil spills in the marine traffic routes. With these tools we can elaborate maps, taking into account the circulation paths taking into consideration the different methodological methods.

Hazard Assessment of Eutrophication is another ideal tool. Another hazard map about the marine heat waves that can be elaborated from satellite data and the model allows you to envision the future through climate change.

Stefano Menegon (CNR-ISMAR)

Cumulative Effects Assessment and Maritime Use Conflict tools

An approach that is developed and adopted for the MSP plan .A systems based approach for the maritime spatial plan. The cumulative effects assessment and interrelations can be seen as here below:







Maritime Use Conflict Analysis - MUC

A tool to identify sea areas where spatial conflicts occur between sea use pairs (e.g. commercial fishery vs. shipping)
Spatial distribution of MUC score



Matrix of Potential conflict / synergies that allows to identify the different uses. GAIR Geoportal (Porto di Mare): is a geoportal of data and tools for supporting maritime spatial planning in the Adriatic ionian region. Main aims of the portal is to be fair and geospatial data oriented, to facilitate the transboundary harmonisation, a fair and geospatial data oriented, categorization, data persistence, effective support impact and conflict/synergy analysis.

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Tools are supported by MSP at the national level and at transboundary level. These are the basis for transboundary reflection.



A panel discussion followed by: Lenca Humar Solar,

Lenca Solar intervened by saying that MSP Slovenia determines for the detailed planning documents the preparation of:

- assessment of acceptability of planned activities and uses
- elaboration of cumulative load for the entire planning area.

These provisions came into the plan from the environment sector. Carrying capacity study has been demanded in the SEA process by the nature and water protection stakeholders. The demand primarily affects all 4 coastal/istrian local communities. They are traditionally bound to the sea, which is in national planning jurisdiction. No clear methodology is determined for such carrying capacity study.

The following organisational frame has been decided by the ministry and the MSP implementation working group: carrying capacity study will be elaborated for all spatial arrangements, planned by the MSP; the ministry will cover methodological and financial load of pre-study and the carrying capacity study; the (first) carrying capacity study should be elaborated on the basis of available data; methodology chosen should enable repeatability with new/better data.





In terms of temporal framework, the aim of the pre-study is to define the optimal methodology and the scope of the minimum data for the first carrying capacity study. The workshop with all relevant stakeholders, especially with those who should provide data will be organised in November 2022. The first carrying capacity will be shart immediately in 2023 and must be elaborated by 30 june 2023.

The data collected for the MSP process in 2019, is available through the spatial information system of the ministry. The stakeholders (especially maritime transport and coastal tourism) are all requested to provide new/better data if it exists or if they consider it urgent for the carrying capacity study (data dead-line is 31. 3. 2023). The stakeholders are all requested to nominate contact persons for the purpose of the study (especially maritime transport and coastal tourism).

The aims of the workshop which is planned for the first half of november are:

- presentation of the scope of available data and the draft methodology according to available data and
- confirmation of both as appropriate for the (first) carrying capacity study.

All the stakeholders to be invited to the workshops, that will give good results and which will plan that the planned activities wouldn't worsen the environmental situation.,

Klemen Strmšnik (ZaVita d.o.o., SEA practitioner)

Currently we are identifying the best methodology and needed data: Carrying capacity and the Limits of acceptable change

Key starting points:

- Start from the initial state of the descriptors according to the marine strategy
- The entire sea is taken into account, focus on the coastal zone
- Take into account existing activities and permitted spatial arrangements with MSP
- Firstly it will be carried out on a general level, it can be supplemented later
- Consultation with key stakeholders and environmental authorities

The downscaling of the tools presented to have a geographic scope that can be reduced to the level of the national levels.

Klemen's presentation discussed the MSP Slovenia: cumulative and synergistic impacts. The Key pressures are Tourism and recreation, Maritime transport, Fisheries and aquaculture

The challenge: Defining best locations and acceptable extent of activities







The method is through spatial mapping, the analysis of permissible arrangements and activities, and the strategic Environmental Assessment (SEA)

Key conflicts are the conflicts between uses (e.g. Recreation vs. Maritime transport, Bathing areas vs. Wastewater discharges, etc.). The conflicts with respect to protection regimes and the protection of the environment and nature (e.g.Impacts of sediment movement on the marine environment, Impacts of anchoring on seagrass meadows, Impacts of interventions in the sea and coast from the point of view of good water condition, etc.)

Mitigation measures identified include:

Concrete measures to prevent conflicts between uses and protection regimes. Not enough data to assess cumulative/synergistic impacts of the expansion of tourist and transport infrastructure in coastal zones.

Klemen concluded his presentation by saying that it is only possible taking into account:

- the cumulative environmental burden,
- the state of the coastal sea and
- the vulnerability, attractiveness and suitability of the coast.

Maritina Bocci invited all the panellists to start the discussion with modelists and tools developers to propose real solutions.

Saša Raicevich expressed his opinion as an institute that the methodologies should be upgraded to have something new. It is very important to have this data modelling. Also the economic issues that are important, for example the number of people who are employed by the tourism sector. Aside from the natural issues, the socio-economic issues should be also considered. Also, the consideration of climate change to have a parallel biodiversity while considering diversity and the economy to become a marine and port.





Klemen Strmšnik also added: space is not the only factor that should be seen. But the key triggers and key drivers are needed to be evaluated. Many other factors should be taken into consideration.

12:50 - 3:00 pm Discussion on opportunities for transboundary cooperation

Topics for discussion and the future initiatives fostering the coexistence between maritime traffic, coastal and maritime tourism, marine ecosystems and biodiversity and other maritime uses. Also, about the transboundary initiatives + discussion for next steps for collaboration and future transboundary perspective.

Guiding Panellists: Federico Rosset (Veneto Region), Iztok Škerlič, Martina Bocci

Federico Rosset (Veneto Region)

ECT and MacroRegional Strategies unit – Joint Programming Department Veneto Region.

In May 2018 with the Catania declaration EUSAIR started the embedding process towards the 2021-2027 programming period. The flagship identified needs, goals, and actions that are needed to be connected to MSP.

"We, the Representatives of the Governments of [...] CALL on the national and regional authorities responsible for the ESI and IPA funds in our countries to closely coordinate among them across the Region, since the very early stages of 2021-2027 strategic planning, so as to jointly agree on the

macro-regional priorities to be included in the ESIF Partnership Agreements and IPA Strategy Papers and, [...] to identify at the earliest convenience pilot macro-regional actions and projects which require, for their implementation, a coordinated planning and programming of national/regional ESI and IPA funds across the Region".

Pillar 1 FLAGSHIP 1.3 Bolstering capacity building and efficient coordination of planning and local development activities for improving marine and maritime governance and blue growth services. and this includes:

1- Research platforms and Trans-regional cooperation between community-led local development (CLLD) strategies for actions:

-to combat marine litter pollution,

-development of fish tourism and ichthyo tourism,

-Creation of start-ups and local employment and promotion of partnership working





2- Governance of maritime space for a sustainable and transparent use of maritime and marine resources. This will include:

-supporting the implementation of the new Directive on Maritime Spatial Planning -adopting clearer legal frameworks for development of Allocated Zones for Aquaculture (AZAs), marine protected areas (MPAs), exploiting deep-sea water and marine mineral resources.

3- Maritime professional skills: improve the levels of skills and expertise for the working manpower in maritime sector.

EUSAIR FLAGSHIP 1.3 in TSG1 analysis inspired also an internal study approved by TSG 1 (end 2021), result of SHs consultation (2020/2021) which proposes project ideas: coherent with Pillar 1 flagships and oriented to the 21-27 programming period.

Novel devices to prevent marine litter to enter in the sea and ways to process marine litter Development of a common framework for implementing circular economy projects in blue growth sectors (to enable circular culture in regional economies and transform the value chain so as to produce environmental sustainability, social equity and economic prosperity). Maritime surveillance to be developed in three pillars:

(a)develop maritime (environmental and traffic) surveillance/monitoring capabilities based on technologies (like drones and satellites but also mobile applications (engaging general public)(b)Harmonisation of relevant protocols and identification of opportunities for legislation update(c)Increase societal awareness and engagement

Conclusion:

Actions: to use, to engage, to combat, promote, prevent, process, and enable and govern. All these refer to the personal capabilities that can be improved and reflect in the maritime skills and blue careers. The goals will allow local employment (aquaculture, fish tourism...) and circular economy (environmental sustainability).

Iztok Škerlič, EUSAIR Facility Point, JZP Izola

Discussion on opportunities for transboundary cooperation and TSG3 Flagship development

Defining TSG3 priorities to from Flagships:

- Drafting the links between national priorities of all TSG 3 member countries and priorities of EUSAIR Macro region.
- Multiple TSG 3 Workshops with stakeholders at the Mediterranean and Macroregional strategies week and workshops at national level
- Forming 4 project ideas which connect all the priorities of the EUSAIR region.





(https://www.adriatic-ionian.eu/about-eusair/pillars/green-pillar/)

- Several Financial dialogues to align national and strategic priorities to enhance the possibilities of financing through different sources of founding.
- Several meetings/workshops among the Managing/Programme Authorities or other relevant institutions.

TSG3 – ENVIRONMENTAL QUALITY FLAGSHIPS

NO.	Title of the flagship/masterplan	Acronym
3.1	To promote a sustainable growth of the AI region by implementing	ICZM and
	ICZM and MSP also to contribute CRF on $ICZM$ of Barcelona	MSP
	convention	
3.2	Protection and enhancement of natural terrestrial habitats and	PET HAB ECO
	ecosystems	
3.3	Monitoring and management of marine protected species	3MPS
3.4	Large-scale pollution Contingency plan	ASOSCoP
3.5 *	Botanical Gardens as Biodiversity Shelters and Nurseries	Bio-Shelters
3.6 *	Renewal of the adaptation of coppice forests in a drastically	FOREST
	changing environment	READAPT
3.7 *	Secure diversity through a holistic approach for the most	SEC-DIV-CONI
	threatened Mediterranean conifer ecosystems: combining genetic,	FERS
	physiology, biodiversity indexes, germination and restoration	

* Under development, not yet aprooved by TSG

4 Flagships Agreed at the EUSAIR level: TSG 3 level and Governing Board EUSAIR

- 3MSP Monitoring and management of marine protected species
- PET HAB ECO Protection and enhancement of natural habitats and terrestrial ecosystems
- ASOSCOP Transnational contingency plan in the event of accidents at sea
- ICZM&MSP Sustianable development of the coastal and maritime zone

20 Flagship presentation events

 5 Workshops at Mediterranean Coast and Macroregional Strategies Week (From 2017 – 2021); 4 Pillar sessions at EUAIR Forum (From 2017-2021) and many more

6 Financial Dialogues for alinement of EU Funds and Flagship projects

TSG3 CONCRETE RESULTS WITH FACILITY POINT (INTERREG ADRION)

• APPROVAL of funds for implementation of ASOSCoP Flagship, under DG ECHO Call





Prevention and Preparedness for Marine Pollution at Sea and on Shore in December 2021 – start of the NAMIRIS project in march 2022.

- Action plan for joint planning on the coastal strip Koper-Izola for the pilot area of the Gulf of Trieste within the Flagship ICZM/MPS;
- Analysis of Legal basis for the Establishment and further Development of Marine Protected Areas in the EUSAIR
- Submission of the NOAH project, which implements the 3MSP flagship, under LIFE-2021-SAP-NAT Call on 30 November 2021.

The financial dialogue is a process of match making between potential project owners and funding programs/financial institutions. The process involves managing authorities and financial institutions and potential project beneficiaries from different sectors and levels.

ACRONYM	TITLE	OUTFIT
ADRIONet	Managing Tourism Flows in Protected Areas	TSG 3 and 4
BlueCulture	Development of MR Cluster on BlueCulture Technologies and creation of International Competence Center	TSG 1 and 4
l	Using high quality Research to strengthen Dialogue and institutional Capacities for effective implementation of MSP/ICZM in support of inclusive and sustainable growth in the AIR	TSG 1 and 3
STETAI	Sustainable Tourism through Environmental Energy Technologies in Buildings of High Architectural Interest	TSG 2 E and 4
ADRIONCYC LETOUR	ADRiatic IONian CYCLE route for sustainable TOLIRism	TSG 2 T and 4
WAI-TP	WATERBORNE Adriatic-Ionian Technology Platform	TSG 2 T and 1

INTERPILLAR PROJECTS

Implementation of these flagships in practice.

All the pillars are in different positions in terms of strategies approved by the European Union. The quality of the environment – so it was very easy to collect these intentions with this project. On the level of connecting the region (energy and transport sub pillar) this was recently clear in the positions of some countries again

The EUSAIR community agreed on straight forward topics in the cross border programs. This will reflect them in the program and flagships.

Martina Bocci thanked Iztok for his presentation and contribution and gave the word to <u>Comm.</u> <u>Antonio Frigo</u> from the Italian Coast Guard who intervened by saying:





On behalf of the coast guard, it would have been nice to have the port authorities in Italy as part of the planning towards what will be developed in the future in terms of designing the territory and the coastal waters.

Slavko Mezek and **Martina Bocci** thanked everyone for their contribution and attendance and invited everyone to lunch.

Concluding Remarks:

This Bilateral meeting between Italy and Slovenia was an opportunity to exchange info and the preparation and implementation of the MSP plans through the different approaches between Italy and Slovenia including all the impacts and conflicts/synergies in the area. This is a good starting point for thinking about how to concretely work on this collaboratively between Italy and Slovenia. Also, the tools to support the impact and conflict analysis in msp were discussed in relation to the implementation of the plan. In order to have a transboundary MSP, there should be different governance levels to communicate together.

An emphasis on future cooperation platforms as EUSAIR is to be further implemented in the future.

Outputs:

Integrated governance and harmonised MSP Plans implementation Need for mutual understanding and harmonisation of implementation of MSP Plans at different governance levels

Biodiversity and ecosystem protection

Need for an integrated transboundary plan for habitat and biodiversity protection Opportunity to include the concept of Green-Blue Corridors within the scope of area-based management. Need to manage proximity between maritime activities, hot-spot areas and protected areas. Improvement of the buffer zone should be better studied and implemented.

Climate change

Climate change is partially considered by presenting MSP plans. There is a need for a targeted analysis and for identification of measures. Dedicated tools are needed.

Socio-economics

Socio-economic implications of MSP Plans are fundamental. They should be assessed by national plans and in a transboundary perspective. Dedicated tools are needed.

There is a need to boost sustainable economic development and job creation in the AIR. Improved capacities through Blue Skills and Blue Carriers are key.

Diversification of the maritime economy in the area by supporting the development of a new-emerging-innovative sector was highlighted.





Outcomes

The Bilateral meetings presented the following general outcomes:

- -Identify issues of common concern in the area and possible joint solutions
- -Exchange information that may ease the implementation of national plans
- -Enhance transboundary communication
- -Foster synergies between planners and authorities
- -Promote and reinforce international cooperation mechanisms

The meeting also discussed in particular the opportunity to move forward with the identification of possible joint transboundary measures to improve the compatibility of maritime transport with ecosystems/biodiversity and other maritime uses in the area.

Opportunities to develop project ideas to be founded via Interreg programs were also discussed.

Essential References for this document

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Annexe IX Report of Bilateral Event Italy-Malta





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MSP-MED | Bilateral Meeting Italy-Malta



4



30/06/2022 Salini Resort MT

Introduction

Bilateral Meetings are foreseen as part of the Work Package 4 in sub task 4.2 Establishing a solid transboundary cooperation in MSP among bordering Mediterranean Member States.

As stated in the MSPMED Grant Agreement, transboundary/cross-border cooperation and collaboration in MSP is essential to improve the efficiency of planning and management of coastal and marine resources and activities, facilitating the decision-making processes. The transboundary methodological components of MSP are necessary to overcome barriers and obstacles for its implementation (e.g. conceptual barriers, institutional barriers, geopolitical impediments).

To support the harmonization of MSP procedures of MS in the Mediterranean this task will focus on transboundary dialogue on common objectives and transboundary planning on selected areas and selected sea uses.

The proposed structure of meeting that will follow takes into consideration the methodology stated in the GA and structured around three main axes:

a) Transnational priorities regarding MSP implementation (identifying areas and main sectors of concern);

b) Analysis of the main criticalities/issues and concerns for the correct implementation of transboundary MSP;

c) Proposals of mechanisms, instruments and planning measures for the identified areas

Area presentation

The Ionian Sea and the Central Mediterranean Sea are areas of incredible ecological and cultural value, renewed at world level, for its cultural, landscape and archaeological heritage. Sicilian historical sites such as Syracuse are recognized as UNESCO World Heritage Sites and Marsala, Pantelleria, Capo Passero, Noto, Aci Trezza, Taormina are important locations for their underwater archaeological heritage.

Similarly, in Maltese waters, systematic underwater archaeological research has been conducted off coasts of Malta and Gozo determining the discovery of deposits of underwater cultural heritage now mapped and studied. Such sites vary from a 2700 year-old Phoenician





shipwreck, the oldest in the central Mediterranean, to dozens of aircraft crash sites and from early modern shipwrecks to battleships from World War I. A significant number of nations and cultures – both past and present – are represented on the seabed off the Maltese Islands. This variety makes Malta the curator for a uniquely well-preserved cultural resource that is global and that belongs to all humankind. The Underwater Cultural Heritage Unit (UCHU) within Heritage Malta, the national agency for the management of Malta's cultural heritage collections, sites and museums, has, in collaboration with the Superintendence of Cultural Heritage, been tasked with identifying a number of underwater sites so as these may be protected and accessed by divers in a controlled and managed manner. (UCHU Website statement¹)

Topics of exchange

The topics for discussion are several, given the geographical closeness of the two countries, however, Landscape and Cultural Heritage, especially in the dimension of underwater CH offered an interesting common ground for discussion and exchange, moreover given the 30th anniversary of the Convention for the Protection of the Archaeological Heritage of Europe, signed in the same city where the event will take place (Valletta, 1992).

Objectives:

The event aimed to:

-Strengthen bonds between the two countries

-Enable the exchange of current status of MSP plans and processes

-Allow the draft of recommendations on best ways to take into account Cultural Heritage in MSP making and implementation.

Outcomes:

The event had the following practical outcome:

Recommendations on the topic of discussion and the present meeting report that will feed part E of MSPMED Deliverable D39 Report on selected areas: a) Gulf of Lion; b)Tyrrhenian Sea; c) Northern Ionian Sea; d) Northern Adriatic Sea; e) Ionian Sea and the Central Mediterranean Sea.



¹heritagemalta.org/underwater-cultural-heritage-unit



Relevance of the topic

Cultural Heritage includes tangible and intangible culture created by a population in a given area. It refers to historical artefacts ranging from buildings to small jewellery but it encompasses also cultural habits (e.g. food recipes). This wide breadth of what makes up cultural heritage provides opportunities therefore, for the subject matter to interact with several maritime uses and assets.

Thirty years ago, the European Convention for the Protection of the Archaeological Heritage was signed in Valletta in 1992. It set new legal standards for Europe, to be met by national policies for the protection of archaeological assets as sources of scientific and documentary evidence, in line with the principles of integrated conservation.

The Convention established guidelines for the funding of excavation and research work and publication of research findings. In MSP regards, the Convention is also key because it constitutes an institutional framework for pan-European co-operation on the archaeological heritage, entailing a systematic exchange of experience and experts among the various States.

Underwater cultural heritage was an objective of the UNESCO Convention on the Protection of the Underwater Cultural Heritage 2001 whose purpose was to set a common legally binding framework for States Parties on "how to better identify, research and protect their underwater heritage while ensuring its preservation and sustainability [...] and urges States to take all appropriate measures to protect underwater heritage". (UNESCO website²)

The European Union also funded projects to support protection and development of underwater cultural heritage, in particular: <u>PERICLES</u> (2018-2021) whose aim was to develop and demonstrate a comprehensive framework for understanding, preserving and utilizing maritime cultural heritage; and <u>SASMAP</u> (2015), whose purpose was to develop new technologies and best practices in order to locate, assess and manage Europe's underwater cultural heritage in a more effective way than is possible today. The Italian Ministry of Culture was directly involved and the project resulted in Guidelines Manual <u>1</u> and <u>2</u> to the process



² en.unesco.org/underwater-heritage/2001



of underwater archaeological research. The <u>BalticRIM</u> project (2017-2020), eventually, brought together experts of both disciplines of Marine Cultural Heritage (MCH) and MSP around the Baltic Sea to find new solutions and approaches for sustainable management, protection and use of Marine Cultural Heritage. As a result a handbook of recommendations was created, called <u>Integrating Cultural Heritage into Maritime Spatial Planning in the BSR</u> identifying issues in integrating MCH in MSP and suggestions on how MCH was to concur to blue economy.

Furthermore a study on the interactions between MSP and UCH in the Mediterranean published by the MSP Assistance Mechanism of the MSP Platform highlights that "Underwater archaeology currently only has minor involvement in the development of Maritime Spatial Plans internationally. At the same time, underwater archaeology has a potentially large role to play in elaborating the relationship that people have with the sea, both in the past and in the present. Besides, archaeology has been seen, quite rightly, as an environmental concern. [...]Finally, within the MSP process, MCH/UCH should be considered as a very relevant use to promote the Multi-use concept in the marine space, which can have multiple benefits for society, the economy and the environment."

The presentation of the study served as an introduction to the meeting.

The event was an important moment to identify conflicts and synergies with other sectors and uses (e.g. Tourism, Fishing, Traffic, Nature Protection, new uses, etc.) especially in a transboundary perspective. The meeting enabled the draft of suggestions regarding Cultural Heritage integration in Mediterranean MSP considering its protection but also the special role in blue economies.

Programme

The event took place in Salina Bay, on the 30th of June. The date was selected to enable the support of the WestMed Initiative Hackathon taking place in the same premises.





Programme				
9:00	Introduction and greetings			
	CORILA – MSPMED general results and Cultural approach to MSP			
	PA – MSPMED in Malta			
	MSP and UCH Study – Assistance Mechanism (15 min) Stella Kyvelou			
10:30	Presentations (15min each)			
	Superintendence of Cultural Heritage			
	The Role of the Superintendence of Cultural Heritage: Maltese Territorial Waters and Underwater Cultural Heritage			
	Heritage Malta's Underwater Cultural Heritage Team			
	Mapping of the seafloor and how this feeds into the management of UCH.			
	The Underwater Cultural Heritage Unit's management activities.			
	Italian Ministry of Culture			
	Underwater Cultural Heritage in Italy			
	Sicily's Superintendency for Cultural and Natural Heritage of the sea			
	Superintendence of Sea in the MSP Italian Process			
	Superintendence of Sea in the MSF Italian Process			
12.00	Open discussion opened by IUAV with a set of reflections on new opportunities created by UCH and MSP.			
	Conclusions and keynotes			
14:00	Lunch			





Participants

MSP-MED Partners				
CORILA -IUAV-CNR	Pierpaolo Campostrini, Barbara Giuponi, Folco Soffietti,			
	Martina Bocci, Micol Roversi Monaco (Remotely), Fabio			
	Carella (R), Hadi El Hage (R), Maddalena Bassani (R).			
PA	Michelle Borg, Alexia Attard, Dr David Mallia, Marco Attard			
	Portughese, Ivan Fava			
MSP Involved Authorities				
Italian Ministry of Culture	Barbara Davidde (Remotely)			
Sicily's Superintendency for	Francesca Oliveri			
Cultural and Natural				
Heritage of the sea				
Other Institutions				
Heritage Malta	Prof Timmy Gambin and Ms Maja Sausmekat			
Superintendence for	Debra-Jane Camilleri			
Cultural Heritage				













Bilateral event Italy-Malta Underwater Cultural Heritage and MSP

30/06 9:30 CEST

Salini Resort St Paul's Bay, Malta

The meeting wishes to share experiences on UCH and MSP between Italian and Maltese project transboundary perspective. Ideally the meeting will enable the draft of suggestions regarding Cultural Heritage integration in MSP considering its protection but also special role in blue economies.

PROGRAM

9:30 - Greetings and introduction to the topic

Michelle Borg - MSP Unit ManagerPlanning Authority MSP in Malta, the MSPMED project support and introduction to the meeting

Stella-Sofia Kyvelou - East Med MSP focal point Underwater Cultural Heritage and MSP study: presentation of findings

10.15 Institutional presentations

Kurt Farrugia – Superintendent and Debra-Jane Camilten Superintendence of Cultural Heritage The Role of the Superintendence of Cultural Hentage. Maltese Territorial Waters and Underwater Cultural Heritage

Timmy Gambin and Maja Sausmekal -Heritage Malta's Underwater Cultural Heritage Team

a)Mapping of the seafloor and how this feeds into the management of UCH b)Tho Underwater Cultural Heritage Unit's management activities

11.30 Coffee Break

Martina Bocci - IUAV Introduction to the Italian interaction of UCH and MSP

Borboro Dovidde - Italian Ministry of Culture Cultural Heritage in Italy

Francesca Oliveri - Sicily's Superintendency for Cultural and Natural Heritage of the sea Superintendence of Sea in the MSP Italian Process

12.00 Open discussion Opened by IUAV with a set of reflections on new opportunities created by UCH and MSP that may feed suggestions for the enhanced integration of UCH in MSP

14.00 Conclusions and closing remarks



Discussants

Barbara Giuponi, Maddalena Bassani (Remotely), Micol Roversi Monaco (R), Fabio Carella (R), Hadi El Hage (R), Alexia Attara, Dovid







Minutes of the event

Michelle Borg greeted everyone as the welcoming host and provided an overview of the efforts undergone by the Maltese government in developing national MSP plans and how they are linked to Underwater Cultural Heritage.

She recalled that the Mediterranean Sea of today is the result of events that shaped the history and lives of the surrounding peoples and therefore, focusing on UCH within the MSP process is important as the past is a source of knowledge to help guide decisions for the future.

She explained that MSP is a framework that can reinforce the protection and correct exploitation of UCH particularly through the implementation stage when permits for sea uses need to be assessed against the policy framework of the MSP plan. On the other hand focus on UCH can bring forward positive effects in terms of national values linked to cultural identity and the sea.





> Implementation

- The processes for consultations in subsidiary plan making, policy formulation and assessment of development proposals are clearly laid out in the DPA 2016 and subsidiary legislation
- EIA and SEA regulations

SCH as statutory consultee + MSPTC



The more data, information and policy available on UCH, the stronger the MSP framework







MSP for UCH

The strength of the national MSP framework for UCH is dependant on:

- Availability of data (policy, permits and environment assessments)
- Continuous collaboration for appropriate consultation
- Ensuring compliance and enforcement on permit conditions
- Continuous awareness of the value of UCH and landscapes in Malta's coastal and marine waters



Strengthening the national framework + facilitating dissemination of plans, procedures & information, enhances knowledge exchange for transboundary collaboration



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The event objectives were then introduced by Pierpaolo Campostrini, Project Coordinator, synthesising the results achieved by the MSP-MED project and explaining the scope of the event and briefly explaining the interest into a Mediterranean Cultural approach that emerged from the Pan-Eastern and Bilateral event GR-IT.

Maritime Spatial Planning

MSP has important objectives in **natural** and **economic** terms, but cannot ignore the relevance of the cultural and also spiritual services offered by the sea.

These aspects are key, not only because of the tourism sector, but also for the **cultural heritage value**, that is part of the **identity of the populations** living in the territories facing to the sea. The proper consideration of CH will finally improve the «**social cohesion** of Member States», as in the art.3 of the directive.











Landscape and Cultural Heritage

A topic for transboundary cooperation

Today, we are here to join forces and ideas to assess how the value of the cultural heritage and landscape in the sea can be preserved, while the Blue Economy may continue growing to meet the needs of the Mediterranean region.

Some open questions:

- What specific notion of "landscape" can be applied at sea, which is clearly not "territory" and in which there are no "villages"?
- Should we re-think the value of cultural heritage and landscape at sea, to meet new «blue» uses?
- How landscape and new «blue» uses can co-evolve for improving a longlasting sustainable development?



Stella Sofia Kyvelou, representing the Assistance Mechanism of the MSP Platform presented a recent study of UCH in MSP.

She explained that the sea can be considered as one vast interconnected ecosystem and that the MSP process can benefit from an understanding of the historic environment including engagement with coastal and maritime archaeologists.

She then presented the threats to UCH and the value it represents, also considering the UNESCO Convention.





Pressures, threats and hazards that UCH assets are facing

Due to the blue economy activities

Growing demand for the development of sea-uses, needing more and more space in the sea (surface, sea column, seabed)

- Growing demand for investments in the sea (exploitation of living and non-living resources)
- Need for the construction of installations of general interest (Pipelines,, Ports, Power cables / Offshore Wind Farms etc)

Due to the climate change

- Changing environmental conditions of the sea waters (temperature, etc)
- Coastal erosion (affecting the seabed morphology)
- Sea level rise (affecting mainly coastal monuments)
- Extreme weather conditions (strong ripples, etc)

Cultural values-Ocean literacy, main theme in the Ocean Decade programmes



She presented key points:

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Humans have always interacted with the ocean. Underwater cultural heritage is the memory of this relationship and is what connects us with the ocean;

Underwater cultural heritage needs to be preserved to understand our past relationship with the ocean and forecast our future with it ;

Underwater cultural heritage and its natural environment form one indivisible ecosystem. Damaging one puts the other at risk ;

Underwater cultural heritage is irreplaceable. Ocean productivity should not jeopardize its long-term protection ;

Underwater cultural heritage is a major contributor to the Blue economy. When sustainably managed, it can support the economic development of local communities.

There are a number of challenges to consider in planning UCH. It shall be considered that the MSP Directive leaves space for the consideration of these uses in Article 8.

Challenges related to UCH/MCH in Planning







Some states in the Baltic are considering the inclusion of UCH in MSP national planning such as Finland.

Main recommendations are, therefore:

Maritime Archaeology can be seen as an environmental concern. Archaeological material is also a 'habitat' and can provide an important ecological resource.

Within the MSP process, MCH/UCH should be considered as a very relevant use to promote the Multi-use concept in the marine space, with multiple benefits for society, the economy and the environment.

Through MSP, planners can explore UCH as a component of multifunctional sites;

Planners and states can share knowledge and experience;

Identify and visualise the UCH resources of each sea-basin, is important for potential use by planners, decision-makers, and creative industries;

Disseminate good practices, e,g "Code of Good Practice for the Protection of the Underwater Heritage of the Baltic Sea", among MSP planners and other groups in maritime sectors;

Make data widely available and provide opportunities for people using participatory procedures and tools (e.g., PPGIS). Increase seabed surveying with an archaeological component in advance of making plans.

Maritime planners need archaeologists for guidance and archaeologists need to be prepared to provide such assistance in a collaborative way.

A methodology is suggested, but shall consider the great amount of sites identified in the Mediterranean basin.





Proposal of a 6-step methodology for the incorporation of UCH in MSP implementation



In the study a set of economic drivers have been identified:

A.1 Financial resources allocation for the specific Multiple Use of the sea (MUCH -DT-NC or only M.U.C.H. and D.T.)

A.2 Enrichment of the offered eco-tourist product as an opportunity in the blue economy A.3 Necessity of differentiation of the locally offered tourist product.

A.4 Necessity of extending the tourist season through enrichment of the locally offered tourist product.

A.5 Increasing demand for new diving routes by divers and tourism companies




DRIVERS

ADDED-VALUES





As well as a set of barriers

B.1 The UNESCO Convention for the Protection of M.U.C.H. (2001)

B.2 National institutional framework, possible conflicts between co-responsible authorities B.3 Limited coordination between authorities operating at different levels (Ministry of Culture, Local Authorities, Chambers, etc.)

B.4 Limited perception of the economic benefits of this particular reuse of the sea from the development of relevant tourism activities

B.5 Lack of sufficient financial incentives

And impacts

I.1 Potential conflicts with other economic activities (e.g. fishing, maritime transport, etc.)

- I.2 Risk of loss (or theft) of MUCH. items
- I.3 Risk of diving congestion in MUCH. areas
- I.4 Risk of damage in MPAs and MUCH. areas that can be caused by non-experienced divers
- I.5 Habitat disturbance due to the use of high-tech scuba diving equipment





BARRIERS IMPACTS



The different challenges and benefits needs investigation but shall be considered from an holistic perspective.







Timmy Gambin and Maja Sausmekat from the Underwater Cultural Heritage Unit of Heritage Malta offered an interesting explanation of how Maltese waters are surveyed to assess the presence of relics using sonars (sonar picture in the following pages), underwater robots and in depth studies that allow for the 3D reconstruction of underwater wreck sites.

A set of threats, opportunities and challenges were identified to support these operations.







Zone 3

Threats	Opportunities	Challenges	
Fishing	Well preserved air craft crash sites	To protect sites of historical/archaeological importance	
Divers	Potential for well preserved shipwrecks	To study something that may (or may not) be there	
Fish Farms	Medium-depth underwater parks (SCUBA)	To convince authorities that UCH is a reality	
Bunkering	Field-schools	To educate stakeholders	
Loss of Posidonia			





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Changes to Malta's Cultural Heritage Act in 2019, for the first time established as Cultural Heritage all remains that are situated in Maltese territorial waters and are at least 50 years old. The law covers protection and permitting. A dedicated unit was also created for protection, management and valorization. Stakeholders were mapped and involved.

The unit's work of valorization starts by assessing the site relevance, state of conservation and likelihood of deterioration. A score board helps the assessment of the value. The assessment considers not only the relic but also the natural ecosystem developed in/over it. Conservation and threats are then defined with other indicators.









Natural local & global Values

Score	Evaluation	
1	abundant (>100 examples) in Maita and plentiful outside	
2	over 100 examples exist in Malta but with few examples outside	
3	between 10 and 100 examples exist in Maita and plentiful outside	
4	between 10 and 100 examples exist in Malta but with few examples outside	
5	one of under 10 sites of its kind in Malta but plentiful outside	
6	one of under 10 sites of its kind in Malta but with few examples outside	
7	Unique in Malta but with many examples outside	
8	containing 1-2 EU protected species or unique in Malta and with few surviving examples elsewhere	
9	containing 3 or more EU protected species or unique within its subject context	
10	containing an EU protected species habitat (ex: Posidonia meadow) or unique in the world	



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Condition value

	Condition Value					
Score	Evaluation					
1	is in an excellent state with maintenance programme in effect					
2	is in an excellent state but no maintenance programme in effect					
3	is in a good state, requires minor interventions, maintenance programme in effect					
4	is in a good state, requires minor interventions, maintenance programme not in effect					
5	is in a neglected state, condition seems sound but significant specialised intervention required, remedial action in effect					
6	is in a neglected state, condition seems sound but significant specialised intervention required, no remedial action programmed					
7	is in a severe state of neglect/structural failure, requires extensive specialist intervention, remedial action in effect					
8	is in a severe state of neglect/structural failure, requires extensive specialist intervention, no remedia action programmed					
9	is in imminent danger of total loss/collapse, remedial action in effect					
10	is in imminent dange of total loss/collapse, no remedial action programmed					



D









Threat value

	Threat Value	
Score	Evaluation	
1	legally protected and within a conservation/reserve area and with highyl restricted access	
2	legally protected and within a conservation/reserve area but with low visitor turnover	
3	legally protected and within a conservation/reserve area but with high visitor turnover	
4	legally protected and context not specifically threatened and in a low value development area	
5	legally protected and context not specifically threatened and in a prime development area	
6	legally protected but with current developments threatening its context	
7	no legal protection but not specifically threatened today and in a low value develpoment area	
в	no legal protection but not specifically threatened today but in a prime development area	
9	no legal protection and with current developments threatening its context	
10	no legal protection and with current developments threatening its survival	







The important archaeological zones are communicated through Government Gazette, Notice to mariners and official marine charts.

The valorization is enabled via a digital interface with the public: a dedicated online platform allows online booking, and ensures that a record of visiting divers is maintained in order to preserve site integrity and authenticity. Audiovisual recordings on site are fully regulated.

A set of authorised diver centres and local dive clubs are able to book tickets, underwater experiences can also take the form of immersion in manned submersibles.

Control of sites is enforced with different methods: spot checks (inland and at sea), drones, CCTV cameras. Stakeholders support the control, and are actively involved in patrolling sites.





Marketing and promotion takes different forms, a "Shipwreck Club" was created for local divers to facilitate access, and information flow.

Public outreach has also been extensively developed, namely with the creation of The Virtual Museum - Underwater Malta (<u>https://underwatermalta.org/</u>) that allows users to explore the underwater sites using videos, 3D renderings and VR.

Debra Camilleri, Senior executive officer of the Superintendence of Cultural Heritage offers an overview of the legislative and organizational aspects linked to UCH in Malta.

The superintendence is composed of two operational units and 45 officers.



The topic of UCH is addressed by the Maltese Constitution as "patrimony of the Nation" that "shall be protected". The Cultural Heritage Act of 2002 states that protection is a national and citizen duty, a set of articles are dedicated to UCH.







Cultural Heritage Act

Declaration of Underwater Cultural Heritage, Part VII Articles 44 - 48

- 44. The Superintendent may, by a notice in the Gazette, declare remains found on the seabed that are situated in the territorial waters of Malta and are at least fifty years old as Underwater Cultural Heritage.
- 45. For the purpose of this Act, the Superintendent may, by notice published in the Gazette, declare an area of sea or partly of sea and partly of land within which Underwater Cultural Heritage is situated to be a protected zone.
- 46. The Superintendent may, in relation to a person who has possession, custody or control of an object being or forming part of, a historic shipwreck, an underwater archaeological site or being a historic object, for the purpose of:
- (a) the preservation of the object;
- (b) the placement of the object with a collection of articles that has been or is yet to be established; or
- (c) the exhibition thereof, or the provision of access to the object, whether or not the object forms part
 of a collection of objects,

by notice in writing require the person to take such action in relation to the object as is specified in the notice



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Cultural Heritage Act

Declaration of Underwater Cultural Heritage, Part VII Articles 44 - 48

- 47. The Superintendent may, in his or her discretion, upon application by a person, grant a permit to that person authorizing that person and any other persons named or described in the permit to do an act or thing specified in the permit the doing of which would otherwise be prohibited by the Act.
- 48. Any person who finds in the territorial waters of Malta any form of Underwater Cultural Heritage, shall by not later than twenty four hours from such discovery transmit to the Superintendent a notice setting out a description of the remains or of the object and a description of the place where the remains or object are situated.







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The main guiding international legal documents are the Valletta Treaty (Ratified 1994) and The Unesco Convention (Ratified 2021).

Outreach and awareness is performed via different methods, including Government Notices, Social Media, Website, Exhibitions, Research/Publications/Exhibitions at Local Councils and Events, European Archaeology Days/European Heritage Days, Involvement in Coastal SAGE Project and Development of GIS database for all heritage sites on land, coastal areas and underwater.

The Superintendence is therefore responsible for three main scopes of action:

- Permits for underwater surveys of seabed and any other underwater research projects
- Declarations of Archaeological Zones at Sea
- Development-led Archaeological Monitoring and Excavations

Ms. Camilleri preceded by exposing two examples of intervention: in a proposed water polo pitch area, a significant number of objects of cultural heritage value were identified, hence they had to stop the development of the pitch and assess the presence of further materials.

The second example is the damage inflicted by poor anchoring on a World War 2 submarine relict. Those responsible were identified, the measure of the damage assessed and a fine was issued.

Future goals of the Superintendence are:

• To ensure protection of underwater cultural heritage, allowing for sustainable tourism

• To continue to identify and monitor coastal sites where cultural heritage may be at risk

• Collaborate in development and exchange of Underwater Surveys/Raw Data/GIS databases relating to MSP

Martina Bocci Research Consultant at IUAV & CORILA, briefly presented the Italian MSP legislative framework and how Landscape and Cultural Heritage was considered in planning.





In fact the Protection of Landscape and Cultural Heritage (including Underwater) is defined both as «use» and as "cross-cutting principle" of MSP plans.

The official objective was to: Foster and support the conservation of underwater archaeological heritage and was written considering the UNESCO and the Valletta conventions.

A set of specific objectives were identified by Regional Authorities at sub-areas level.

The criteria identified to include landscape and cultural heritage in «vocation» of Planning Units were:

- Historical and architectural bind areas
- Landscape protected areas
- Presence of relevant underwater archaeological elements

That, in turn, translated into measures at national level:

"Identify, in a plan for the protection and enhancement of the underwater heritage, areas where trawling should be forbidden in order not to damage the seabed and underwater archaeological assets, providing mechanical and technological tools to prevent and control access."

And measures at regional level, for instance the setting of:

"Guidelines for the drafting of projects for the enhancement of assets belonging to the coastal maritime heritage [...] Implement a strategy for the enhancement of the underwater archaeological heritage".

Barbara Davidde, Director of the National Superintendency for Underwater Cultural

Heritage, started her presentation by explaining how the UNESCO convention was integrated into Italian national law: on April 8th 2010 the Convention on the protection of Underwater Cultural Heritage has come into force in Italy through the Law number 157 on October 23rd 2009, on February 5th 2020 the Decree of the President of the Council of the Ministers number 169 on December 2nd 2019 has come into force and was established the Soprintendenza Nazionale per il patrimonio culturale subacqueo- National Superintendency for Undewater Cultural Heritage (NSCH), based in Taranto. The activity of the Superintendency has begun on December 2020.

The NSCH is active in the protection, the research, the cataloguing, the conservation and the enhancement of underwater heritage.

The Superintendency is active in several projects, such as CREAMARE, Musas, Amphrite, etc. and processes, including the MSP one.





It is responsible for the National Plan concerning the for the study, cataloguing and georeferencing of the Underwater Cultural Heritage.

Key element is the The Risk Map.

Vulnerability sheets allow the assessment of the Underwater Cultural Heritage status. Results are translated into a digital tool.



The interoperability processes make it possible to represent the areas of the territory as a function, therefore it is possible, for instance, to superimpose the tsunami scenario, Run-up per alert watch (ISPRA), with our architectural and archaeological Cultural Heritage on land and under the sea.

The superintendency has worked in close contact with the scientific experts to inform the MSP national plans, providing data and expertise.







Maritime Spatial Planning

> The maritime cultural landscape is a result of interaction between human processes on the coastal surface over time and the environment, which includes sea, coastal line and land



Maritime Spatial Planning

National Superintendency for Underwater Cultural Heritage





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The presentation ends with examples of protection and promotion of the heritage via videos and digital imagery.







Francesca Oliveri, representative of the Soprintendenza del Mare - Sea Superintendency (Sicily), explained that Sicily has a long and complex coastline, presenting great variability of physiographic, environmental, infrastructural and meteo marine characteristics. A coastal strip that is under threat and in several areas now presents a consolidated situation of "coastal stress".

The first Italian Superintendence of the Sea was established in Sicily by a special article in the 2004 Regional financial law. Its aims are to protect, manage and enhance the culture of the sea in Sicily; it operates at the Regional Department of Cultural Heritage.

The Superintendence of the Sea has put dissemination and enhancement of the underwater cultural values at the heart of its activities, by designing and activating underwater archaeological routes/itineraries or parks that can be visited, in line with the principles of the UNESCO Convention on the Protection of the Underwater Cultural Heritage.

Dr Oliveri reported also that a GIS system is used by the Superintendence. The design of the Geographical Information System (S.I.T.) of the Superintendence of the Sea began in 2004, with the aim of creating a georeferenced computer database of the entire Sicilian underwater cultural heritage and an agile tool for planning interventions on the same.





CONSULTAZIONE DEL SISTEMA INFORMATIVO TERRITORIALE

MAPPE

Ogni provincia ha un quadro generale, nel quale, in relazione al numero ed alla reciproca distanza tra i siti tutelati, possono essere individuate una o più zone identificate con lettere alfabetiche progressive (es. zona A, B, C etc.) Per ogni zona è pubblicata una planimetria di dettaglio con una legenda che evidenzia:

- arec cromaticamente differenziate che identificano gli estremi del provvedimento di interdizione dell'Autorità Marittima competente, tramite il quale si attua la tutela del sito;

- la simbologia generica dei siti culturali, uguale per tutte le mappe.

TABELLE

Ogni sito è identificato con il corrispondente numero di scheda (es. "S0001"), la cui descrizione sintetica può essere consultata nella tabella pdf allegata ad ogni provincia e/o arcipelago, dove sono presentati i dati essenziali.

AGRIGENTO	Tabella AG
	🔁 Tabella AG Pelagie
	💑 Agrigento Area A
	📾 Agrigento Area B
	💑 Agrigento Area C
	a Agrigento Area D
	a Agrigento complessivo aree
	🚋 Pelagie
	💑 Pelagie-Lampedusa
	Pelagie-Linosa
CALTANISSETTA	Tabella CL
	💑 Caltanissetta Bulala
	Caltanissetta complessivo aree

MESSINA

In the GIS, for each submerged site, archival locations of traditional folders and subfolders sorted by province have been added with the help of dynamic links, where other audiovisual, photographic and documentary data are located. This provides real-time access to all available knowledge of each individual site.

The cartographic support of the S.I.T. consists of the Digital Orthophoto Map obtained from the Office of the Regional Territorial Landscape Plan (P.T.P.R.) and electronic nautical charts granted by the Italian Navy Hydrographic Institute. For particular aspects related to the mainland and especially for the identification of place names, the I.G.M. 1:50,000 map is used.



Tabella ME





For specific issues of marine cultural heritage, all coverage, i.e., geographic elements representative of forms with homogeneous content (e.g., Marine Protected Areas, Prohibition Orders issued by Maritime Authorities and their areas of territorial jurisdiction variations of coastlines in certain areas of the Island, surveys carried out by the Superintendence of the Sea on directly explored sites) have also been constructed.

Each province has a general framework, in which, in relation to the number and mutual distance between protected sites, one or more zones may be identified with progressive alphabetical letters (e.g. zone A, B, C etc.)

For each zone, a detailed plan is published with a legend highlighting:

chromatically differentiated areas identifying the details of the prohibition order of the competent Maritime Authority, through which the protection of the site is implemented;
the generic symbology of cultural sites, the same for all maps.

Overall the activities of the Superintendency are oriented towards the protection and monitoring of the UCH in an optic of preservation for the public good, people can visit the diving routes by integrating recognized diving centres (authorised by the Superintendency itself) by which correct procedures of explorations of the authorised sites are followed.







Open Discussion

Folco Soffietti introduced an open discussion facilitated by Martina Bocci and himself, with the objective of identifying suggestions for a common approach to UCH protection and valorization, with regards to its integration in MSP Plans.

He explained that the Bilateral event Italy-Greece offered a moment to consider what was shared between the countries at Landscape and UCH level and the existing legislative frameworks. The participants identified:

-The necessity to integrate Landscape and Seascape as main considerations in maritime policies and MSP given the usefulness of MSP as a tool to enhance and protect landscape and cultural heritage.

-That Landscape offers an important common framework to enhance the potential of MSP in addressing current challenges identified by the MSP Directive.







-The necessity to establish a Mediterranean approach able to consider the regional specificities in LSI regarding Landscape and Seascape (coastal, insular, peninsular, wetlands, etc.).

Building on those results, the discussion was developed around the key topic of "Suggestions for a common approach to underwater cultural heritage protection and valorization in and by the MSP Plans".

All participants stressed the need to recognize and promote a Mediterranean specificity in the approach to MSP. This specificity originates from the huge role the common Mediterranean culture has on the way the uses of the coast and the sea have been developed in the region across the centuries. One key point to this respect is the need to shape the plans according to a socio-cultural identity of the territories involved. A greater focus in the plans should be given to citizens and coastal communities. Planners should identify clearly the target groups for the Plans (for whom we do the plans?).

The need to safeguard and promote the concept of commonality of the sea in MSP was also highlighted, while the MSP Plans generally highlight the rights and ambition of the countries to exploit the maritime space and the marine resources. UCH should be recognized as a common value and should be used to promote the concept of a common sea.

Transboundary collaboration is key to promote preservation and valorization of UCH in MSP. Knowledge sharing is a prerequisite for collaboration but national legislations often burden sharing of data with other countries by prescriptions regarding confidentiality. Research is needed to provide a basis for possible improvement of legislation.

Education and public awareness were recognized as strategic assets for protection and valorization of UCH and particularly the need to increase interest and participation by the young generations on this topic. UCH should be recognized by the population in its essence: a common, shared value. Local communities and society in general should be involved in monitoring and protection of UCH sites. The need to promote knowledge on this topic and awareness raising of students with activities in schools was underlined.

The use of tools to enhance knowledge sharing with the public, public participation and engagement was exemplified during the workshop with examples from both Malta and Italy. The importance of such tools and the opportunity to exchange them across the countries was confirmed during the discussion.

In order to enhance protection resources are needed. In order to attract funds a clear, common and smart strategy for UCH management at regional scale is needed. This could be prepared under a next common MSP project. The strategy and the related action plan should stimulate funds attraction from different sectors of the blue economy: tourism, marine renewable energy, ports etc.





Essential references

Convention on the Protection of the Underwater Cultural Heritage 2001

Convention for the Protection of the Archaeological Heritage of Europe (revised) (Valletta, 1992)

Integrating Cultural Heritage into Maritime Spatial Planning in the BSR

How to incorporate Underwater Cultural Heritage into Maritime Spatial Planning: Guidelines and Good Practices

SASMAP Guideline Manual 1 Guidelines to the process of underwater archaeological research

SASMAP Guideline Manual 2 Guidelines to the process of underwater archaeological research

