

Building a regional strategy on ocean literacy for MSP



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Abstract	<p>This task aims to create opportunities for Regions to discuss on the necessities of their territories in terms of MSP-related ocean literacy and identify suitable solutions, processes and tools to meet their needs. Based on a review of the initiatives available at regional levels, particularly in the case study Regions under WP3 and on exchanges between Regions (a specific workshop will be organised), the task will develop what a Plan could be for an MSP-oriented Ocean Literacy at regional level. This exemplary plan may include (for example, non-exhaustive list): educational packages targeting specific categories (e.g. fishing and aquaculture associations, tourism and recreational operator associations, local communities, high school students of maritime disciplines) to be for example used in workshops and public meetings; itineraries to be offered in marine / maritime museums, public buildings and during events; clips to be disseminated via social networks, etc. Outcomes from the task will be used to make proposals in the framework of initiatives in place (e.g. EU4Oceans, UNESCO Ocean Literacy for All, The Ocean Decade) to include Ocean Literacy themes of interest for Regions.</p>



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“I’m not sure what the future will be for Ocean Literacy (OL). I do think that we need to be a little careful. It seems everyone is working on regionally specific ocean literacy points - and that is good and relevant; people need to understand their backyard before they can understand the world. I just hope that we don’t get so wrapped up in developing locally relevant information that we forget to tie it into the big/overall picture”.

Emily King ([UNESCO 2017](#))

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I. Introduction

As part of the REGINA-MSP project (*Regions to boost National Maritime Spatial Planning*), the work package 4 will develop methodologies to create the knowledge basis needed for effective engagement and/or information of all levels and types of actors in Maritime Spatial Planning (MSP), ranging from the awareness of the general public and the facilitation in the organization of Communities of Practices

(CoPs)¹ in the sectoral field to the training of administrative officers involved in the MSP design and implementation. Specific focus will be put on the needs of the different scales (levels and different kinds of stakeholders, i.e., administrative, economic) present in each national MSP process.

The task 4.1 “Ocean Literacy for MSP”, building on the regional involvement in MSP national Processes, aims to create opportunities for the Regions to discuss the necessities of their territories in terms of MSP-related ocean literacy and identify suitable solutions, processes, and tools to meet their needs. Based on a review of the initiatives available at the regional level, particularly in the 8 case studies Regions of the project, and on exchanges between Regions (a specific workshop will be organised), the task develops what a Strategy could be for an MSP-oriented Ocean Literacy at the regional level. This exemplary plan may include (for example, non-exhaustive list): educational packages targeting specific categories (e.g. fishing and aquaculture associations, tourism and recreational operator associations, local communities, high school students of maritime disciplines, etc.) to be used, for example, in workshops and public meetings; itineraries to be offered in marine / maritime museums, public buildings and during events; clips to be disseminated via social networks, etc. Outcomes from this task will be used to make proposals in the framework of initiatives in place (e.g., EMSEA, EU4Ocean Platform, IOC-UNESCO Ocean Literacy for All, The Oceans Decade) to include Ocean Literacy themes of interest for Regions.

Within the REGINA-MSP project, the strategy will work in synergy with training for public officers and meeting with local stakeholders to support their activities and gain consensus and information in return.

Overall targeted objectives in terms of Ocean Literacy for MSP will be:

- awareness and a better understanding of the MSP processes at a subnational, regional and local level for stakeholders and citizens and their role in the processes
- awareness and a better understanding of the ecosystem-based management/approach, including communication about knowledge and data.
- awareness and improved knowledge about scientific research and socioeconomics in the marine and ecological fields.
- Improved knowledge on maritime activities and cultures. and the emotional connection with the sea

In fact, if we consider Ocean Literacy (OL) as a public policy asset that includes multidisciplinary (geography, planning, statistics, economic policy, etc.) and multi-scalar aspects, especially concerning levels of governance, it could enhance territorial cohesion. From the analysis of

¹ Cattaneo defines it as a group of people who share similar challenges, interact regularly, learn from and with each other, and improve their ability to address their challenges. Cattaneo, C. (2020). Community of Practices. In: Idowu, S., Schmidpeter, R., Capaldi, N., Zu, L., Del Baldo, M., Abreu, R. (eds) Encyclopedia of Sustainable Management. Springer, Cham. https://doi.org/10.1007/978-3-030-02006-4_921-1

practices and literature, it is possible to draft the concept of a common network capable of reducing land-sea imbalances (economic-social, environmental, and cultural) in the framework of Maritime Spatial Planning.

Maritime Spatial Planning: a definition

MSP is a comprehensive and strategic process to analyse and allocate the use of sea areas to minimise conflicts between human activities and maximise benefits, while ensuring the resilience of marine ecosystems. It typically addresses many sectors, their interrelationships and cumulative impacts, and provides for spatial and temporal measures to steer different uses of the sea areas or resources². Following the MSP Directive (2014/89/EU,) Member States were required to implement a national MSP plan taking into consideration key requirements, including Ecosystem Based Approach, stakeholder engagement and transboundary consultation. The 2021 deadline led some countries to implement or draft plans that will need to be evaluated and adapted over the coming years.

Ocean Literacy: for MSP proposal for a definition

Ocean Literacy is usually defined as ‘the understanding of human impact on the Ocean and its impact on our lives and wellbeing’. In the early 2000s a group of ocean scientists and education professionals in the USA started a collaborative process to develop a comprehensive framework to encourage the inclusion of ocean sciences into national and state educational standards. Since then, the scope of Ocean literacy has become much broader build, and it aims to connect in people’s lives and support and encourage citizens and stakeholders to act in a positive way for our Oceans. Modern Ocean literacy initiatives provide a way to advance sustainable practices, develop policies, promote responsible citizenship and encourage young people to be involved in the future.³ An MSP-oriented Ocean Literacy requires, therefore, the understanding of how the maritime activities interact and exist, sometimes impacting in the environment. An MSP-OL literate person should understand the societal and environmental implication of maritime activities and the socio-cultural-economic human relationship with the sea. A set of OL principles related to MSP, inspired by UNESCO’ OL principles are hereby proposed to guide the scope of this activity.

Proposed principles of Ocean Literacy for MSP

1. All life on earth, including humans depends on the Ocean.
2. The Ocean and humans are inextricably linked: humans have strong economic and emotional relationships with the ocean.
3. Human activities have an impact on the environment.
4. There is only one ocean, ocean governance is a human asset that should ease the management of mobile resources.

² MSP global International Guide on MSP (IOC-UNESCO, 2021)

³ Ocean Conservation Trust <<https://oceanconservationtrust.org/ocean-advocacy/think-ocean/what-is-ocean-literacy/>> [Accessed on the 26th of May, 2023].

5. Maritime Spatial Planning can help reduce impacts and ensures the coexistence between human activities and the protection and maintain of ecosystem services.
6. Maritime Spatial Planning should ensure that future generations have access to marine resources and are aware of long-term management.
7. Maritime Spatial Planning is a safe framework for maritime stakeholders from all sectors and levels of governance to express their views.

A. Roadmap

The methodology to create the strategy was achieved according to a dedicated roadmap with a human-centered design approach:

Step 1.

Selection of target groups and knowledge gaps.

Selection of possible knowledge threads to be included (Education, training, culture, etc.).

Media/tools/methods for OL (derived from point 1).

Existing OL-related activities to be capitalized/supported, including capacity building and Communities of Practice.

Step 2.

Selection of objectives

Step 3.

Review of IOC-UNESCO toolkit, EC Communicating MSP, other relevant documents, MSP Directive, regional legislation on dissemination of scientific research (marine topics) and maritime cultures, also comparing national policies.

Identification of notable media/tools/methods for OL (International/National/Regional), e.g., Blue Schools.

Step 4.

Workshop - refinement and verification

Step 5.

Delivery of methodology for the Regional Strategy of Ocean Literacy on MSP development

Mapping of Regional representatives able to use the methodology – *If needed*

Building the strategies, based on the will of 8 case studies Regions, with a minimum of one test case.

B. Target Audience

Targeted audience of the methodology: regional policy makers and decision takers

The following methodology is developed to allow regional and local institutions, supported by scientists, planners, ocean literacy experts, environmental communicators, educators, etc. to develop a Regional Ocean Literacy strategy to support maritime spatial planning implementation.

C. A Regional strategy of ocean literacy on MSP: general objectives

The broad objectives of the Regional strategy were identified as part of the REGINA-MSP project work plan, which was, in turn, inspired by the MSP Directive which clearly states the requirements for stakeholder engagement.

Allow for a bottom-up approach in MSP

The methodology and derived strategy should allow the creation of the knowledge basis needed for effective engagement and/or information of all levels and types of actors in MSP, ranging from the awareness of the general public and the facilitation in the organization of Community of Practices at the sectoral level to the training of administrative officers involved in MSP implementation. When properly implemented the strategy will allow for stronger educational outputs, better dissemination of information and networks for knowledge creation.

Adaptation of existing Ocean literacy tools and techniques

Adaptation of educational and information-sharing techniques for the transfer of knowledge according to the needs of the governance and process structure and the role of each stakeholder in the MSP framework, especially considering the following stages of the MSP process: implementation, monitoring, evaluation, and adaptation of plans.

Tailored solutions

Create opportunities for the Regions to discuss the necessities of their territories in terms of MSP-related ocean literacy and identify suitable solutions, processes, and tools to meet their needs. Considering that some territories could have experience on it, the discussion could include the sharing experience to the others.

The **specific objectives** of the Strategy are refined according to a desk review of Ocean Literacy and communication materials (UNESCO 2017, EC 2021).

- Open MSP discussion to non-experts (especially stakeholders and future stakeholders)
- Inserting MSP in the education of Marine and Maritime Sciences

- Identify the opportunities present at the regional level and employ specificities to achieve better results
- Allow territorial homogeneity and equity in information access regarding MSP and related topics
- Connecting policies and education on marine topics concerning MSP
- Disseminating the seven-ocean literacy-MSP principles and how MSP contributes to the Sustainable Development Goal 14 (SDG 14) (and additionally to 2, 7, 8,12, 13, 16, and 17) of the United Nations.
- Enable the creation of dedicated contents via operative networks of research and disseminators

In a second stage, the consideration of MSP, marine and blue economy policies at Regional and national level allows for the identification of tailored objectives. Regional authorities will have the opportunity to adapt the strategy to specific, regional objectives.

1. Requirements: time horizon and financing for implementation

The strategy should be conceived to be implemented over a time span of 5-10 years (in line with the adaptation of national MSP plans), to be adjusted to the needs of MSP processes (e.g., revision of plans). Resources should be allocated accordingly and spread to provide a regular flow of information and knowledge to the population. In case public funds are not available, a valuable solution could be to build a partnership with NGOs and institutions to try to co-finance the strategy implementation. Assessment guidance is provided to allow for changes and amendments by means of an evaluation table.

2. Additional repository of resources and examples

- MSP Global
www.msppglobal2030.org
- European Marine Science Education Association
www.emsea.eu
https://oceanliteracy.unesco.org/wp-content/uploads/2022/08/emsea-brosura-ENGLISH_preview-2.pdf
- EU4OCEAN (EU coalition for Ocean Literacy)
maritime-forum.ec.europa.eu/en/frontpage/1482
- Ocean Conservation Trust
www.oceanconservationtrust.org/
- UNESCO Ocean Literacy Portal
www.oceanliteracy.unesco.org/?post-types=all&sort=popular
- The European Marine Board
www.marineboard.eu/

- European Global Ocean Observing System (GOOS)
www.eurogoos.eu/ocean-literacy-resources/
- New Blue Curriculum
www.unesdoc.unesco.org/ark:/48223/pf0000380544
- Training for architects and urban planners
www.classroom.oceanteacher.org/enrol/index.php?id=925
- Ocean Literacy trainings for different sectors (media and press, educators, government officials, and general public)
www.oceanliteracy.unesco.org/training/
- Sea Change Project
www.cordis.europa.eu/project/id/652644

D. The methodology

The methodology for the Strategy definition is composed of three main tools to self-evaluate the state of the art and establish the actions to undertake:

1) A Guided questionnaire⁴

A questionnaire to assess the assets present in the region, according to specific threads. The questionnaire can be compiled by regional officers.

2) Mapping the offer: spatialization and questionnaires

The exercise of spatially mapping the offer will allow to direct the strategy towards geographical balance. A set of shorter questionnaires are designed to allow a more precise evaluation of the offer in terms of education and dissemination.

3) Guided index

The index is a skeleton to be filled in according to the results of the previous exercises and regional specificities. Description of the content to be provided is present.

The methodology considered the seven oceans' perspectives identified by UNESCO's OL Toolkit: The scientific perspective, the historical perspective, the geographic perspective, the gender equality perspective, the value perspective, the cultural perspective, the sustainability perspective. But combined them into four main opportunity threads, namely:

- Regulations,
- Education,
- Culture,

⁴ Questionnaires should be ethical and anonymous, the only relevant personal data being the affiliation to a regional body or entitled entity.

- Research

Research is a cross-cutting element able to provide content but also an occasion for dissemination.

The regional bodies may consider the following proposed index (p.8) and populate it by employing the logical scheme built around a set of questions and solutions.

Mode of employment: the methodology can be implemented by answering the guided questionnaire and performing the mapping-the-offer exercise, then the strategy paragraphs should be compiled with all the “YES” answers and related information. In a second phase, resources-wise, it can be considered to fill some of the gaps identified by the “NO” by inserting them as actions to be supported over a longer period of time.

How to integrate the Strategy into existing or draft Regional strategies for blue economy or marine protection

The Regional Strategy of Ocean Literacy on MSP can withstand as a single document but, if preferable for the Regional legislator, it can also be integrated as a dedicated chapter in broader strategies/plans for blue economy or marine protection at the Regional level. For instance, in the sections dedicated to communication and engagement of local stakeholders.

In case the proposer of the strategy is an MSP National Authority or practitioner, an initial task will be the mapping of Regional representatives with the knowledge to define the strategy from the present methodology.

1. Guided questionnaire

<i>Normative:</i>	
Does your Region or County have dedicated soft laws (e.g., mentioning) or strategies touching upon Ocean Literacy or related topics (education, cultural promotion, research dissemination of marine and/or maritime topics)? Please consider also strategies directed towards sustainable development.	
NO	YES
Interactions with the national regulations that have Regional and local effects should also be considered. In case no regulations have been issued you can consider creating new ones inspired by this strategy.	Regulations can help identify more detailed objectives but also gaps and opportunities. Interactions with the national regulations that have Regional and local effects should also be considered as well as port regulations.

<i>Scientific and technical research:</i>	
Does your Region or County host universities and/or research centers or bodies (including yours) and NGOs that participate in research projects (e.g., EU, UNESCO, etc.) dealing with the production of knowledge regarding marine and maritime topics? *	
NO	YES
Consider the possibility of accessing EU funds partnering with bodies in other areas to develop contents.	1.Spatialize the bodies on the territory
	2. Are networks already present?
	NO YES
	2. Promote creation of networks of cooperation (e.g. by organising informative tables, Community of Practices)
	Support, also financially, or disseminate the network and the contents, these institutions can host events and have the human resources disseminate and explain the assets of MSP. You may consider giving more space to presentation of specific Regional habitats
<i>Education:</i>	
Does your Region or County have schools and/or universities where marine and maritime topics are taught?	
NO	YES
Identify potential schools that may be interested in proposing blue courses or curricula. Promote Blue School Networking at European level.	1. Spatialize the bodies on the territory and promote territorial harmonization, also via internal school exchanges.
	2. Map the educational offer.
	3. You can create a course or a curriculum working with schools and research centers and universities*. For an MSP-oriented education, students should be able to know: a) the main maritime economic sectors existing in the Region, b) which spatial data is available in relation to marine issues and why it is needed, c) the existence of laws and management tools that regulate marine space. Examples of activities, general materials can be retrieved at: Sea Change ⁵ or Ocean Literacy Portal ⁶ , Ocean Literacy Toolkit ⁷ Tools such as Sea Sketch, EU Maritime Atlas ⁸ , MSP Challenge. d) the main ecological Regional hotspots and features. *Erasmus+ funds can be accessed for these purposes.
	4. Promote Blue School Networking at European level ⁹ .

5 <https://www.seachangeproject.eu/>

6 <https://oceanliteracy.unesco.org/?post-types=all&sort=popular>

7 <https://unesdoc.unesco.org/ark:/48223/pf0000260721>

*Mapping table available after the questionnaire

8 [ec.europa.eu/maritimeaffairs/atlas/maritime_atlas/#lang=EN;p=w;bkgd=1;theme=2:0.75;c=617910.1422549905,6651738.573047513;z=](http://ec.europa.eu/maritimeaffairs/atlas/maritime_atlas/#lang=EN;p=w;bkgd=1;theme=2:0.75;c=617910.1422549905,6651738.573047513;z=4)

4

9 <https://webgate.ec.europa.eu/maritimeforum/en/frontpage/1485>

<i>Culture and Traditions:</i> Does your Region or County present (sea)food recipes that are typical to the Region?		
NO	YES	
with a local chef, you can create a new tradition based on sustainable species.	Is the fish or seafood collected/harvested in a sustainable way?	
	NO	YES
	Promote alternative solutions to the tourist sector and the public while explaining how MSP contributes to the regulation of sustainable food production from the sea.	Promote sustainable consumption at Fairs, tourist offices via brochures and panels, in main media via dedicated adverts or in food broadcasts, in fish markets teaming up with fishermen/sellers and with panels. Organize food-tasting events to promote local fish and recipes to the public.
Does your Region or County present Museums/aquariums/underwater museums?		
NO	YES	
Consider other spaces for small exhibitions, such as Libraries and media libraries. Promote small exhibition spaces to present MSP, for instance, town council or research institutions may have space but require funds or support.	1.Spatialize the bodies on the territory and promote territorial harmonization, for instance with the institutions of small branches or micro-exhibitions, also in public spaces and outdoor. 2. Map the kind of OL offer* they have (permanent exhibition/temporary/publications/education activities). 3. Propose support in terms of networking with schools, research centers, universities to create contents for exhibitions on MSP, including promotion of contests.	
<i>Cultural production:</i> Does your Region or County host artisans, visual artists, writers and musicians dealing with sea topics?		
NO	YES	
Building on experiences such as the European Marine Board Artistic Residency, your Region could organize a contest or a residency that is theme-bounded and foresees collaboration between artists and scientists or experts.	Engage with creators, explaining MSP (also in partnership with Research Centres and NGOs) and proposing to develop cultural contents linked to Regional specificities. A method is to organize/dedicate part of an event to showcase the results of their endeavours.	
<i>Events:</i> Does your Region or County host events related to marine aspects?		

NO	YES
Consider the opportunity to network with institutions identified by the strategy to organize events, EMD in My Country , UNESCO Ocean Decade Activity and can represent a source of endorsement and visibility.	<p>1. which kind of event where MSP information can be shared on place)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Boat Show <input type="checkbox"/> Marine Environment <input type="checkbox"/> Film Festival <input type="checkbox"/> Art Shows/Fair <input type="checkbox"/> Artisanal Show/Fair <input type="checkbox"/> Food Fair <input type="checkbox"/> Citizen science activities Other Meetings:..... <p>2. Spatialize main recurrent events</p> <p>3. A stand to present MSP, workshops and/or informative sessions could be organized or leaflets/materials could be shared.</p>
Does your Region or County present natural parks and MPA that perform dissemination activities (panels, courses, infodays, etc.)?	
NO	YES
Support the networking with research centres to develop communication material.	<p>1. Spatialize the bodies on the territory and promote territorial harmonization.</p> <p>2. Map the dissemination offer* and support in terms of visibility or further material creation and networking with schools, sustainable tourism agencies or NGOs.</p>
<i>Communication:</i> Are large campaigns on ocean communication present in your Region or County, including recurring tv/radio broadcasts and podcasts? ¹⁰	
NO	YES
A coordinated campaign could be designed at Regional level, to promote MSP consultation or co-design and implementation. This can be especially organized before specific moments (e.g., plans revisions) or in synergy with events (e.g. European Maritime Day), providing some level of endorsement through the “EMD in My country initiative”.	<p>MSP could be proposed as a topic in some of the existing broadcasts.</p> <p>Likewise, it could feature in some issues of magazines/newspapers.</p>
Does your institution have a specific platform or use social media to disseminate information on MSP?	
NO	YES
You may want to consider creating them.	<p>1. For social media: schedule a set of posts to promote MSP in the Region. Specific campaigns (3-4 posts) can be designed to be posted over a few weeks (e.g., around public consultation, World Ocean Day or similar events) and replicated with different contents over many years.</p>

10 A useful reference in communicating MSP is the dedicated booklet created by the EC: <https://communicatingmsp.msp-platform.eu/>

	<ol style="list-style-type: none"> 2. Dedicate a webpage to describe the Regional implications of MSP and the channels by which stakeholders can have their voice heard. 3. Engage local influencers to reach more people.
<p><i>Personnel:</i> Does your Region/County have one or more communication expert that could follow-up on MSP related issues?</p>	
NO	YES
<p>Synergies may be found with other activities promoted at Regional level. Networking with local institutions can also be a valuable path.</p>	<p>The officer could be put in charge of refining the strategy and implement it, coordinating internal and external content creators. Dedicated personnel can help develop the strategy actions, maintain a living network, create an effective calendar and a coordinated visual identity.</p>

NOTA BENE:

Do Regions have to act on all the proposed **threads**? No, the threads are useful for institutions to know which existing assets are present and can be employed to maximize results, and avoid duplication and money waste. However, it is suggested to act on several threads if possible and over a long-time span to reach a larger portion of the public and local stakeholders.

Language is important, as highlighted by the [Recommendations to promote knowledge exchange and transfer on Marine/Maritime Spatial Planning \(UNESCO-IOC 2021\)](#)¹¹. Also a few pages in regional/local languages can represent a way to show you value local culture and are open to bottom-up approaches.

Small Islands specificity: small islands represent a specificity that should be addressed as such: especially in spatial terms they may have singularities that need to be put into a framework. Moreover, ensuring good connectivity, both physical and digital, can help creating or exploit paths of knowledge, bridging experiences and put them to use in a coordinated network of islands, considering that they may be small but remain valuable¹².

Wishing to bring it forward: would you like to bring your strategy further? You could perform a Landscape Character Assessment¹³ to understand the specificities of your coast, moreover you could map the perception of your population, performing a perception survey.

11 p.15 “Enable multi-lingual communication: when planning at transboundary level, and when feasible, it is relevant to evaluate the possibility of promoting multilingual activities and material with simultaneous interpretation or translation of documents”.

12 Ibid, p.19 “Fit the size: remember that what works for a stakeholder might not work for others. For instance, at the local level, community-led projects or on-site knowledge transfer events are important, where indigenous and youth groups are well involved. [...] Make sure to adjust the way of communicating information based on their own way of internalizing it. Adapt the language, they are professionals of their respective sectors, they do not “need” to know some specific terms related to MSP.

13 “Landscape character assessment (LCA) is the process of identifying and describing variation in character of the landscape. LCA documents identify and explain the unique combination of elements and features that make landscapes distinctive by mapping and describing character types and areas. They also show how the landscape is perceived, experienced and valued by people.” from www.gov.uk/guidance/landscape-and-seascape-character-assessments [Accessed 27th of May 2023].

2. Mapping exercise: questionnaires (to be paired with spatialization)

Template: mapping Educational and training offer regarding marine and maritime topics:	
Name of the institution:	Location:
<input type="checkbox"/> Public body	<input type="checkbox"/> Private body
The curriculum/course is financed by:	The curriculum/course invited externals:
<input type="checkbox"/> Public funds: <input type="checkbox"/> Co-funding: <input type="checkbox"/> Charity/ NGO funds: <input type="checkbox"/> Private funds:	<input type="checkbox"/> NO <input type="checkbox"/> Researchers: <input type="checkbox"/> NGOs: <input type="checkbox"/> Government: <input type="checkbox"/> MSP experts: <input type="checkbox"/> Other experts:
The offer is directed towards: <input type="checkbox"/> 5-10 years old <input type="checkbox"/> 11-15 years old <input type="checkbox"/> 16- 20 years old <input type="checkbox"/> 21-28 years old (main formation) <input type="checkbox"/> late/continuous formation	
The offer is: <input type="checkbox"/> A single day presentation <input type="checkbox"/> A short course (e.g., 5 days per year) <input type="checkbox"/> A regular course ¹⁴ <input type="checkbox"/> A full curriculum ¹⁵ <input type="checkbox"/> A full Degree ¹⁶ (Specify level) _____ <input type="checkbox"/> A training course (Specify target group) _____	
The offer is composed of: <input type="checkbox"/> Traditional lectures <input type="checkbox"/> Hands-on activities <input type="checkbox"/> Both	

Template Mapping museums, parks and aquariums offer:	
Name of the institution:	Location:
<input type="checkbox"/> Public body	<input type="checkbox"/> Private body
The offer is directed towards:	
<input type="checkbox"/> Children	

14 A course happening every year, usually over many days or even months.

15 A curriculum is usually composed of many courses within a degree.

16 A degree runs usually for more than one year.

<input type="checkbox"/> Youth <input type="checkbox"/> Adults
The offer is composed of: <ul style="list-style-type: none"> <input type="checkbox"/> A permanent section of Museum/parks <input type="checkbox"/> A temporary exhibition <input type="checkbox"/> Museum/park explanatory tours <input type="checkbox"/> Educational activities <input type="checkbox"/> Creation of communication outputs
Are external stakeholders involved?

3. Guided index

[Name of the Region] Regional Ocean Literacy Strategy in support of Maritime Spatial Planning

Foreword

1.1 The needs of MSP and Regional institutions

Offered: Maritime Spatial Planning, since the MSP Directive that created a framework for its implementation in EU basins, had a clear objective: “The objective of ensuring that the largest number of stakeholders depending on the maritime space are allowed to perform their activities in a fair, sustainable, and collaborative way” (EC, 2021). In fact, MSP, by applying an ecosystem-based approach, can help deliver important management (tools)? in terms of environmental protection and sustainable transition of blue sectors, reducing conflicts between sectors and identifying possible synergies. Regional institutions need to be included in the co-design of the management and regulatory tools, being able to act as conveyors of local needs.

Local needs of coastal populations can be broadly regrouped in terms of preserving and promote cultures, and this by ensuring that environments and landscapes are protected, and economies are in measure of supporting coastal societies in an equal manner. In these terms it becomes clear the importance of explaining to local stakeholders the available tools at national and regional levels/scales by which management of activities and ecosystems can be established and the channels by which they can express their views. Stakeholders should, before expressing their needs and opinions, be informed of the general picture of a given area and appreciate the complexity of a management able to satisfy most needs.

The regional institutions can play an active role in informing stakeholders, considering, as indicated by the European Commission, that when communicating MSP is key to create “dedicated communication strategies from day one: from informing sector representatives about a calendar of actions, raising awareness of local, regional or national consultation on priorities regarding access to the maritime space, to disseminating the publication of MSP strategies”. Another highlighted aspect is that “style of

language and methods used should be adapted to the target audiences and their varying degrees of thematic knowledge and expertise and in response to their distinct expectations and requests”.

Overall, an informed, literate population will be easier to engage during the official consultation processes. Moreover, the relationships between institutions and private sectors will be stronger, thanks to the recognition of socio-economic value and more regular information flow.

1.2 Ocean Literacy as a tool to ease engagement and understanding.

Offered: Ocean Literacy was the result of the efforts of a group of ocean scientists and education professionals that, in the US in 2002, identified the need to develop a comprehensive framework to encourage the inclusion of ocean sciences into national and state educational standards. The incepted ocean literacy movement spread throughout the World and “Ocean Literacy” has now come to cover a broader range of cultural production and dissemination based on accurate scientific knowledge. Ocean Literacy can, therefore, be easily put at use in educating existing and future stakeholders about MSP processes, their legislative and spatial tools as well as specificities of involved sectors, including nature protection. Eventually, for the general public, Ocean Literacy for MSP can, hence, be a cultural framework in which present the complex and highly technical aspects of MSP in a more approachable way.

The strategy hereby presented intends to define the scope and actions that the Region will put into practice in the coming years according to a set of main threads: Regulation, Education, Culture and Research. Regional schools, museums, parks, research centres, artisans, stakeholders and a variety of activities have been considered in mapping the current offer. An offer in terms of Ocean Literacy that can allow the integration of MSP topics (e.g., data, policies, sectors) in it as to make them available to a broad audience.

1.3 Target groups

Different target groups have different needs:

Schools needs to develop courses and curricula with often scarce resources. Building a network with research centres, including a repository of contacts can help ease this situation.

Students need to acquire a general knowledge about the ocean and human relationships with it. But also, a basic understanding of the MSP process as part of their Geography or Science curricula, noting that so far best results were achieved in older age-ranges.

Sectoral stakeholders, in addition to the basics of the MSP process, need to understand the ecological aspects and some of the interactions among activities. Moreover, they should have perfectly clear why it is relevant they are part of a bottom-up approach, how to make their voice heard and participate in the formal process. Governance/management stakeholders should be well aware of the socio-economic aspects of MSP and should be aware of how they can participate and facilitate the planning process.

2. A Regional Strategy: vision and objectives

The short paragraph will present the overall vision and objectives of the strategy according to the regional needs (e.g., supporting MSP implementation or consultation, establish a regional network, raise awareness, educate on the topic, etc.)

3.1 General background

The short paragraph will present a brief overview of the regional blue setting per key points: marine environment, maritime economy, policy and culture.

3.1.1 Socioeconomics,

3.1.2 Environment and geography

3.1.3 Cultural assets

3.1.4 Policy context

3.2 Building on the state of the art

The chapter will present an overview of existing features (as per Guided Questionnaire and mapping exercise) and propose if and how the rintend to foster them in the short-medium period, the year of expected implementation and possible resources could be indicated.

3.2.1 Education

3.2.2 Scientific Research and dissemination

Research centres and Universities may be of various nature, for instance public or multi-participated at different levels (national, Regional, private, etc.). They also play inhomogeneous roles: some create knowledge useful to be shared, others play a direct role in education and dissemination. Their plurality usually allows for collaborations and cross-fertilization.

3.2.3 Fostering regional cultural landscape.

The paragraph refers to cultural production, including traditions.

3.2.4 Museums and Libraries

Museums and libraries have the amazing task of giving access to what is there but cannot usually be seen, this especially refers to the technical aspects of maritime work but also the vertical dimension of the sea and the ecological interactions within biomes. They are important hotspots for building a connection with history and cultures, especially regarding Underwater Cultural Heritage.

3.2.5 Events

Relevant events are considered the ones involving maritime sectors such as fish fairs, but also events dedicated to MSP, for which guidance is provided by the European Commission (2021), pp. 8-9.

3.3 Engage small businesses.

The paragraph is dedicated to Regions intending to develop an active cooperation with local businesses, places where sharing information via leaflets, labels, cultural products or organize events. Business can also be engaged in terms of economic collaborations in the diffusion of OL for MSP. This group includes: Bookshops, restaurants, fish shops and markets, NGOs, Cafes, etc.

3.4 Communication activities

The chapter is dedicated to the communication that the regional body can support or put in place, the chapter will present existing channels (identified via the Guided Questionnaire) and how they intend to employ them over the short-medium term.

3.4.1 Regional media

3.4.2 Online presence and Social Media

4. Evaluation and Adaptivity

The chapter is a presentation of how the strategy will be evaluated over the following 5-10 years and how it may be adapted. The Region should perform an intermediate evaluation and keep track of what is being performed and if targets are being met. In case of negative feedback, the strategy should be revised. – A Table is offered with tentative basic indicators:

	Education and Training	Cultural production	Events	Cooperation with other institutions	Communication	Initial targets	Intermediate targets
People reached (specify gender and socio-economic background)							
Geographical Balance							
Courses activated							
N° of events/products/outcomes							
MSP supported activities							

	Has a well-structured, sustainable Regional Network been established? _____					
	Is the strategy financially sustainable for the selected timespan? Indicate if a financial plan has been established and which are the sources. _____					

5. Cross regional level

The chapter will describe how cooperation with other Regions (at national and international level) will be pursued to create content, enlarge dissemination, capitalize experiences. This may, for instance take the shape of shared curatorial experiences, conferences, projects.

6. Sources of inspiration

The chapter will present an overview of good practices, also from outside the Region, that the institution intends to capitalize.

7. References

Insert the textual references.

II. Case Studies

Tried and tested tools

The tools previously introduced were tested during a workshop with the Region of Sardinia and introduced to 9 French coastal Regions.

A French Overview

In addition to the Italian tester, the strategy methodology was also presented to French regional representatives during a dedicated online meeting that took place on the 8th of December 2023. Nine Regions were represented, including two from French outermost Regions. It emerges that only two Regions have a service that may offer a focus on OL. 3 Regions have, to this day, a strategic document addressing sea culture aspects (and one more is in the process of being drafted). There are, however, many and diverse actions already taking place at the regional level that could be inserted in an OL discourse (e.g. educational projects, books, etc.). The main **identified limitations** to a regional OL strategy were: a lack of political will, a lack of understanding of the broad impacts of OL, a lack of networking, vagueness on the OL notion and applications and the funding. **Synergies and**

opportunities were also identified, namely the possibility of a more cultural approach, involving cultural and artistic heritage, the strong interest from Local Action Groups of EMFAF (GALPA) to develop regional strategies.

Italy: the Sardinia Case Study Assessment

The methodology for the Regional Strategy for Ocean Literacy in MSP was tested in the Italian case study Region, the Sardinia Region.

The result is a draft strategy that could be implemented by the Region. The ratio of the task, as studied by Iuav and IEO was that the methodology could guide a Region into developing a tailored strategy built on existing assets. From the testing, it resulted that at the moment the Region was not foreseeing the definition of such a strategy, nor had the human resources to provide for its compilation according to the methodology developed by REGINA-MSP.

The Region was, however, very supportive in the development of a draft strategy that was carried out by IUAV. The compilation was then built employing research methods: regional representatives and sectoral experts were interviewed according to a semi-structured questionnaire, derived from the one present in the main methodology. The interviews were carried out online and during workshops with regional stakeholders. The results were paired with results from the OL Cagliari event and desk reviews of existing educational and dissemination assets in the Sardinia Region.

The results highlight the fact that there are already in place frameworks that can be reinforced and adapted to host OL-MSP topics. What REGINA-MSP enabled was the acknowledgement of existing assets and the proposition of a renewed framework for collaboration. Moreover, the engagement of different regional Departments in the creation of the ROLS (Regional Ocean Literacy Strategy) may prove beneficial for future regional collaborations regarding OL and MSP.

The Sardinian case may not be the average case in Italy. The main identified network was the INFEAS (the system Information Training and education to the Environment and Sustainability), dedicated to education and communication about environmental topics and such network is not really active anymore in most of the Italian Regions.

There are, however, features that are likely to be present in every Region. First and foremost, the internal complexity in aligning different bodies and their needs/objectives. Regional institutions are formed by several units, some of them related to marine protection, others to education, maritime economics, MSP, etc. They all are in a measure of managing or providing inputs to OL. Of course, it may not be easy to coordinate among them and balance needs. Likewise, the financial aspects may be challenging to agree upon and manage.

In the Sardinian case the choice fell on the environmental education network because is the most developed one and can work as a cornerstone. On such a cornerstone the other regional units and local realities may be joined and work for a common purpose. In that respect, the foreseen District of the Sea (foreseen by a regional measure in the draft Italian MSP plans) may also work as a gatherer.

Another issue that can be traced in other Regions is the fact that communication services may be centralized, hence the maritime aspects may have only limited showcase. Moreover, the time to have an item posted or promoted may be longer. Similarly contacts with the press may take longer. To overcome this, selected social media pages and online portals dedicated to the natural environment may represent a better option to include in the OL strategy.

On the positive side, Regions usually present local universities, schools and research centers are an asset that must be considered in order to link them and exploit potential synergies, also in regard to maximizing financial resources. Likewise, the relationships with local NGOs, artists, and testimonials is for sure an aspect of interest.

Moreover, in some Regions there are also maritime museums that can work as a loudspeaker for the needs of MSP.

Another aspect to be noted is a peculiarity of the Mediterranean and Italy: the presence of rich cultural heritage, museums and archaeological sites. In creating the strategy for Sardinia, it felt important to mention the role they may play in connecting ancient uses and cultures to nowadays intangible heritage. And this while strengthening the fruition of underwater cultural heritage.

Eventually, it is worth noting that timewise the strategy should be active on a regular basis, with peaks of intensity close to participatory processes (e.g. stakeholder engagement) linked to MSP plans revisions.

As a final remark, this test revealed that there appears to be interest from Regions and stakeholders to build networks of information and cultures related to Ocean Literacy for sustainable blue economies and, hence, MSP. Regions appear to have established networks that can work as skeletons to be reinforced, however, there is a lack of a trigger to help them develop such strategies. For instance, national funds or European projects to help set up and maintain a working strategy with evaluable and positive impacts on local realities in economic and cultural terms.



Co-funded by
the European Union

Focus on the Sardinia case study tester

Regional Ocean Literacy Strategy in support of maritime spatial planning in the Sardinia region ROLS-MSP



Disclaimer

This is a strategy proposal, developed by the Iuav University of Venice as part of the REGINA-MSP project (EMFAF-GA 101081219). The strategy was developed through a dedicated workshop and a series of interviews with representatives of the Region and regional economic actors. The strategy is therefore not an official document, this document represents only the opinions of the authors and does not necessarily reflect the positions of the Sardinia Region or the European Union.

The Regional Ocean Literacy Strategy (ROLS) aims to be an element of valorisation of regional experiences in terms of education, dissemination, and research in support of tools for the sustainable management of marine resources and the coastal strip. These tools include regional strategies relating to sustainable development, tourism, adaptation to climate change, but also maritime spatial planning, and related resolutions. The strategy allows for shared objectives and harmonized messages to increase their effectiveness.

Maritime spatial planning: a definition

MSP is a comprehensive and strategic process to analyse and allocate the use of marine areas in order to minimize conflicts between human activities and maximize benefits, while ensuring the resilience of marine ecosystems. It typically addresses many sectors, their interrelationships and cumulative impacts, and involves spatial and temporal measures to guide different uses of marine areas or

resources¹⁷. Following the MSP Directive (2014/89/EU), Member States were required to implement a national plan that considered key requirements, including the ecosystem-based approach, stakeholder involvement and cross-border consultation. The 2021 deadline has led countries to implement or draft plans that will need to be evaluated and adapted in the coming years.

1. Introduction to Ocean Literacy for MSP

1.1 Regional needs

Maritime spatial planning, since the MSP Directive which created a framework for its implementation in EU basins, had a clear objective. “The aim of ensuring that the greatest number of stakeholders who depend on maritime space can carry out their activities in an equitable, sustainable and collaborative way” (EC, 2021). Indeed, MSP, employing an ecosystem-based approach, can help provide important management in terms of environmental protection and sustainable transition of blue sectors, reducing conflicts between sectors and identifying possible synergies. Regional institutions must be included in the co-design of management and regulatory tools, being able to act as bearers of local needs.

The local needs of coastal populations can be broadly grouped in terms of the conservation and promotion of cultures, ensuring the protection of environments and landscapes, and the extent to which economies support coastal societies equitably. In these terms, the importance of explaining to local stakeholders the tools available at national and regional level/scale through which it is possible to establish management of activities and ecosystems and the channels through which they can express their opinions becomes evident. Stakeholders, before expressing their needs and opinions, should be informed of the general framework of a given area and appreciate the complexity of management capable of satisfying most needs.

Regional institutions can play an active role in informing stakeholders, considering, as indicated by the European Commission, that in communicating MSP it is essential to create "dedicated communication strategies from day one: from informing sector representatives on a timetable of actions, to raising awareness of local, regional or national consultations on priorities relating to access to maritime space, up to the dissemination of the publication of MSP strategies". Another aspect highlighted is that "the language style and methods used should be adapted to the recipients and their different degrees of thematic knowledge and competence, in response to their specific expectations and requests".

Overall, an informed and literate population will be easier to engage during official consultation processes. Furthermore, relations between institutions and the private sector will be stronger, thanks to the recognition of socio-economic value and a more regular flow of information.

1.2 Ocean Literacy as a tool to facilitate commitment and understanding

¹⁷ International Guide on MSP (IOC-UNESCO, 2021)

Ocean Literacy is the result of the efforts of a group of ocean scientists and education professionals in the United States in 2002, who identified the need to develop a comprehensive framework to encourage the inclusion of science oceanic in national and state educational standards. The ocean literacy movement has spread throughout the world, and "Ocean Literacy " has come to cover a broader range of cultural production and dissemination based on accurate scientific knowledge. Ocean literacy can therefore easily be used to educate current and future economic actors on ecological transition and resource management processes, including MSP, on their legislative and spatial instruments and on the specificities of the sectors involved, including nature protection. Finally, for the general public, ocean literacy for MSP can be a cultural framework in which the complex and highly technical aspects of marine protection and MSP are presented in a more accessible way. The strategy presented here intends to define the scope and actions that the Region could put into practice in the coming years, networking a series of aspects and key players: Regulation, Education, Culture and Research. Regional schools, museums, parks, research centers, artisans, economic actors. Aspects that have been taken into consideration to map existing opportunities. The ultimate outcome we are aiming for is a Literacy offering that can enable the integration of maritime ecological transition and MSP topics (e.g. data, policies, sectors) so as to make them available to a broad audience.

Oceanic literacy for MSP, proposal for a definition

Ocean literacy is usually defined as “the understanding of human impact on the ocean and its impact on our lives and well-being.” In the early 2000s, a group of ocean scientists and education professionals in the United States began a collaborative process to develop a comprehensive framework that would encourage the inclusion of ocean sciences in national and state education standards. Since then, the scope of ocean literacy has become much broader and aims to touch people's lives and support and encourage citizens and stakeholders to take positive action for our ocean. Modern ocean literacy initiatives provide a way to advance sustainable practices, develop policies, promote responsible citizenship, and encourage young people to get involved in the future.¹⁸ PSM-oriented ocean literacy therefore requires an understanding of how maritime activities interact and exist, sometimes impacting, in the environment. An MSP-OL literate person should understand the social and environmental implications of maritime activities and man's socio-cultural-economic relationship with the sea.

Proposed principles of ocean literacy for PSM

1. All life on Earth, including humans, depends on the ocean.
2. The ocean and man are inextricably linked: man has strong economic, historical, cultural and even emotional ties with the ocean.
3. Human activities impact the environment.
4. There is only one ocean, ocean governance is a human good that should facilitate the management of mobile resources.

¹⁸ Ocean Conservation Trust <<https://oceanconservationtrust.org/ocean-advocacy/think-ocean/what-is-ocean-literacy/>> [Accessed 26 May 2023].

5. Maritime spatial planning can help reduce impacts and ensure the coexistence of human activities and the protection of ecosystem services. Including economic value, tangible and intangible heritage.
6. Maritime spatial planning must ensure that future generations have access to marine resources and are aware of long-term management.
7. Maritime spatial planning is a safe framework for maritime stakeholders, from all sectors and levels of governance, to express their views.

1.3 Target groups

Different target groups have different needs:

Schools need to develop courses and curricula with often scarce resources; Creating a network with research centres, including a contact repository, can help alleviate this situation.

Students can gain a general understanding of the ocean and human relationships with it. But also, a basic understanding of the PSM process as part of their geography or science curriculum, noting that so far, the best results have been achieved in the older age groups.

The socio-economic actors (sectoral stakeholders), in addition to the basic notions relating to sustainable development strategies and the MSP process, must understand the ecological aspects and some interactions between activities. Furthermore, they need to be clear about why it is important for them to be part of a bottom-up approach, such as making their voices heard and participating in the formal process. Governance/management stakeholders need to be well aware of the socio-economic aspects of MSP and need to know how they can participate in and facilitate the planning process.

The public administration can obtain more information on the processes active at regional and national level, in order to better support them and participate fully in communication actions aimed at citizens, especially on the occasion of the opening of public consultations.

The general public benefits from more information on the general vision of Italy and the Sardinia Region regarding the use of the sea and the protection of the marine environment. Furthermore, you can be informed about the research and activities taking place on the island and/or in cooperation with Italian and foreign bodies. Finally, you can receive advice on daily and personal gestures that contribute to better management of the marine environment.

Research bodies and Environmental and Sustainability Education Centers (CEAS), communication experts and producers of local culture, participating in a regional network are not only active actors but are informed about activities at a regional level, encouraging collaborations and contaminations. Also, through rapid information on financing and tender possibilities.

2. A regional strategy: vision and objectives

The overall ocean literacy goals for MSP ¹⁹are:

- awareness and better understanding of MSP processes at subnational, regional and local levels for stakeholders and citizens). and their role in the processes

¹⁹ Identified by cross-checking the PSM Directive, the UNESCO Toolkit and the Communicating MSP booklet (2021)

- awareness and better understanding of ecosystem-based management, including communication of knowledge and data.
- raising awareness and improving knowledge on scientific research and socioeconomics in the marine and ecological fields.
- Improved knowledge of maritime activities and cultures. and the emotional connection with the sea

In fact, if we consider Ocean Literacy as a public policy asset that includes multidisciplinary (geography, planning, statistics, economic policy, etc.) and multiscalar aspects, especially as regards governance levels, it can contribute to improving cohesion territorial. From the analysis of practices and literature, it is possible to identify a common network capable of reducing land-sea imbalances (economic-social, environmental, and cultural) in the framework of maritime spatial planning.

2.1 Specific Objectives

Specifically, the Strategy for the promotion of ocean literacy in the Sardinia Region aims to capitalize on the excellent experiences present in its territory, creating a synergetic and virtuous system in which educational, informative and cultural initiatives relating to the sea are properly publicized and are known, in moments in which public involvement is necessary, promote the participation of local economic actors.

The main objectives of the strategy are:

1. Promote education and awareness about the protection of the marine environment.
2. Promote the local maritime economy and its sustainability aspects.
3. Promote local cultural and artisanal creativity linked to marine and maritime themes.
4. Promote a "citizenship of the sea" in which the inhabitants of the region are responsible and informed citizens capable of supporting sustainable political choices and participating in participatory policy processes.

3. Context general from the Region Sardinia

3.1. Socioeconomics, an MSP assessment

The Sardinia region has a coastal development of approximately 2,900 km. The Municipalities affected by administrative relevance in the coastal area are 72 of which n. 27 facing the Tyrrhenian Sea, 38 on the Sardinian Sea and 10 on the Sardinia Channel, including three municipalities that have a development of the territory administered on two seas.

The regional economy is mainly driven by the tertiary sector, with important data regarding tourism. The secondary sector is the second driving force, capable of exporting both nationally and internationally, and finally the primary sector which also includes fishing. The most recent data (2022

²⁰⁾ describe a Sardinia region which is recording a contraction in population and jobs (two data which obviously influence each other). However, the Region notes encouraging data regarding the reduction in school dropouts and the population below the poverty threshold. These are data that still record the Covid contractions but in which we can still read a Region projected towards growth that may be interested in seizing the opportunities of sustainable development (renewable energy, aquaculture, etc.) that the strategies and the PSM want to encourage.

Within the plans of the Italian maritime space (in progress) the territorial waters of the respective coastal regions are in turn divided into maritime compartments, which for the Sardinia region are: La Maddalena, Olbia, Cagliari, Oristano and Porto Torres.

Food production

The waters of the seas of Sardinia are characterized by the presence of *Posidonia oceanica* in waters up to 40 meters deep. This characteristic allows the development of many fish species. Among the most common are amberjack, sea bream, sea bream, croakers, sea bream, scorpion fish, and weevers. In the northern part included in the Cetacean Sanctuary there are numerous species, the most representative of which are the fin whale and the common dolphin. Furthermore, despite the notable influx of tourists, numerous *Caretta caretta* turtles can be found breeding on the sandy beaches. In these seabeds it is easy to observe red coral at a depth between 5 and 20 metres, while going deeper you can find black coral. Worthy of note is the protected area of Asinara where there are still uncontaminated seabeds.

These waters are widely used by the fishing sector and given the prevalence of seabeds with depths greater than 100 m, activity in surface and intermediate waters is preferred. The most relevant sector is that of small-scale fishing both in terms of social, employment and economic numbers. This type of fishing extends widely along the Sardinian coasts and has a significant impact on the annual turnover of the entire sector due to its considerable economic value. This system also allows you to adapt fish sampling to a seasonal regime with the use of different tools depending on the abundance of the species in that period. At the same time, however, trawling represents a very high share both in terms of catches and economic factors. The bulk of the fleet can be found near Cagliari, where around 60% of the boats are registered. The effort in GSA 11, Sardinia, is located in the area in front of the Gulf of Cagliari and in the Gulf of Asinara. Offshore areas are extensively affected by fishing activities.

In addition to fishing, aquaculture is also practiced, especially with fish farming systems in cages, capable of significantly contributing to national production. Shellfish farming is still practiced, with important realities in the Gulf of Olbia.

Energy

Among the significant maritime activities, the energy sector is also worth mentioning: the Pniec 2020 foresees that in the gas sector several projects for small-volume coastal LNG (SSLNG) deposits are

²⁰Annex 2 to Delib.GR . n. 14/6 of 29.4.2022: The socio-economic context for the three-year plan for the prevention of corruption and transparency, Sardinia Region
<https://delibere.regione.sardegna.it/protected/59652/0/def/ref/DBR59630/>

currently being authorized and evaluated by the Ministries of Environment and Transports, to be built also in Sardinia for the unloading of LNG from small-sized methane tankers, storage and subsequent loading onto barges (bunkering) and onto cryogenic tankers for the supply of civil and/or industrial customers and fuel refueling stations. In particular, in Sardinia, two of the three initiatives presented involve the coupling of SSLNG and mini-regasifiers.

As regards the seabed, the Sa.Co.I electrical interconnection is worth mentioning. (Sardinia–Corsica–Italy) In the area there is the 420 km long SAPEI submarine electric cable that runs between Sardinia and Lazio, passing at 1600 meters on the bottom of the Tyrrhenian Sea. It is the deepest submarine cable in the world and is made up of two cables, with a total capacity of 1000 Megawatts.

In the area there is also the direct current connection Italy–Corsica–Sardinia SACOI which runs between Italy/Tuscany (Sovereto), Corsica (Lucciana) and Sardinia (Codronggiano).

The region is also concerned with 20 wind power proposals in southern Sardinia. These are applications for marine state concessions for the construction of an equal number of floating offshore wind farms, or 1,031 planned towers, with a total capacity of 17,048 MW, of which 13,890 MW are connected to the island's electricity system and another 3,158 MW are connected to the peninsular electricity system (Sources Ansa, June 2023)²¹.

The construction of a new interconnection network for the exchange of electricity between the Italian mainland, Corsica and Sardinia called SA.CO.I3 is planned.

Tourism

Finally, tourism must certainly be mentioned, a resource that offers considerable possibilities for economic development in terms of job creation, diversification of the production structure, safeguarding cultural specificities, protection and enhancement of the environment; although it has long been considered a strategic "industry" with respect to the development objectives of the Region, to date the potential offered by the sector has not yet been exploited appropriately.

In line with the provisions of the Strategic Tourism Plan 2017-2022, a document that outlines a common policy and puts tourism economic planning at the center of the country's development policies, Sardinia's tourism system wants to innovate by investing in its capital territorial, to intercept and conquer new flows, break down the current seasonality framework and become a destination of interest for different markets and segments.

Seaside tourism also acts as a driving force for other tourist products; non-beach tourist products have less capacity to attract tourist flows; the strong dependence on seaside tourism conditions the development of the sector.

The measurement of the value of the online tourist offer reveals that there is a high prevalence of the seaside product (Seaside is a type of tourism that involves the use of the beaches and the sea, which undoubtedly represent the main tourist attractor of Sardinia, generating over 70% of total arrivals and contributing decisively to the Region's GDP).

²¹ Pale eoliche off shore nel sud Sardegna, 20 richieste - Notizie - Ansa.it

The island has a total of 240 beaches, half of which offer organized services to support seaside activities, such as beaches and bathing establishments spread across the entire regional territory. The highest number of beaches is concentrated in the coastal strip of southern Sardinia, in particular in the Cagliari area, of which five out of seven beaches offer essential and even advanced services, such as boat rental and access for disabled people, while on the coast eastern, which goes from Costa Rei to Villasimius, 17 out of 23 beaches are equipped with services for bathers. The areas in which there is a lower concentration of served beaches are the Iglesiente, the Costa Paradiso and the Maddalena archipelago.

Sardinia has 43 beaches awarded with the Blue Flag of the FEE (Foundation for Environmental Education) which meet particular requirements for the healthiness of the water, respect for the environment and the quality of the services offered to bathers. The Blue Flags are distributed in 13 locations between Gallura, the Province of Sassari, Ogliastra and Southern Sardinia (2018 data), to which are added the "Tourist Landings Blue Flags" for ports equipped with piers and piers for yachtsmen. There are also 24 Green Flags, which reward the beaches most suitable for children. There are 35 beaches open to dogs and they are generally managed by volunteers.

Ports

Furthermore, Sardinia is equipped with a large and complex port system that extends over all the coasts of the island and can count on a network of 53 equipped tourist ports and 80 landing places for yachtsmen. It represents an excellence in Italy and in the Mediterranean basin: its ports with almost 20 thousand berths constitute 44.4% of all the structures in the Northern Tyrrhenian area, which has a total of 180 ports divided between Liguria, Tuscany and Sardinia.

However, the distribution of moorings is not homogeneous across the territory: 63.3% of the ports are located in the northern area, in particular in the provinces of Olbia and Sassari, on the Costa Smeralda, in the Maddalena archipelago and in the protected area of Capo Hunting. 27.5% of the ports are concentrated in southern Sardinia, distributed between Villasimius and Costa Rei and the islands of Sant'Antioco and Carloforte. The distribution of the structures is, however, sparser and more irregular on the eastern and western coasts.

As regards the infrastructural offer, in Sardinia there are a total of 4,988 registered structures, including hotel and non-hotel facilities, which offer a total of 212,751 beds.

Sardinia is connected by sea with the Italian peninsula and with some ports in France, Spain, Africa and with industrial ports of other states and continents. The embarkation points are: Cagliari, Olbia, Palau, Golfo Aranci, Porto Torres and Arbatax.

Sardinia is the second Italian region, after Calabria, with the highest seasonal concentration rate of tourist presence: more than 3 million in the months of July and August. The monthly breakdown of tourist arrivals and presences in Sardinia in 2016 shows that 80% of arrivals are concentrated in the period from May to September (compared to a concentration of tourist arrivals of 59% on a national basis).

3.2 Environment marine and protection environmental

The Sardinian marine environment is rich in biodiversity and presents biological and landscape features of great interest, often protected through various instruments ²².

MPAs

Marine Protected Areas are characterized by the presence of physical, geological, geomorphological, biological formations or groups of them of significant naturalistic and environmental value and/or the existence of naturalistic values. In the Sardinia Region there are 6 Marine Protected Areas, listed below:

Sinis Peninsula Marine Protected Area - Mal di Ventre Island

Tavolara Marine Protected Area - Punta Coda Cavallo

Capo Caccia Marine Protected Area - Isola Piana

Capo Carbonara Marine Protected Area

Asinara Island Marine Protected Area

Capo Testa Marine Protected Area - Punta Falcone

National and Regional Parks

In the Sardinia region there are also two National Parks, namely the Asinara Island National Park and the Maddalena Archipelago National Park.

National parks are made up of terrestrial, river, lake or marine areas that contain one or more intact ecosystems or even partially altered by anthropic interventions, one or more geological, geomorphological, biological physical formations of international or national importance for naturalistic, scientific values, aesthetic, cultural, educational and recreational such as to require State intervention for the purposes of their conservation for present and future generations.

Regional parks, on the other hand, are areas of naturalistic and environmental value, which constitute, within one or more neighbouring regions, a homogeneous system, identified by the naturalistic structures of the places, the landscape and artistic values and the cultural traditions of the local populations.

The parks currently established in the marine area are the Porto Conte Regional Natural Park established by Regional Law 26 February 1999, n. 4 and the Molentargius - Saline Regional Natural Park established by Regional Law 26 February 1999, n. 5.

PELAGOS

The region also hosts part of the Marine Mammal Sanctuary, also known as "Pelagos", was established in Italy by the Ministry of the Environment and Land Protection following the Tethys initiative research institute which in the years 1989-1991 carried out the research activities of the "Pelagos Project" for the creation of a Biosphere Reserve in the Corso- Liguro -Provenzale basin which shows the highest concentration of marine mammals among all the Italian seas (dolphins , whales, etc.). In November

²² Information taken from <https://portal.sardegnasira.it/web/sardegnaambiente/aree-protette-e-tutelate>

1999, the Ministers of the Environment of France, Italy and Spain signed the agreement which establishes the shared minimum rules for the Cetacean Sanctuary, which will be ratified by the Italian Government in 2001 with L.391. The sanctuary covers an area of approximately 100,000 km² and includes the waters between Toulon (French coast), Capo Falcone (western Sardinia), Capo Ferro (eastern Sardinia) and Fosso Chiarone (Tuscany).

Areas of significant Interest

In addition to these there are also areas of significant naturalistic (RIN) and environmental interest, i.e. those which, by virtue of their status, or due to their relationships with parks, reserves and/or natural monuments, require protection and regulations for specific use (Art.4 paragraph 2 – L.31/89). The RIN areas are established by Establishing Decree of the Councilor for Environmental Protection.

In Sardinia the RIN areas established are the Rin Monte Zara Roverelle Area in the Municipality of Monastir (CA), established with Decree 31069/109 of 05/12/2008, and the Area of Significant Naturalistic and Environmental Interest of Teccu in the municipality of Bari Sardo, established with Decree 21347 of 09/25/2013.

The Teccu Area of Significant Naturalistic and Environmental Interest is located along the central-eastern coast of Sardinia, in the stretch of coast between Cea beach to the north and Bari Sardo beach to the south.

Natural Monuments

Finally, natural monuments are highlighted, i.e. individual elements or small surfaces of particular naturalistic or scientific value, which must be preserved in their integrity (Art.4 paragraph 1 – LR 31/89). The natural monument is an object of nature that attracts attention due to a character - or a set of characters - that isolates it from similar forms, making it particularly worthy of attention and protection through inclusion among protected natural areas. Natural monuments are established by decree of the Councilor for Environmental Protection.

In the coastal area, the following should be noted: S' Archittu di Santa Caterina, an enchanting cliff of sedimentary limestones from the Middle Miocene, divided into promontories and coves, located in the southern coastal area of the Montiferru region. Le Colonne, located at the southern tip of the Island of San Pietro, in a splendid coastal setting of headlands, coves and cliffs. Grand Canal of Nebida, splendid inlet on the coast, between Masua and Bugerru. Pan di Zuccheru Faraglioni di Masua, which stands in the magnificent inlet of Masua, a small mining center on the Iglesiente coast.

3.3 Cultural heritage

The Sardinia Region has an ancient history, and the archaeological cultural heritage is an important testimony. From the ancient Nuraghe that dot the internal mountains, from the finds of the

Phoenician settlements, and from the ruins of the rich Roman cities on the coasts, the importance of a region emerges clearly, an island which for centuries has played a role of primary importance - strategic, maritime and economic - in the Mediterranean. To date, the Sardinia region's attention to its cultural heritage linked to the sea, to its relationship with the landscape, to the dynamics that intertwine between protection, promotion and planning is very clear and growing.

Proof of this is the numerous events ²³that deal with the topic, and which could also highlight, in their submerged component, the role of the PSM in managing and promoting underwater archaeological sites.

Among the most relevant bodies for the SRAO-PSM, we must mention the Superintendence of archaeology, fine arts and landscape for the metropolitan city of Cagliari and the provinces of Oristano and southern Sardinia (ABAP-CA), the Archaeological Superintendency for the Provinces of Sassari ²⁴and Nuoro and, in terms of collaboration at a national level, the National Superintendency for Underwater Cultural Heritage ²⁵.

Of course, the main museums close to the coastal areas are worth mentioning, once again preferential places for sharing advances in terms of protection, management and valorisation of historical-cultural resources.

Archaeological Museum of Cagliari

Archaeological Museum of Olbia

Archaeological Museum of Alghero

Giovanni Sanna National Museum, Sassari

Archaeological Museum of Oristano

Dorgali Archaeological Museum

Further bodies and associations potentially involved are Anci Sardegna, the Association representing the Sardinian Municipalities, the Mont'e Prama Foundation, the Archeosub Sassari-Alghero Research Center (CRASA)²⁶.

Among the numerous sites of archaeological interest in Sardinia (a good mapping is in: <https://www.donnanuragica.com/mappa-siti-archeologi-della-sardegna/>) the most spectacular and overlooking the sea are the city of Tharros ²⁷on Sinis ²⁸, in the province of Oristano and the city of

²³ The Superintendency of Archaeology, Fine Arts and Landscape for the metropolitan city of Cagliari and the provinces of Oristano and southern Sardinia (ABAP-CA) organized - on the occasion of World Landscape Day - the study day Landscapes from the sea. Day of study and reflection on the relationship between the city and the sea (Cagliari 14.3.2023), a discussion on the issues related to the relationship between the city and the sea with particular reference to the landscapes that this relationship builds, in a historical and future temporal perspective. Furthermore, mention is made of the international conference promoted by "Sardinia towards UNESCO" Sardinia, the Island of the Nuraghi (Cagliari 16-17.11.2023) which, starting from the promotion of the Nuragic archaeological sites, went so far as to analyze the entire network of UNESCO sites in Mediterranean contexts, and to discuss and define the importance of historical disciplines in the context of the management of complex cultural systems. Sardinia towards UNESCO <https://sardegnaversounesco.org/>.

²⁴ <https://sabapca.beniculturali.it>

²⁵ <https://www.beniculturali.it/ente/soprintendenza-nazionale-per-il-patrimonio-culturale-subacqueo>

²⁶ <http://web.tiscali.it/crasa/>

²⁷ <https://www.tharros.sardegna.it/> and <https://www.areamarinasinis.it>

²⁸ Sinis already had a commercial Nuragic settlement in the 2nd millennium BC, Tharros was then founded by the Phoenicians in 800 BC which passed to the Romans at the beginning of the 3rd century BC. The city was inhabited and transformed until the 11th century, when it was abandoned by the Archbishop to give rise to Aristiane, the current Oristano. Now you can swim on the beach admiring the columns of the Roman tetrastyle temple, or attend a concert in the ruins of the theatre, on the descent from the promontory. Natural Park and

Nora, located on Cape Pula, near Cagliari. Both sites are maritime cities, one on the southern, the other western side of the island; both are strategically placed on headlands and surrounded by lagoons; both present a stratification of remains from different eras, evidence of the use of the sites from the Bronze Age to the Middle Ages.

Also, in Nora²⁹ you can admire spas, floor mosaics, colonnades and the splendid 2nd century theatre. AD, together with the remains of a Phoenician tophet and next to Nuragic necropolises. Part of the city is submerged due to marine erosion and coastal subsidence, and is a constant subject of underwater archaeology research by the University and the Superintendencies, as well as a great attraction for diving tourism. Although it had been known since the 18th century, the excavation and opening of the archaeological site of Nora took place in the 1950s thanks to Superintendent Gennaro Pesce: the operation had as its objective the restitution of its history and identity to the Sardinian population, but it also inaugurated the good practice of integration between seaside and cultural tourism. This virtuous relationship serves as an example to understand how cultural heritage can become a fundamental driver in creating awareness and appropriation of the territory, but also in promoting a renewed blue economy.

Also, in the Capo Testa – Punta Falcone Marine Protected Area, operations are underway to enhance the submerged heritage, and the Lu Brandali Archaeological Site, Santa Teresa di Gallura, is worth mentioning. Finally, mention should be made of the Archaeological Park of Turrigalvone, Porto Torres, Nuragic complex of Palmavera, Alghero, City of Sulki, Sant'Antioco and Nuraghe Mannu Arvu and Longu, Dorgali.

The Region therefore reserves the right to promote aspects of submerged heritage, landscape and ancient culture (whether tangible or intangible) within the scope of the PSM and this strategy, encouraging dialogue between entities and educational and cultural promotion also in function of maritime and coastal tourism development.

3.4 Administrative context

3.4.1 Legislative framework

In this section the most relevant laws and strategies for the ROLS-MSP are mentioned. The Region has equipped itself, through Resolution No. 11/66 of 03.24.2021³⁰, with a positioning document on PSM³¹. Through this resolution the Region resolved:

archaeological site integrate in a wonderful osmosis of landscape, art and history which deserves maximum protection but also continuous research for sustainable development.

²⁹ <https://www.beniculturali.it/luogo/area-archeologica-di-nora>

³⁰ <https://delibere.regione.sardegna.it/protected/54696/0/def/ref/DBR54602/>

³¹ <https://delibere.regione.sardegna.it/protected/54697/0/def/ref/DBR54602/>

- to approve the positioning document of the Autonomous Region of Sardinia within the Maritime Space Planning provided for by Directive 89/2014/EU and by Legislative Decree 17 October 2016, n. 201, with the value of a long-term strategic planning act regarding the Blue Economy and Sustainable Blue Growth of the Sardinia Region;
- to provide, therefore, for the connection of the positioning document with the Unitary Programming and with the programming of community, national and regional resources of the 2021-2027 ESI Funds, with the Economic and Financial Document and with the regional development programme;
- to give a mandate to the Sardegna Ricerche Agency and, for it, to the Centro Marino Internazionale Fondazione IMC Onlus, part of the "Regional research and innovation system", as defined by the art. 7 of LR n. 20/2015, in order to guarantee the Inter-departmental Committee, the necessary scientific-technical assistance until the planning process is completed.

The document specifies that the Region, in terms of vision and objectives, applies to the PSM based on the Regional Sustainable Development Strategy and consequent resolutions³².

The transversal pillars are (i) A smarter Sardinia, (ii) A greener Sardinia, (iii) A more connected Sardinia, (iv) A more social Sardinia, (v) A Sardinia closer to citizens.

We therefore note how the latter especially can be supported by a Strategy for Ocean Literacy. Some of the objectives of the strategy, albeit indirectly, are aimed at correct ocean/marine literacy of communities and correct sustainability of marine anthropic activities. That is to say:

- Improve the production, quality and sustainability of agricultural, livestock and fish products and make the supply chain more efficient.
- Creation of material and immaterial interventions for conscious and responsible tourist use
- Ensure sustainable management of the coastal strip and maritime space
- Regulation of the collection and disposal of marine waste (marine litter), which includes the problem of microplastics at sea

Climate Change Adaptation Strategy³³ should also be mentioned since an expansion of the section dedicated to the coast and transition environments (with regard to biodiversity, ecosystem services, and coastal protection) is currently underway, considering that in the region many of the climate risks are aggravated by the isolated geographical conformation and further amplified by the anthropic settlement pressure and tourist. However, this can also represent a favorable point, as the coast and transition environments are an important basis for Sardinia for the development of blue and green nature-based adaptation solutions.

³² <https://www.regione.sardegna.it/argomenti/argomenti-speciali/sardegna2030-strategia-regionale-di-sviluppo-sostenibile>

³³ <https://portal.sardegna2030.it/strategia-regionale-di-adaptation>

Finally, the Region has equipped itself, through Delib.GR . n. 13/24 of 4.3.2008 of a Statute **of the Coastal Conservation Agency of Sardinia** ³⁴. This statute has the purpose of:

safeguard, protection and enhancement of coastal ecosystems and integrated management of coastal areas of particular landscape and environmental importance, owned regionally or made available to it by public or private entities.

Among the functions of the Agency we find points a) *the coordination of regional initiatives regarding the integrated management of coastal zones in relations with the other Italian regions and with the local authorities of the countries bordering the Mediterranean;* b) *the coordination of initiatives regarding the integrated management of coastal zones implemented by the regional Administration, local authorities and management bodies of protected areas or other areas and sites of community interest;* which fits well into the land-sea interactions contemplated by the PSM legislation and into a discussion of cross-border and interregional cooperation for ocean literacy. But above all it is point c) *the promotion and dissemination of issues relating to environmental and landscape protection and the sustainable development of coastal areas;* which turns out to be particularly relevant for this strategy, as it makes the Agency a privileged actor for the co-management of the strategy itself.

3.4.2 Potential supporting system for the Sardinian Ocean Literacy strategy

3.4.2.1 Networks: The System Information Training and education to the Environment and Sustainability (INFEAS)

From an operational point of view of strategy implementation, Sardinia has an active regional system that can act as a structural element. INFEAS is *a network organization that promotes the pursuit of shared objectives of environmental and sustainability education, through actions and initiatives developed in collaboration with the various administrations, bodies, organizations and associations operating in the sustainability education sector.* The system works on the basis of territorial nodes and CEAS, the Environmental and Sustainability Education Centres. They are *territorial and multifunctional service structures, which carry out environmental and sustainability education activities. The Sardinia Region intends to systematize the Environmental Education Centers present in the territory and create a network of CEAS that is strategic for the growth of the culture of sustainability in Sardinia. The CEAS are currently the main observatories of local environmental systems, as well as points of reference for the animation and participation of citizens and businesses, activators of good practices and interventions dedicated to environmental education and sustainable local development. The CEAS are structures of a public nature, as they belong to a Municipality or a Park Authority (Owner), with management generally entrusted to cooperatives or associations of a private nature (Managing Body). Currently, both the CEAS accredited and certified by the Sardinia Region and the CEAS which are not*

³⁴ https://www.regione.sardegna.it/documenti/1_73_20080305120641.pdf

yet accredited are part of the network. Main functions are: education activities for sustainable development; information and documentation; territorial animation; activation of resources, initiatives, projects and programs for sustainability.

Recipients The activities of the CEAS are aimed at a variety of subjects: schools, local communities, the world of associations and volunteers, freelancers, public administrators, public and private bodies, trade associations and associations representing citizens, businesses and universities.

The system is coordinated by the Regional Coordination Center made up of the INFEAS Technical Group (or Regional Technical Table), chaired by the Director of the Environmental Sustainability and Information Systems Service (SASI) of the Department of Environmental Defense and composed of representatives of: Territorial nodes INFEAS; Regional departments (Public Education, Tourism, Crafts and Commerce, Agriculture and Agro-Pastoral Reform); Forestry and Environmental Surveillance Corps; Civil protection; Fo.Re.STAS Agency .; Regional School Management; Regional Agency for Environmental Protection of Sardinia (ARPAS); Environmental protection associations; CEAS (Environmental and Sustainability Education Centers) ³⁵.

The system is therefore identified as the supporting skeleton for the implementation of this strategy, first of all by including MSP among the proposed themes and expanding the aspects of marine environmental protection. Further aspects of CEAS intervention are reported in the thematic sections. PSM, for the purposes of informing CEAS operators, could be included among the topics covered by the ARPAS Scientific Days ³⁶.

3.4.2.2 Coordination

The strategy is therefore developed as a network coordinated by the Sardinia Region through an inter-departmental system, not dissimilar to the Inter-departmental Table established at the Department of Local Authorities, Finance and Urban Planning in order to allow the Regional Administration to participate fully and consciously in the planning process of Maritime Space Planning. In particular, the business center can be located within the Sea District envisaged by the measure in the draft maritime space plan, Tyrrhenian Area (MO/7)_MIS/36 (Scientific research and innovation): *Promote the establishment of the Sardinian Sea District with the aim of creating an environment institutionally dedicated to relating and encouraging exchanges between the world of research, basic and applied, and businesses, technological transfer and the birth of high- tech start-ups.* In this sense, the dialogue between the Department of local authorities, the Department of the Environment (SASI Service), the Department of Agriculture and agro-pastoral reform, the Department of public education, cultural heritage, information, entertainment and sport and the Sardinia Coast Conservation Agency can allow a complete strengthening of existing systems with a view to promoting the sustainable blue economy, the protection of the marine environment and a better knowledge of participatory PSM processes.

³⁵ <https://www.sardegnaifeas.it/infeas/>

³⁶ <https://www.sardegnaambiente.it/index.php?xsl=611&s=21&v=9&c=95844&es=4272&na=1&n=10>

Regional Strategy for Ocean Literacy- MSP: Sardinia Region

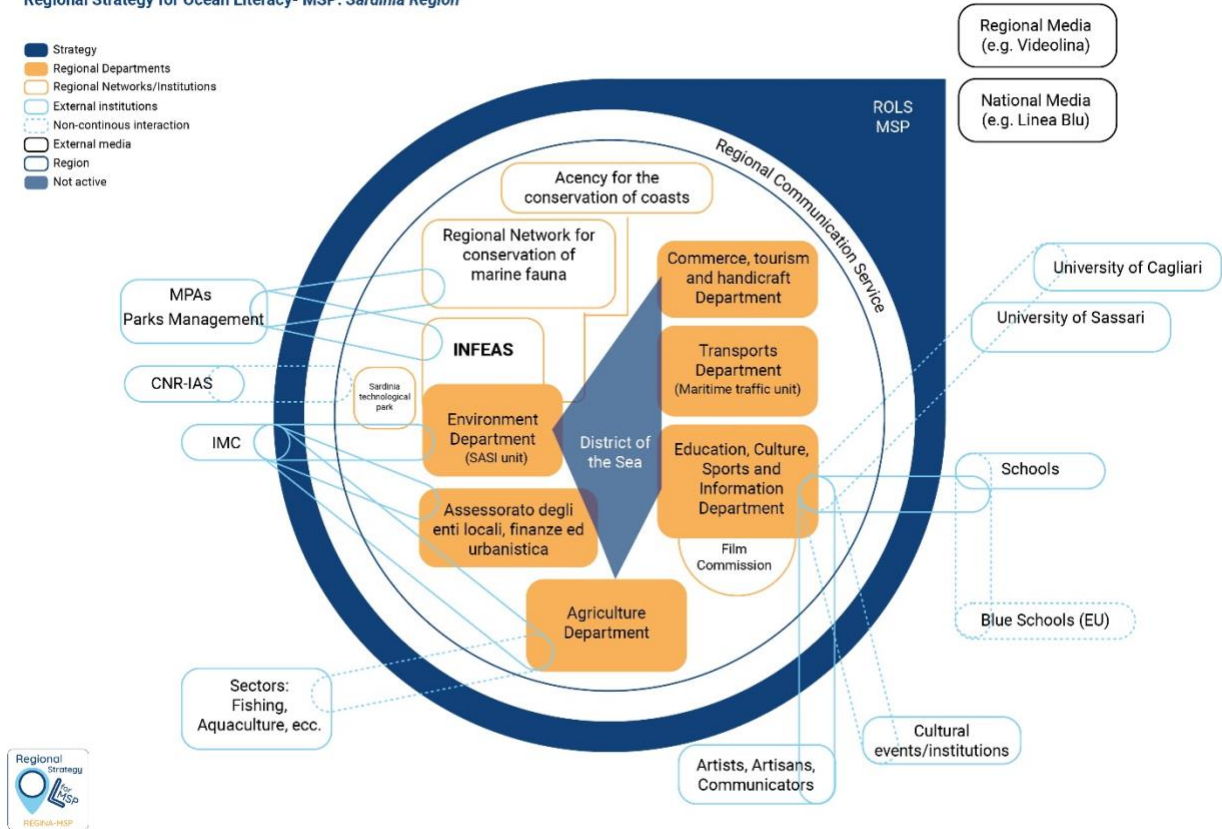


Figure 1: proposal scheme for coordination and interaction between entities

3.4.2.3 Financing

In line with the 2030 Agenda, the Department of the Environment allocates direct funding to environmental education and manages it starting from two-year guidelines, as emerges from Resolution N.30/52 of 09.30.2022³⁷. These are important investments for 3,000,000 euros in the two-year period 2022/2023. To those, it must be added the funds that various entities attract independently through participation in European, national, etc. projects. Through the support of other departments and a network capable of exploiting existing resources, it is believed that the SRAO-MSP will not cause further excessive costs and could, on the contrary, be a promoter of economic development. The main costs are identified in the administrative and coordination sector, which could however be part of a broader Regional development action linked to the creation of the Sea District.

4. Develop the state of the art

³⁷ <https://delibere.regione.sardegna.it/protected/61833/0/def/ref/DBR61832/>

The SROL, as anticipated, aims to be an element of valorisation of existing practices and the socio-cultural peculiarities of the context in which it is applied, proposing an approach tailor-made for each Region that intends to adopt it.

4.1 Education

In the Region, schools at all levels have moments dedicated to scientific education, with moments dedicated to raising awareness of the environment. Environmental education certified by the Region can in fact be activated at various bodies through a specific request³⁸. The Region reserves the possibility of activating a specific sub-category relating to teachings for the marine environment and for the sustainability of maritime activities. It should also be noted that a secondary school, the Liceo E. Fermi in Alghero, participated in the European Blue Schools project. This virtuous experience within the Region represents an example for other institutes of various degrees. The Region will promote information relating to joining the network of European blue schools that is now developing in Europe.

Blue School

A European Blue School is a school, that via project-based learning, engages students with marine- and maritime-related topics to create awareness and a feeling of responsibility for our ocean. The concept of European Blue School evolved from the marine education expertise gathered from consultations with teachers and educators across Europe. It acknowledges the variety of cultures and school communities from the 27 EU Member States and champions the concept of open schooling – encouraging the development of local partnerships to make the learning context relevant. Teachers are seen as the main actors who bring the concept of Blue Schools to life. Curricula, educational systems, and government requirements differ from Member State to Member State but teachers have the opportunity to explore the connections to the ocean according to several subjects. The EU promotes this voluntary network and joining it is free of charge and this gives access to educational materials and the possibility of knowledge exchange and cooperation.

The network can be joined online ³⁹.

4.2 Protection, Search science and dissemination

The Sardinia Region hosts important parks and marine areas in which study and awareness-raising actions are carried out in contact with the public.

Research centers and universities can be of various nature, for example public or multi-stakeholder at different levels (national, regional, private, etc.). They also play uneven roles: some create useful knowledge to be shared, others play a direct role in training and dissemination. Their plurality usually allows collaborations and cross-fertilizations.

³⁸https://www.google.com/search?q=assessorship+education+sardegna&rlz=1C1MKZV_itIT1083IT1083&oq=assessorship+education+sardegna&gs_lcrp=EgZjaHJvbWUyBggAEEUYOdIBCDY4MTNqMGo5qAlAsAIA&sourceid=chrome&ie=UTF-8

³⁹ www.maritime-forum.ec.europa.eu/theme/ocean-literacy-and-blue-skills/ocean-literacy/network-blue-schools_en

In Sardinia, the University of Cagliari ⁴⁰ stands out for its relevance on marine and maritime themes with a specific focus on teaching biology, marine bioecology, environmental and natural sciences. And the University of Sassari ⁴¹ with courses and research relating to Sciences, Mathematics and Computer Science.

4.2.1 Marine protected areas and parks

The Region hosts **marine protected areas and parks** which, in addition to carrying out direct protection activities, are involved, both as CEAS ⁴² and as independent bodies, in dissemination actions. These actions take place on the territory protected by them in fixed forms such as posters and in itinerant and discontinuous forms such as courses for schools, families, and publications.

Among the main ones are Capo Carbonara, the Nora Lagoon, the Asinara Park, the Asinara Marine Animal Recovery Center (CRAMA), Capo Caccia.

Sardinia also established, in 2005, a Regional Network for the conservation of marine fauna in Sardinia in which the General Directorates of the Department of Environmental Defense and the Forestry and Environmental Surveillance Corps participate in collaboration with the Port Authorities of Cagliari and Olbia, the naval units of the State Police and the Guardia di Finanza, the recovery centers of the Marine Protected Areas of Sardinia and the 'La Maddalena Archipelago' and 'Isola dell'Asinara' National Parks. They are currently part of the Regional Network for the conservation of marine fauna:

- *the Autonomous Region of Sardinia with the General Directorate of Environmental Defense - Nature Protection and Forestry Policies Service and the General Directorate of the Forestry and Environmental Surveillance Corps*
- *the Harbor Offices - Coast Guard with the Maritime Directorates of Cagliari and Olbia*
- *the Anton Dohrn Zoological Station of Naples*
- *the La Maddalena Archipelago and Asinara Island National Parks*
- *the Marine Protected Areas of Sardinia 'Capo Caccia-Isola Piana', 'Tavolara-Capo Coda Cavallo', Sinis Peninsula-Isola di Mal di Ventre' and 'Capo Carbonara'*
- *the Municipality of Pula in collaboration with the Cetacean and Sea Turtle Recovery Center 'Laguna di Nora'.*

It is noted that the network organizes numerous and constant information and awareness-raising meetings, even in schools of various types and levels, which "it *promotes and implements with the involvement of fishermen, tourist operators, diving centers operating on the coasts of Sardinia, contributing to the development of greater sensitivity towards the protection of the marine ecosystem, also encouraging the diffusion of good practices and correct behaviors aimed at preventing and reducing the causes of mortality linked to anthropisation*". ⁴³

⁴⁰ <https://www.unica.it/it>

⁴¹ <https://www.uniss.it/didattica/editore-formativa>

⁴² Complete list of CEAS on page. 29

⁴³ <https://www.sardegnaambiente.it/index.php?xsl=612&s=71619&v=2&c=4539>

This Network is therefore a privileged actor for disseminating knowledge related to PSM and the way in which this tool interacts with environmental aspects.

The Region is also directly involved in various European, national and Regional projects relating to marine protection and, as REGINA-MSP testifies, to maritime spatial planning. A complete list is updated on the portal.⁴⁴

Among the potentially relevant examples we mention the recent project linked to the CEAS network on the management of Marine Litter: PLASTICAMARE

4.2.2 Research centres

The Sardinia Region hosts several research centers that focus on marine sciences, also considering maritime spatial planning. Among the centers that are part of the Strategy is the IMC Foundation⁴⁵(province of Oristano) which scientifically supports the Region in various areas of marine research, including PSM. Furthermore, it actively carries out information and education actions. IMC was born thanks to EU structural funding (STRIDE) and is presently partly financed by agenzia regionale Sardegna Ricerche. Other funds are retrieved by participating to national and international call for tenders.

Furthermore, the Region hosts the CNR-IAS centre, near Oristano, a center that develops very useful knowledge relating to marine ecology and anthropic impacts, as well as linked to climate change, such as forecasting systems.

Finally, there are active recovery centers in some protected areas, including Asinara, the Sinis Peninsula and the Nora Lagoon.

4.3 Promote the regional cultural landscape

The Sardinia Region is interested in promoting local cultural production, enhancing a thousand-year-old intangible heritage and, at the same time, contemporary artists and artisans. In fact, this promotion promotes both tourism and local craftsmanship, as well as the dissemination of environmental issues. Some virtuous examples of this contamination in favor of environmental communication can be found in collaborations on environmental issues.

A virtuous and reproducible example has already been achieved in Sardinia: in fact the participation of the street artist Manu Invisible in the campaign to promote the Regional Sustainable Development Strategy represents an example of how local artists can be involved in management processes. In this case it was a video clip accessible at: <https://www.youtube.com/watch?v=v2d86Z1caMU>.

It is considered that writers, artists, craftsmen, musicians, singers, actors can be involved in this common effort. Certainly, promoting an interdisciplinary approach and cultural mix between arts and science at the CEAS. Based on the resources available, the Region reserves the possibility of activating calls for cultural competitions dedicated to marine sciences and activities. Likewise, the possibility, if

⁴⁴ portal.sardegناسira.it/progetti

⁴⁵ <https://www.fondazioneimc.it/>

useful, of contracting well-known artists and artisans will be considered in order to establish collaborations to raise awareness in the sector.

Furthermore, it should be noted that the Sardegna Film Commission Foundation ⁴⁶ is a reference for competence and commitment on environmental issues and could certainly be included among the bodies to be invited to support the promotion of Sardinian maritime activities.

4.3.1 Museums and libraries

Museums and libraries have the incredible task of giving access to what is there but not usually seen, especially regarding the technical aspects of maritime work, but also the vertical dimension of the sea and the ecological interactions within inside the biomes. They are important reference points for building a connection with history and cultures, especially with regard to underwater cultural heritage. The Sardinia Region hosts a series of places that can be visited where the population can be informed about the salient aspects at a local level in terms of management of territorial waters and protection of the marine environment. Of particular note are the Cala Gonone aquarium ⁴⁷, the Mediterranean Media Library (Cagliari) and the sea museums, where the works and knowledge of the sea are studied and transmitted. Among these we mention the Museum of Caprera, the Museum of Carloforte and the Giorgio Capai of Villasimius. A complete list of institutions, regularly updated, is accessible at: Complete list accessible⁴⁸. The Region reserves the right to promote the acquisition of works and texts related to the themes of the strategy for public use. Furthermore, it reserves the right to sponsor or advertise cultural events promoted by these public bodies.

4.3.2 Events

In addition to the aforementioned cultural and scientific events, those involving the maritime sectors are considered relevant events, such as fish fairs, but also events dedicated to MSP, for which the European Commission provides indications (2021), pages. 8-9.

The Region hosts numerous cultural and sector events, including festivals. If events such as "CEAS Aperti" are directly coordinated by the Region, numerous events are organized by municipalities, associations and private bodies. The Region reserves the right to invite such promoters to request affiliation to the strategy if during such events informative materials are presented (for example on the origin of the catch) that are sufficiently accurate and useful to increase awareness on the sustainable use of marine resources.

Impactful cultural events directly dedicated to the sea, such as Festivalmar ⁴⁹, which may be interested in exhibiting the special patronage of the Region linked to the strategy, should also be noted .

⁴⁶ <https://www.sardegnafilmcommission.it/>

⁴⁷ <https://www.acquariocalagonone.it/>

⁴⁸ <https://sardegnacultura.it/index.html>

⁴⁹ <https://worldrise.org/festivalmar/>

Similarly, there are regional-level events (but with wider resonance) where the sea or the environment are not central themes but can, and often are, be hosted. Among these, the Cinema Tavolara festival should certainly be mentioned ⁵⁰.

This category also includes literary and comics festivals (e.g. Giocomix) for which, among other things, the Region also offers the possibility of co-financing ⁵¹. Once again, the Region reserves the right to promote the presence of sea issues and maritime activities within these events.

4.3.3 Involve SME and small businesses

The Sardinia Region, in order to encourage collaboration between public administration and private individuals, can invite affiliation to the Strategy, distinguishing private bodies but registering and promoting the activities and contributions made. The private entities to which this opportunity is reserved are mainly bookshops, fishmongers and markets, NGOs, restaurateurs. Appropriate calls for financing activities are accessible through the INFEAS network.

4.3.4 Testimonials

Regional and international experience demonstrates how it is possible to attract the support, normally free, of testimonials of national importance who can contribute to making environmental and technical issues more attractive to the general public, especially in the case of participatory processes. A recent example in Sardinia is represented by the participation of Donatella Bianchi in the communication campaign of the Regional Sustainable Development Strategy ⁵². When it comes to initiatives at a regional level, not for profit but aimed at the common, environmental or social good, testimonials can be an almost free resource (reimbursement of transfer expenses) with a great impact.

4.4 Communication activities

The Region has a centralized communication service that manages information on the official website, social channels, the regional newsletter and relations with the media.

The use of these channels is considered essential to inform citizens of the existence and launch of relevant initiatives, or to notify the start of consultation and involvement phases within participatory policies. The Region reserves the right to activate campaigns on portals, on social channels and through dedicated events in order to address the important marine-maritime issues, at least on an annual basis, with more targeted and widespread efforts in the context of the PSM participatory processes.

⁵⁰ <https://www.cinematavolara.it/>

⁵¹ <https://sus.regione.sardegna.it/sus/searchprocedure/details/338>

⁵² https://www.youtube.com/watch?v=M_xBT31lkLo.

An example of an effort produced in a non-continuous manner is the **Poseidonia Team**, a case of mini-series of ten episodes, on the theme of poseidonia, created within the European project POSBEMED2, it represents an interesting narrative example that the strategy could also try to develop with respect to aspects of PSM and management of the maritime sectors ⁵³.

The strategy, wanting to act continuously, however requires channels in which the material can be shared constantly. We therefore highlight the INFEAS and environmental department digital channels, detailed in paragraph 4.4.2 of this document.

4.4.1 Regional media

Sardinia has some regional media as well as some television channels on which information relating to participatory processes, including on environmental and landscape themes, has already been broadcast in the past. In this direction the Region reserves the right to issue dedicated press notes.

The television broadcaster Videolina, located in Cagliari, has, for example, created the *Sardegna Azzurra series*, an excellent vehicle for discovering the area, capable of integrating historical, landscape, architectural and cultural information with environmental themes. This can represent an excellent means of reaching large portions of the local population.

Furthermore, even in the national media the Sardinian coast and sea are often the protagonists of programs that enhance their natural and cultural aspects. For example, the RAI program Linea Blu annually carries out episodes set in the Sardinia Region. If alerted in advance, the administration could notify useful issues to be highlighted, including processes related to PSM.

4.4.2 Online presence and social media

The Information Portal: on its portal the Region ⁵⁴hosts a review of news involving the entirety of regional activities and news. In terms of PSM and Ocean Literacy, both news relating to public consultations or new resolutions and communication activities (e.g. Poseidonia Team) have been publicized in the past. It is therefore a useful platform in which with a simple categorization, for example light blue tiles, news related to marine and maritime aspects could be more easily identified. As described previously, the regional communication service is centralized and has social accounts on the main platforms⁵⁵. For the purposes of this strategy, it should be noted that if the previous official channels are excellent for promoting participation events, for example the opening of public

⁵³ <https://www.youtube.com/watch?v=abZ828FKJKc>

⁵⁴ https://www.regione.sardegna.it/ricerca?q=oceanica&size=n_12n&sort%5B0%5D%5Bfield%5D=dataPubblicazione&sort%5B0%5D%5Bdirection%5D=desc

⁵⁵ LinkedIn: <https://www.linkedin.com/company/Regione-autonoma-della-sardegna/>

Twitter/X: https://twitter.com/Reg_Sardegna

Facebook: <https://www.facebook.com/Regioneautonomasardegna/>

Youtube: <https://www.youtube.com/channel/UCM10wX8iwOQUwWxPK4UfG4A>

Instagram: <https://www.instagram.com/Regioneautonomasardegna/>

consultations or extensive information campaigns, for more continuous communication on sea issues the *Facebook* pages and *Youtube* of the INFEAS network⁵⁶.

It is noted that in the short term, the Region reserves the right to activate a TikTok channel, the themes of the environment and the blue economy are very effective in terms of communication through short videos, it is, in this case, a targeted communication towards a predominantly young audience. Finally, it should be specified that numerous CEAS, bodies and institutes mentioned throughout this document, in addition to offering moments of meeting with the public, have online portals that can act as a sounding board.

4 .5. Mapping

In order to make it possible to better understand the diffusion across the territory of entities that can potentially implement the strategy, a digital mapping is provided, based on and integrated with that of the CEAS. This spatialization could, in the future, guide actions to homogenize the offers on the territory, acting on areas in which educational or dissemination references are lacking.

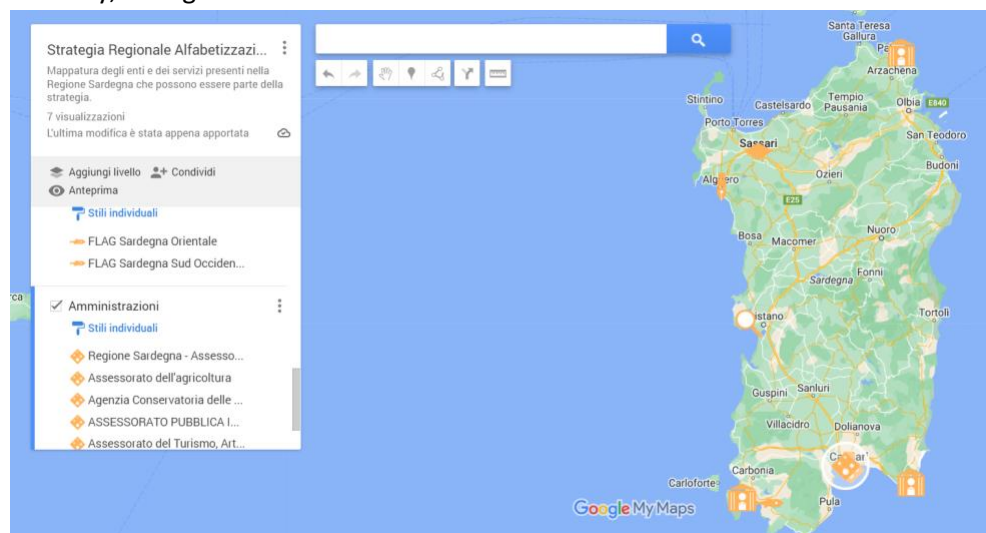


Figure 2: ROLS-MSP interactive map⁵⁷

5. Evaluation and adaptation

The Region will employ a system of monitoring and evaluation of the strategy over a period of 5-10 years (or in any case aligned with the revisions of the national maritime space plans) and how it can be adapted. The Region reserves the right to carry out an intermediate evaluation and keep track of

⁵⁶ <https://www.facebook.com/sardegnaifeas/>.

<https://www.youtube.com/@sardegnaifeas3632>

⁵⁷ <https://www.google.com/maps/d/edit?mid=1j-qbr4iwxliWmQid6H3gwhh2u-TIBHE&ll=40.130439660156114%2C8.969569606381226&z=9>

what is done and whether the objectives are achieved. In case of negative feedback, the strategy should be revised. - A table with provisional basic indicators is proposed:

	Education and training	Production cultural	Events	Cooperation with others institutions	Communication	Goals initials	Goals intermediate
People reached (specify gender and socio-economic context)							
Equilibrium geographical							
Courses activated							
No. of events/products/results							
MSP processes tasks supported							
	Has a sustainable and well-structured Regional network been created? <hr/> <hr/> <hr/> <hr/> <hr/>						
	Is the strategy financially sustainable for the selected time frame? Indicate whether a financial plan has been established and what the sources are. <hr/> <hr/> <hr/> <hr/> <hr/>						

6. Interregional Level

The Sardinia Region has provisions regarding collaboration with other Italian and foreign Regions. If a certain level of coordination at a national level is desirable, it is also true that, in compliance with shared objectives and aspects of the PSM plan of the Tyrrhenian Area, the Region can more easily interact with Tuscany, Liguria and Corsica. As mentioned previously, the Agency for the Protection of the Coasts has in its statute an indication of this cooperation which can be carried out in various ways, for example, cultural exchanges, including between schools, Erasmus exchanges, and within European and national projects. In the past there have been numerous collaborations born on aspects relating to ocean literacy and similar to PSM and the Region reserves the right to encourage and, in the event of a positive outcome, disseminate, communication and education activities related to the sea, its activities and their management, born within specific projects.

7. References

The European and national panorama in which Sardinia is inserted offers interesting sources of inspiration for possible awareness-raising actions or use of educational and information material which will be adapted, when necessary, to the local context. In addition to the sources and examples cited in the various chapters, some experiences and useful links are reported that the Region reserves the right to make available to the entities participating in the strategy on a dedicated page of the regional portal or INFEAS.

UNESCO-EU MSP global

www.mspglobal2030.org

www.mspglobal2030.org/msp-roadmap

European Association for Marine Science Education

www.emsea.eu

https://oceanliteracy.unesco.org/wp-content/uploads/2022/08/emsea-brosura-ENGLISH_preview-2.pdf

EU4OCEAN (EU Ocean Literacy Coalition)

maritime-forum.ec.europa.eu/it/frontpage/1482

Ocean Conservation Trust

www.oceanconservationtrust.org/

UNESCO Ocean Literacy Portal

www.oceanliteracy.unesco.org/?post-types=all&sort=popular

European Marine Board

www.marineboard.eu/

European Global Ocean Observing System (GOOS)

www.eurogoos.eu/ocean-literacy-resources/

New UNESCO blue curriculum

www.unesdoc.unesco.org/ark:/48223/pf0000380544

Training for architects and urban planners

www.classroom.oceanteacher.org/enrol/index.php?id=925

Ocean literacy training for different sectors (media and press, educators, government officials and general public)

www.oceanliteracy.unesco.org/training/

Change Project

www.cordis.europa.eu/project/id/652644

Eu4oceanobs

eu4oceanobs.eu project

7. 1 Appendix: list of coastal CEAS

In this list of CEAS⁵⁸ the coastal ones are highlighted, although the strategy can be extended to the whole island, even its internal parts where correct education on sea issues is absolutely useful, interventions towards the populations directly involved are identified as priorities in the socio-economic processes relating to the management of maritime space.

CEAS Cala Gonone - Municipality of Dorgali
CEAS Naturalia - Municipality of Muravera
CEAS Is Tapparas - Municipality of Perdasdefogu
CEAS House of Ladies - Municipality of Posada
CEAS Nora Lagoon - Municipality of Pula
CEAS Santa Lucia - Municipality of Siniscola
CEAS.inara - Asinara National Park
CEAMAT - Porto Conte Regional Park
CEAS and AMP Visitor Center - Capo Carbonara and Villasimius
CEAS AMP Tavolara Punta Coda Cavallo
CEAS Home SEU_AMP Sinis Belly Pain
CEAS Acqua Durci Chia - Municipality of Domus de Maria
CEAS Island of Sant'Antioco - Municipality of Sant'antioco
CEAS Molentargius - Saline di Cagliari
CEAS Porta del Parco - Municipality of Torpè
CEAS Deodato Meloni - Municipality of Santu Lussurgiu
CEAS Aristanis - Municipality of Oristano
CEAS Pond and juniper grove of Platamona - Municipality of Sorso
CEAS Santa Gilla Lagoon - Municipality of Capoterra
CEAS Tortoli

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⁵⁸ Complete list available at:

https://www.google.com/maps/d/viewer?mid=1nqpTJ7hdjvhE4L2_0fpQDmWSCZ98r4s&femb=1&ll=39.138069816937744%2C9.020629686686652&z=12