WP 2 – Activity 2.1.

DELIVERABLE 2.1.2

COEXISTENCE PRACTICES AND INNOVATIONS REPORT

WP2	Joint development of the transnational strategy for long-term coexistence	
Activity 2.1	Ideation and capitalization of practices identified in EUSAIR Region concerning reconciliation of tourism, offshore activities, and fishery sectors with the coexistence of sentinel species	
D.2.1.2	**Coexistence practices and innovations report**	
Date	15th of February 2025	
Description	This report aims to describe the current state of knowledge about best practices and gaps for coexistence of human activities and sentinel species within EUSAIR region. In order to understand and collect the results capitalized in relations to the needs expressed by key stakeholders, PPs involved in the project collected information on the good practices already in place, reviewed existing literature and reports from their respective countries and analysed knowledge capitalized by ongoing and previously undertaken projects.	
Responsible partner	PP2 - Blue World Institute of Marine Research and Conservation (BWI)	
PPs involved	All PPs	
Authorship	PP2 - BWI	Jelena Basta, Jeroen Hofs, Marinela Cukrov-Car, Marko Radulović, Ivana Šeparović
In collaboration with	LP PP 1 - CONISMA	Giulia Cipriano, Bianca Bonelli, Angelica Catacchio, Pasquale Ricci, Roberto Carlucci, Guido Pietroluongo, Giorgia Corazzola, Ksenia Orekhova, Sandro Mazzariol
	PP 3 - VEFUNIZG	Martina Đuras, Tomislav Gomerčić, Andrea Gudan Kurilj, Kim Korpes, Magdalena Kolenc, Ira Topličanec, Lada Radin
	PP 4 - UAMD	Erjola Keci
	PP 5 – CETEOR	Lejla Ramić, Eldar Bičo
	PP 6 – MORIGENOS	Urška Kajtna, Krista Lokar, Tilen Genov
	PP 7 - MDR	Aylin Akkaya, Suzanne Kamssteeg, Balša Dragović, Ivana Krivokapić
	PP 8 – MET	Alda Ndoj, Klodiana Marika, Aida Alsina
	PP 9 – Archipelagos	Marta Azzolin, Anastasia Miliou, Elisa Lamberti
	PP 10 - NEUM	Antonija Kresić
	PP 11 – Parco Delta Po	Pako Massaro, Roberta De Faveri, Simone Schibuola, Raffaele Pezzolato

ACRONYMS

ACCOBAMS - Agreement on the Conservation of Cetaceans in the Black Sea, Mediterranean Sea and Contiguous Atlantic Areas

CNR – Consiglio Nazionale delle Ricerche - National Research Council

CFP - Common Fisheries Policy

EAF - Ecosystem Approach to Fisheries

ECOSS - ECOlogical Observing System in the Adriatic Sea

EIA - Environmental Impact Assessment

EMFF - European Maritime and Fisheries Fund

FAO - Food and Agriculture Organization of the United Nations

GFCM - General Fisheries Commission for the Mediterranean

GSA – Geographical subarea

HQWW - High Quality Whale Watching

ISPRA - Istituto Superiore per la Protezione e la Ricerca Ambientale – Higher Institute for Environmental Protection and Research

MMO - Marine Mammal Observer

MPA – Marine Protected Area

MSFD - Marine Strategy Framework Directive

MSP - Maritime Spatial Plan

OP - Operational Program

PAM - Passive Acoustic Monitoring

RAC/SPA - Regional Activity Centre for Specially Protected Areas

REM - Remote Electronic Monitoring

RFMO - Regional Fisheries Management Organization

SAC - Special Areas of Conservation

SCI - Sites of Community Importance

TED - Turtle Excluder Device

VINCA – Valutazione di Incidenza - Appropriate Assesment

VMS - Vessel Monitoring System

Introduction

The coexistence of tourism, offshore activities, and fisheries within the marine and coastal zones of the EUSAIR (EU Strategy for the Adriatic and Ionian Region) area presents both opportunities and challenges for sustainable development. The Adriatic-Ionian ecoregion is a sensitive and vulnerable marine ecosystem facing numerous environmental challenges and it is generally considered to be the most endangered region in the Mediterranean Sea (Plan Bleu). Although, the area is characterized by some of the most significant treasures of world heritage, it is affected by several pressures as well as the entire Mediterranean Sea such as eutrophication, overfishing, pollution, shipping, coastal development and tourism, maritime transport and ports development, fishery and aquaculture activities, and urbanization (Bianchi and Morri, 2000; Cuttelod et al., 2008; Coll et al., 2010, 2012; UNEP-MAP-RAC/SPA. 2015). To these, other human activities that are affecting marine ecosystems of the region (such as climate changes, offshore activities for energy production and other industrial activities) should be considered, all producing several direct and indirect pressures on species, habitat and ecosystems in general (e.g., Furlan et al., 2019). Among these pressures, as mere example, it is reported bycatch, entanglement and injuries by fishing gear or marine litter, collision, habitat fragmentation and disruption, chronic and lethal physical and physiological damages, behavioral changes, and, in extreme cases, strandings (Arcangeli et al., 2019; Bonizzoni et al., 2021; Bray et al., 2016; Campana et al., 2015; Carpentieri et al., 2021; Casale et al., 2018; Cuttelod et al., 2008; Deudero & Alomar, 2015; Erbe et al., 2019; FAO, 2022; Garcia et al., 2003; Güçlüsoy et al., 2004; López, 2012; Notarbartolo di Sciara et al., 2008; Notarbartolo di Sciara & Birkun, 2010; Nowacek et al., 2007; Pace et al., 2015; Pasanisi et al, 2022; Southall et al., 2007; 2019; 2021; NOAA, 2024; UNEP-MAP-RAC/SPA, 2013; UNEP/MAP, 2021). It refers particularly on sentinel species such as cetaceans, sea turtles and monk seals.

In order to enhance sentinel species conservation in highly human-impacted habitats in the EUSAIR Region, information on existing practices of coexistence of human activities and sentinel species were collected within seven countries in the region (Italy, Croatia, Slovenia, Montenegro, Bosnia and Herzegovina, Albania and Greece). This report explores how existing good practices and innovations within the EUSAIR framework can be leveraged to reconcile the interests of tourism, offshore industries, and fisheries with the conservation of sentinel species.

STATE OF THE ART OF EXISTING PRACTICES ON LONG-TERM HUMAN AND SENTINEL SPECIES CO-EXISTENCE

Italy

In Italy, the main anthropogenic activities occurring through marine and coastal areas are identified and mapped in the Italian Maritime Space Management Plans (Figure 1, Figure 2). This planning tool aims to supports sustainable development and growth in the maritime sector, applying an ecosystem approach, and to promote the co-existence of relevant activities and uses, ensuring compliance with European Maritime Spatial Planning Directive (2014/89/UE). Moreover, it highlights also potential interactions among maritime uses classifying them as conflicting activities, potential conflicting/synergic or synergic activities (Figure 3, Figure 4). In the specific case of ADRION region, both Adriatic and Ionian basins share the same human activities although they are distributed differently. In the map of the Adriatic Maritime Area showed in Figure 3, is highlighted the existence of conflicting interaction (to be understood as conflict in the use of maritime space to be managed) between maritime transport (both passenger and cargo) and fishing activities, as well as a potential conflicting/synergic interaction with tourism. Regarding energy production areas and infrastructures (i.e., pipelines), there are conflicting and potential conflicting/synergic interactions with fishing and aquaculture activities as well as with tourism. Regarding temporary military uses, there are potential conflicting/synergic interactions with all other uses of maritime space and similarly, from these latter and sand extraction activities. On the other hand, they are considered synergistic the conservation of nature sites, the implementation of small-scale fisheries activities and forms of ecotourism.

Regarding the map of interactions in the Ionian Maritime Area, showed in Figure 4, the area characterized by the occurrence of important Port Authorities are sites of conflicting interaction from different types of marine transport. Potential conflicting/synergistic interactions exists between maritime traffic and fishing areas. Regarding energy production areas, there are conflicting interactions between production/extraction areas and infrastructures (i.e. Italy-Tunisia and Italy-Libya gas pipelines) and fishing activities. On the other hand, a potential synergy is supposed between the wind farm in front of port of Taranto and maritime traffic. As well as potential synergies/conflicts were supposed among military activities and maritime traffic, fishing, tourism, and aquaculture activities due to temporary interruptions to navigation. Finally, synergies were identified between the conservation of nature sites and small-scale fishing, and different forms of ecotourism among which underwater cultural heritage

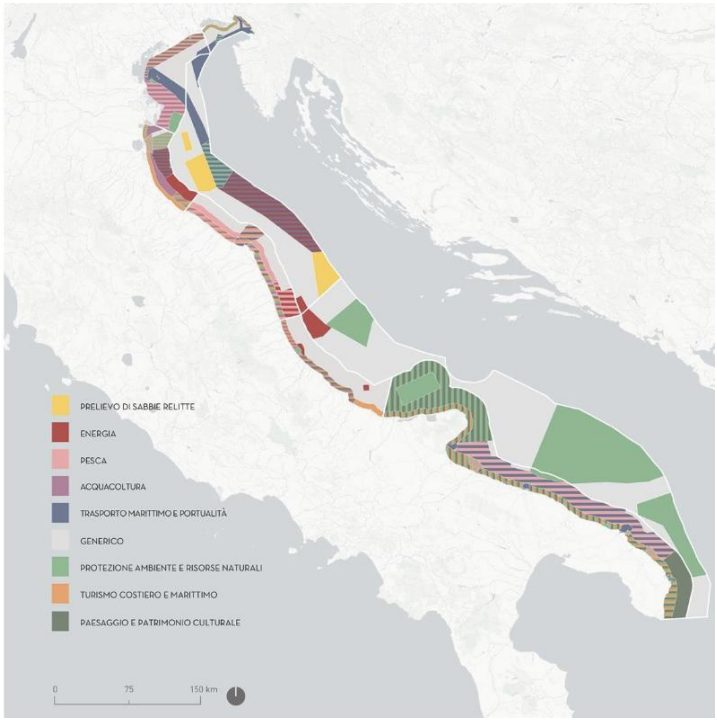

Figure 1 *- Main use of the Adriatic maritime area. In yellow the extraction of relict sand, in red the extraction of materials for energy production, in pink fishing, in lilac aquaculture, in blue maritime transport and ports, in grey general use, in green the areas of protection of the environment and natural resources, in orange coastal and maritime tourism, in dark green the landscape and cultural heritage.*

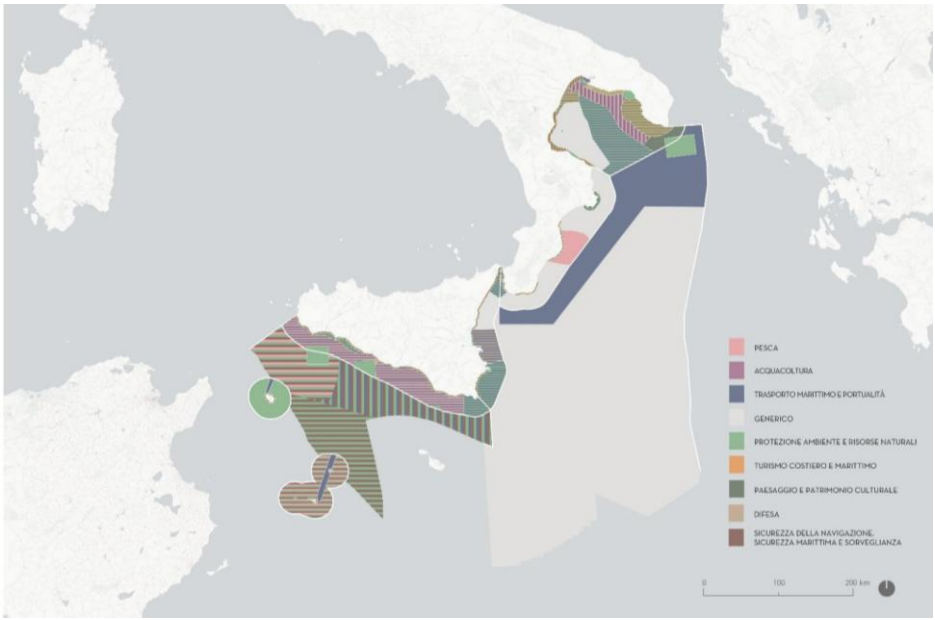

Figure 2 *- Main use of the Ionian-Central Mediterranean maritime area. In pink fishing, in lilac aquaculture, in blue maritime transport and ports, in grey general use, in dark green environmental and natural resource protection areas, in orange coastal and maritime tourism, in dark green landscape and cultural heritage, in beige the defense areas and in brown areas relating to navigation safety, maritime security and surveillance.*

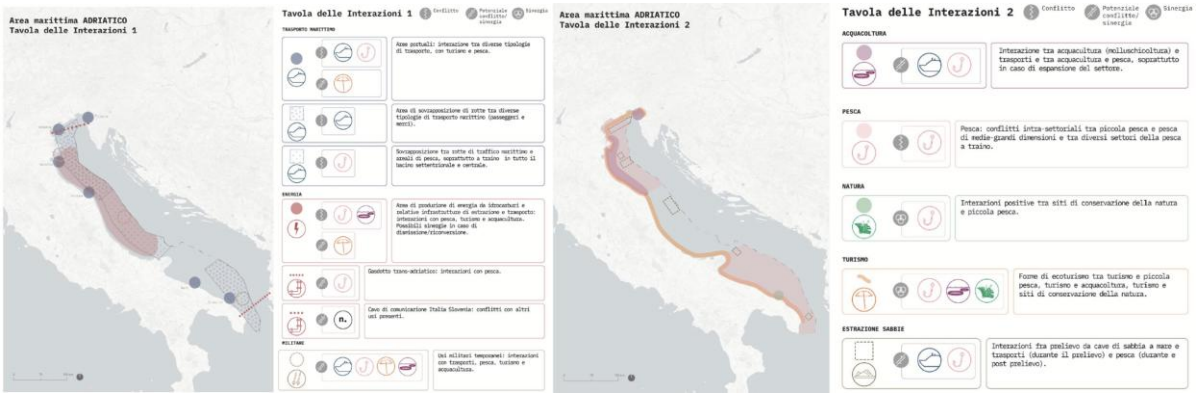

Figure 3 *- Map of interactions between human activities in the Adriatic Maritime area, Italian side. = Conflict, = Potential conflict/synergy, = Synergy*

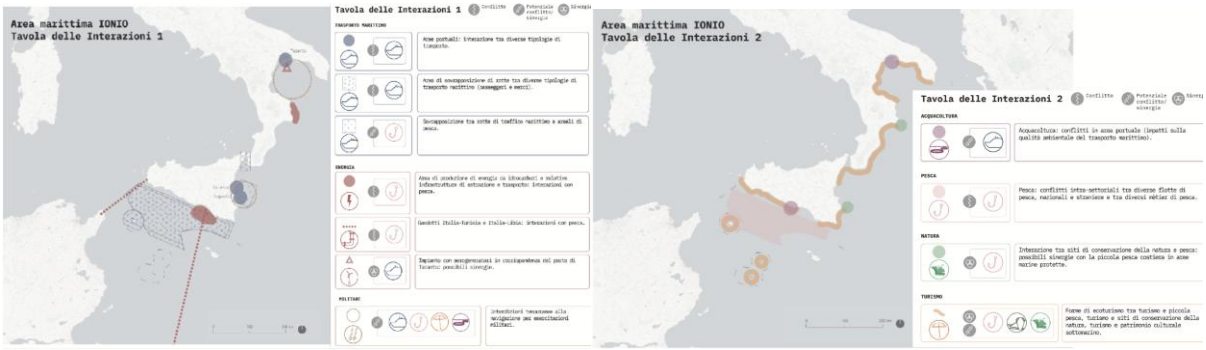

Figure 4 *- Map of interactions between human activities in the Ionian Maritime area, Italian side. = Conflict, = Potential conflict/synergy, = Synergy.*

Croatia

For Croatia, given its large marine area, semi-enclosed sea (the Adriatic), and growing interest in offshore renewables, tourism, aquaculture, the MSP process is crucial to sustainable ocean governance. While various spatial plans cover land and parts of the territorial sea, Croatia does not yet have a single marine-only MSP covering all its maritime area (including the outer EEZ) adopted/fully in force. Therefore, Croatia has initiated the process of developing a dedicated spatial plan for its maritime area (in particular, for the Exclusive Economic Zone, EEZ) under the framework of the Directive 2014/89/EU (on MSP). It aims to define where major categories of marine uses will occur - aquaculture, fishing, hydrocarbon exploration/exploitation (in the northern Adriatic), maritime traffic routes, submarine cables/pipelines, protected marine/nature conservation areas, underwater cultural heritage, etc. Currently, the process of plan

development is still ongoing, and the regulatory and institutional framework still requires further refinement (for example spatial planning law amendments, clarity on marine zoning, concession/permit procedures in marine domains) to fully implement MSP in a functional way.

However, the Hydrographic Institute of the Republic of Croatia launched a geo-portal "GeoAdriatic" providing marine spatial data (seabed, infrastructure, hydrographic surveys) which supports MSP and marine data infrastructure. Projects covering marine habitats and mapping have been completed or underway (for example: the launch of the national map of maritime habitats covering ~51% of the Adriatic under Croatian jurisdiction) — which supports evidence-based spatial planning.

Currently, there are three Marine national parks in the Croatian part of the Adriatic Sea: Brijuni National Park, Kornati National Park, and Mljet National Park**.** National parks represent the highest level of nature protection (covering all animals, plants, and habitats) and fall under the jurisdiction of the Ministry of Environmental Protection and Green Transition of the Republic of Croatia). Their management plans are regulated by the Law on Nature Protection. Also, there are 6 specific Natura 2000 ecological network areas designated in the Croatian Adriatic as the important habitats of bottlenose dolphins: Cres – Lošinj (HR3000161), Lastovo and Mljet Channel (HR3000426), J. Molat – Dugi otok – Kornat – Žirje – Zlarin – Murter – Pašman – Ugljan – Rivanj – Sestrunj – Molat (HR3000419), Vis Aquatorium (HR3000469), Western Istrian Aquatorium (HR5000032) and Kornati National Park (HR4000001).

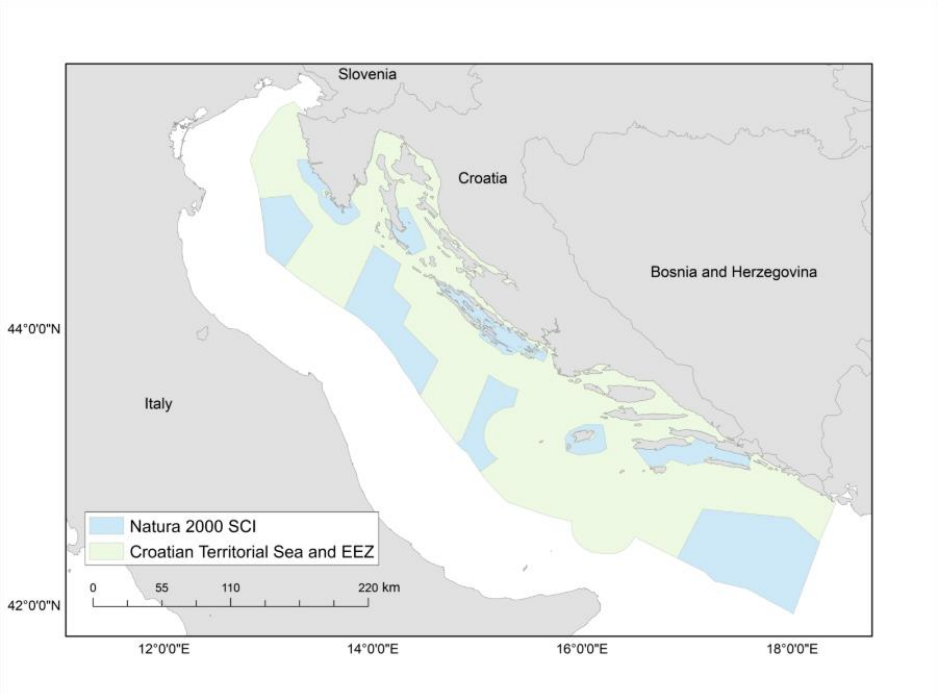

Figure 5 *Map of Natura 2000 ecological network areas designated in the Croatian Adriatic as the important habitats of bottlenose dolphins*

Once, that maritime spatial plan will be formally adopted by Croatian authorities, this will provide regulatory certainty for uses such as offshore renewable energy, marine infrastructure, conservation. It is to be expected to reduce conflicts between uses (fishing, shipping, tourism, marine energy) by pre-defining zones and provide data transparency and stakeholder engagement (public consultations).

Slovenia

Given Slovenia's relatively small marine area compared to neighbouring states, balancing development (e.g., port expansion, marine tourism) with ecosystem protection is very challenging.

Slovenia adopted its MSP on 15 July 2021. The plan is legally binding: under the national Spatial Planning Act (e.g., ZUreP-2 and ZUreP-3) it is treated as an Action Programme for implementing the national Spatial Development Strategy at sea. The MSP covers the marine (sea) area and coastal zone of Slovenia, providing guidelines for maritime uses in line with the EU Directive 2014/89/EU on MSP. The plan includes a ten-year review requirement: it must be checked at least every ten years for relevance and compliance.

The MSP sets out sectoral spatial objectives and "measures" (implementation tools) for major maritime sectors: energy, transport, fishing/aquaculture, raw materials, tourism, underwater cultural heritage, environment/protection. It introduces land-sea interaction rules, for example a coastal setback belt of 150 m on the seaside (meaning restrictions on certain developments adjacent to this zone). By having the MSP, Slovenia has a clear spatial governance framework for marine areas — crucial for ensuring sustainable use of its sea area, avoiding conflicts among uses (e.g., shipping, fisheries, renewable energy) and safeguarding environmental values.

The plan's legally binding status gives it real weight in decisions and regulatory processes (e.g., permitting, infrastructure development) — this reduces uncertainty for stakeholders. The land-sea interface focus (e.g., setback zone) helps integrate coastal development with marine uses, which is important for a country like Slovenia with a relatively small coastal zone but significant marine interests. It sets the foundation for cross-border cooperation (especially in the Adriatic/Northern Adriatic region) since marine/maritime uses often span national boundaries. Transboundary coordination with neighbouring states (especially Italy, Croatia) remains important — as marine spatial processes often need alignment across borders.

Bosnia and Herzegovina

BiH is not an EU Member State and therefore not bound by the EU MSP Directive, so it does not yet have a national, dedicated MSP. MSP activity is limited and mostly handled

under broader spatial planning at cantonal/municipal level and Neum is the only coastal municipality. National MSP planning is therefore constrained by the country's very short coastline and by the fact that coastal management decisions are often made at lower administrative levels.

However, EU institutions and regional bodies (Barcelona Convention / UNEP-MAP, RAC/SPA, GEF Adriatic projects) are supporting MSP-related capacity-building across the Adriatic, which includes BiH. International and regional projects and EU-related support are the main drivers of MSP progress in BiH so far. Examples include the CAMP (Coastal Area Management Programme) project for Neum, GEF/UNE P-MAP actions in the Adriatic, and workshops on the "sustainable blue economy" to transfer EU MSP best practice which focuses on sustainable development and environmental protection. Lack of a national MSP legal framework, scarce marine data (biodiversity, invasive species), limited institutional capacity, and the need for transboundary coordination in the Adriatic (especially with Croatia) therefore represent main challenges for regulation of coexistence practices for diverse stakeholders in the area.

In Bosnia and Herzegovina, particularly in the coastal area of Neum, several practices and experiences exist that illustrate the interaction between human activities (tourism, fishery, maritime traffic) and sentinel species, highlighting both challenges and examples of coexistence.

Montenegro

For Montenegro, MSP is about the sustainable use and protection of its coastal and marine zones in the Adriatic Sea, managing competing uses (tourism, ports, fishing) and conserving important habitats. According to the MSP working document for Montenegro, because many uses (tourism, ports, urbanisation) straddle the land-sea interface, MSP must be integrated into all levels of the national spatial-planning system: national (e.g., the Spatial Plan of Montenegro), regional (coastal area plans), and local. The marine area is formally part of the "maritime domain" under national regulation, and the responsible ministry is the Ministry of Ecology, Spatial Planning and Urbanism of Montenegro.

Montenegro's coast hosts important habitats (e.g., seagrass meadows like Posidonia oceanica, coralligenous reefs) and species. The protected areas were declared partly because of these. Currently, Montenegro has formally protected only about 2 % of its marine zone within 3 MPAs - the Platamuni Nature Park, Katič Nature Park and Stari Ulcinj Nature Park. Management plans for all three MPAs are adopted. However, key strategic documents (such as an updated National Biodiversity Strategy) have yet to be adopted or fully implemented. Institutional coordination, enforcement, monitoring capacities are weak or under-resourced, which limits effective MSP and protected-area functioning.

Figure 6 *Map of the territorial boarders at the EUSAIR region*

Overall, in the Montenegrin legislation, there are several laws that refer to sentinel species. To be exact, in these laws, sentinel species are referred to as indicator species. A slight difference exists within these laws, as in some instances indicator species are mentioned directly, while in other cases they are alluded to in a more indirect way.

For example, in the Law on Nature Protection, Articles 3 and 4 establish the objectives of nature protection, which includes determining and monitoring of natural processes. As such, these articles represent a legal basis for applying biological monitoring using indicator species in marine ecosystems. Furthermore, this Law also explicitly refers to indicator species – in Article 6 (Paragraph 22) indicator species is defined as species whose ecological status reflects the general condition of an ecosystem (Law on Nature Protection, Official Gazette of Montenegro, No. 54/16).

Similarly, the Law on Marine Environment Protection, in its Article 5 (Paragraph 6) defines indicator as a quantitative and qualitative measure of progress in regards to good environmental status of the sea. These biological indicators include species and communities, such as dolphins, mussels, turtles, etc. The Law additionally refers to indicator species in Article 6 (Paragraph 4) and Articles 9-11, which discuss use of tools (e.g. The Marine Strategy, the Marine Environment Monitoring Program) in which objectives and indicators must be clearly defined and monitored in order to determine the state of the ecosystem (Law on Marine Environment Protection, 2019).

Lastly, the Decree on the National List of Environmental Protection Indicators (Articles 1–2) establishes the list of national indicators in Montenegro, including sea and fisheries. The Law's Annex B02 further specifies this list by calling for monitoring of common, specific, and indicator species. The Institute of Marine Biology is noted as a data source for this monitoring in marine environment (Decree on the National List of Environmental Protection Indicators, Official Gazette of Montenegro, No. 19/13).

The Montenegrin coastline is a key asset for tourism, recreation, fisheries and marine transport. MSP can help to manage this asset sustainably and ensure that growth in tourism, ports, marine infrastructure does not degrade critical habitats, and that environmental impact assessments and spatial plans are adhered to.

Albania

The protection of the marine and coastal environment and biodiversity is subject to all the environmental laws and by-laws of the Republic of Albania and the international conventions, protocols, agreements to which the Republic of Albania is a party.

Albania has engaged in the MSP dialogue and preliminary processes; however, a full national marine spatial plan is not yet fully adopted. The project GEF Adriatic Project (2017-2021) provided support to Albania (and Montenegro) to implement the ecosystem approach in the Adriatic Sea via MSP, marine monitoring and capacity building. The Specially Protected Areas Regional Activity Centre (SPA/RAC) published Guidelines for Marine Spatial Planning process in Albania. While guidelines and assessments exist, a formal MSP plan with zoning, legal enforceability and stakeholder buy-in is still forthcoming.

Recently, Albania has done significant progress in aligning the legal framework related to biodiversity protection and preservation through the law on biodiversity and law on the protection of wild fauna (Biodiversity Law no. 9587 dated 20.7.2006 "on Biodiversity Protection", amended by Law no. 37/2013 dated 14.2.2013, no. 68/2014 dated 3.7.2014, no. 41/2020 dated 23.4.2020; Wildlife Law no. 10 006 dated 23.10.2008 "on protection of wild fauna", amended by no. 10 137 dated 11.5.2009, no. 41/2013 dated 14.2.2013). However, law enforcement and marine species protection are limited in Albania; the sentinel species protection and conservation are mainly focused to the marine protected areas which are under the management of Regional Protected Areas Agencies. Last year Albania has approved the Law on Marine Environment Protection Strategy (Law no. 15/8.02.2024), which is partially aligned with the Marine Strategy Framework Directive (Directive 2008/56/EC). This law aims the preparation and enforcement of the Marine Protection Strategy in Albania for the marine environment protection and conservation; prevention of marine environment deterioration; marine ecosystem restoration and

gradual pollution elimination. Fully transposition of the MSFD remains an important gap for the protection of marine environment.

Law no. 81/2017, "on Protected Areas" and DCM No. 57/19 "on Criteria and methodology of Zoning of Environmental Protected Areas and Law No. 8905/02, "on the protection of marine environment from pollution and deterioration", amended, are a good base for the marine environment protection, but still their proper enforcement is limited.
Beside the national laws, legal acts and DCMs (Decisions of Council of Ministers), Albania has ratified several related conventions such as the Barcelona Convention (UNEP-MAP), Berne Convention on the conservation of wildlife and European natural habitats, CBD Convention on Biological Diversity, Bonn Convention- Convention on the Conservation of Migratory Species of Wild Animals, Ramsar Convention on Wetlands of International Importance, etc. and is part of the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS, 2001).

Due to fast development along the coastal area in Albania, marine water pollution has become a very significant threat for the marine ecosystems. Marine habitats and species are facing pressures from the urban wastewater discharge; touristic installments along the coast pose a risk through the untreated water discharge; There are areas where untreated urban water is discharged from hydropower stations, solid and liquid waste deriving from light and food industry factories, cement factories, leather processing, ceramics, textiles, mining, metallurgy, oil and gas extraction and processing, and wood processing. Marine water pollution from agriculture and farming activities and discharge of solid materials coming from mines of copper, chromium and iron-nickel is another issue that need immediate actions of control and prevention.
Pollution from the oil extraction and processing industry (extraction and processing) remains one of the main sources of pollution in inland and coastal waters, most notably for the Seman rivers (from its Gjanica branch) and the Vjosa (passing through oil and bitumen areas) (UNEP/MAP-SPA/RAC, 2021).
These activities have been identified through individual projects in Albania, but there is not a structured database recoding their impact to marine ecosystem; wastewater discharge points and the respective quantities are not monitored. Many of the activities have been permitted through an environmental permit or regulated through the related legal framework (Law no. 10448/11 "on environmental permits", amended; Law No. 9115/03 "For the environmental treatment of polluted waters", amended; Law no. 10463/11 "on Integrated Waste Management", amended; Law No. 10440/11, "on environmental impact assessment", amended; DCM no. 177/05 "For the allowed norms of the liquid discharges and the criteria of zoning of the receiving water environment"; Law No. 29/2024 on Integrated management of water resources), but the law enforcement is limited and the environmental permit implementation or the respective rehabilitation activities usually are not monitored.

Information, awareness raising and capacity building to related management and monitoring institutions and industry operators on marine environment protection and specifically on the sentinel species is still scarce.

Greece

Greece has National Spatial Strategy for the Marine Space (NSSMS), a formally adopted national marine spatial planning strategy with the official map of the marine spatial plan. It covers the entire national maritime space: territorial sea, continental shelf, exclusive economic zone (EEZ) where applicable. The action aligns Greece with the EU legal requirement under Directive 2014/89/EU. Although the national strategy is adopted, the detailed frameworks for each maritime region (Greece divides its marine space into regional units) still need to be developed.

The map and act define how human activities (energy, tourism, shipping, aquaculture, etc) will be organised in the maritime zones. However, despite the recent adoption, the plan is still a relatively recent achievement and will require follow-through to become effective on the ground.

COEXISTANCE OF SENTINEL SPECIES WITH MARINE TRAFFIC

While shipping and tourism are vital to the economy of the countries in the EUSAIR region, the increasing intensity of maritime traffic poses serious threats to marine biodiversity—particularly to large, slow-moving, or surface-dwelling species such as dolphins**,** sea turtles, and the Mediterranean monk seals.

Marine traffic, including cargo ships, fishing boats, ferries, and tourist vessels, poses multiple pressures on sentinel species in the Adriatic-Ionian Region, bringing risks ranging from direct injury to long-term disturbance of their habitats.

Dolphins are particularly affected by noise pollution from ships and speedboats. Underwater noise from ship engines and propellers can mask acoustic signals, disrupting dolphins' echolocation, social communication, and predator–prey interactions. Frequent encounters with vessels may also lead to physical injuries from collisions, especially in areas with high boat traffic, such as dolphin-watching zones. Sea turtles are at high risk of boat strikes when they surface to breathe, rest near the surface, or inhabit busy coastal waters. Injuries from propellers and hull collisions are a major cause of turtle mortality worldwide. In addition, constant disturbance from marine traffic can make turtles avoid feeding grounds or nesting beaches close to human activity. Monk seals, which prefer quiet, undisturbed coastal caves and shallow waters, are disturbed by frequent boat movements near their habitats. Vessel noise and human presence can cause seals to abandon resting or breeding sites. In areas where marine traffic overlaps with feeding zones, monk seals may face reduced access to prey and increased stress

Vessels release oil residues, bilge water, heavy metals, and microplastics. Anchoring and wake turbulence can damage seagrass meadows (*Posidonia oceanica*), which serve as crucial feeding grounds for sea turtles and as habitats for fish that monk seals prey upon. Chronic pollution accumulates in the food web, affecting dolphin health through bioaccumulation of toxins

Italy

At Mediterranean scale, maritime traffic is recognized as one of the most significant anthropogenic pressures on marine biodiversity, particularly affecting sentinel species (Schoeman et al., 2020). Within the North-western Mediterranean, including Italian waters of the Pelagos Sancturary (Figure 5), specific mitigation measures have been introduced by the World Shipping Council (2024). These mitigation measures recommend reducing vessel speed to 10-13 knots in areas of cetacean presence, maintaining safe distance from marine mammals, reporting sightings and collisions to coastal authorities, and sharing data with centralized system.

At Italian level, Law 391/2001 *Ratification and implementation of the Agreement on the Establishment of a Sanctuary for Marine Mammals in the Mediterranean (Pelagos Sanctuary), signed in Rome on 25 November 1999,* sets specific restriction in the area including a ban on high-speed competitions. In addition, the Legislative Decree No. 171/2005, *Recreational Boating Code and implementation of Directive 2003/44/EC, pursuant to Article 6 of Law No. 172 of 8 July 2003,* aims to regulate maritime navigation and to reduce its impact on the marine environment through the implementation of the Italian Nautical Code. This latter defines speed limits for recreational boats that are 3 knots within port areas, 10 knots within 500 m radius from rocky shores and 1,000 m radius from beaches. Furthermore, this Decree establishes the rules for recreational boating in Marine Protected Areas (MPAs). Each area has its own regulations; generally motorized boating is prohibited in Zone A (full reserve). In Zones B (general reserve) and C (partial reserve), however, it is often permitted at reduced speeds.

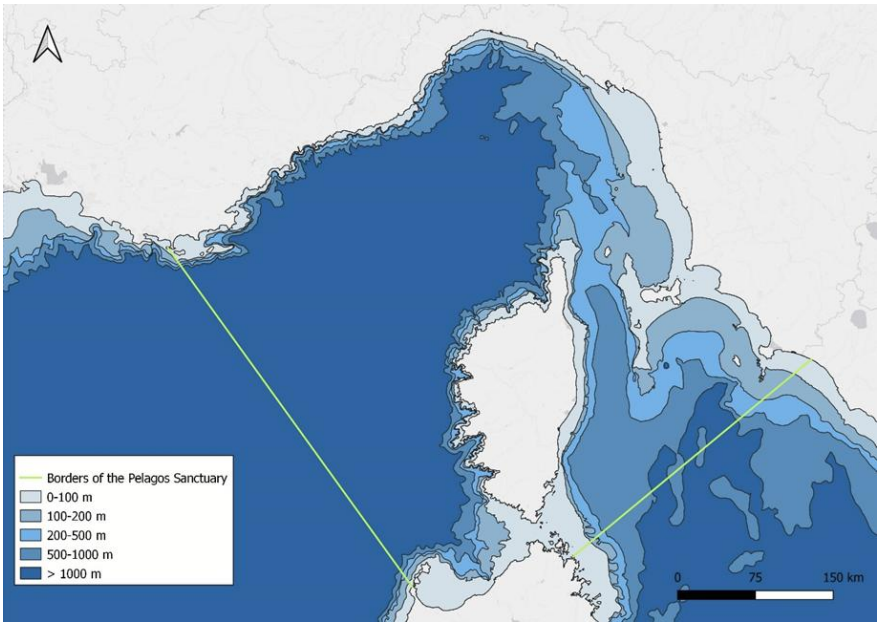

Figure 7 *- Map of Pelagos Sanctuary borders and bathymetry.*

In the Adriatic–Ionian region, the high density of ports important for commercial and passenger transport, together with the widespread presence of recreational and coastal tourism activities, represents a critical challenge for the co-existence of human activities and sentinel species. Maritime traffic in the Adriatic Sea is mainly concentrated in its northern and central sectors and involves a wide variety of vessel types, including oil tankers, dry cargo and container ships, chemical tankers, and passenger vessels. Moreover, fishing boats, yachts, recreational craft, naval vessels, and research ships contribute to the overall intensity of maritime activity in the area (Štrbenac, A. (ed.) 2015.). This intense maritime traffic constitutes a significant source of pressure and a potential threat to cetaceans, even in this part of the Mediterranean Sea. Specifically, trade routes are recognized as a key pressure in the Adriatic and Ionian maritime areas, as defined in

the Italian Maritime Spatial Plan (Figure 1 - 4). The combination of intense commercial traffic, the expansion of nautical tourism, and the high density of major ports can severely affect the co-existence between human activities and marine fauna. Indeed, the main threats posed by vessel traffic include collisions, underwater noise pollution, chemical and oil pollution risks, and behavioral disturbances in marine fauna (i.e., IUCN, 2008, 2009). Underwater noise generated by recreational and shallow-water vessels can cause disorientation and interfere with communication in bottlenose dolphins within a radius of approximately 50 meters (Jensen et al., 2009). Shipping-related vessel collisions have emerged as a growing concern and it should be carefully considered, especially in view of the anticipated increase in maritime traffic in the area. However, several experiences have demonstrated that this pressure can be effectively mitigated through appropriate management measures, such as the implementation of vessel traffic control systems (e.g., Agardy et al., 2019) or the enforcement of speed reduction policies (e.g., Constantine et al., 2015). In this context, despite the existence of some regulations on maritime traffic, critical gaps remain, including the absence of mandatory speed limits in offshore waters, the lack of awareness among boaters of the appropriate behavior to adopt during close encounters with sentinel species, the presence of specific mitigation measures only for some areas.

Croatia

Croatia's Adriatic coastline is one of Europe's most popular boating destinations, with thousands of private yachts, ferries, and excursion boats operating during the summer season, and to a lesser extent throughout the rest of the year.

Rules on vessel speed and distance from the coast are regulated by the Regulation on the Safety of Maritime Navigation in the Internal Sea Waters and the Territorial Sea of the Republic of Croatia and on the Manner and Conditions of Supervision and Management of Maritime Traffic (Official Gazette 52/2025). Speed limits for vessels in Croatia depend on location. Near the coast, from 150 to 300 meters, the speed is limited to 5 knots. Within 150 meters of the shore, special caution and lower speed are required, and gliding is prohibited. Gliding is generally permitted only beyond 300 meters from the shore and islands. However, speeds may be further reduced in ports and anchorages. Despite clear regulations, vessel speed control across Croatia's extensive coastline remains inconsistent, particularly during the peak tourist season.

The disturbance of sentinel species is regulated under Article 153 of the Nature Protection Act (Official Gazette 80/2013, 15/2018, 14/2019, 127/2019, 155/2023), which is the primary legal framework for environmental and nature protection in Croatia. Article 153 provides that *"It is prohibited to carry out the following with strictly protected wild animals in nature, in their natural area of distribution: … 2. intentional disturbance, especially during times of reproduction, raising of young, hibernation, and migration."*

There have been reported cases of intentional disturbance of bottlenose dolphins by leisure boats. In such cases, distance and speed limits were not respected, and boat owners were prosecuted and fined.

To date, there are no confirmed cases of boat collisions involving bottlenose dolphins or monk seals in the Croatian part of the Adriatic Sea. However, collisions with boats and blunt trauma have been reported for sea turtles. Affected turtles have been found both alive and dead. Live turtles underwent rehabilitation, when possible, while dead turtles were examined during necropsies, where collision injuries were confirmed.

Reports of disturbance or vessel collisions involving sentinel species observed in the whole Croatian part of the Adriatic Sea can be submitted via the free emergency number 112**,** the police (192), or the State Inspectorate (https://dirh.gov.hr/).

The sighting of an injured, sick, or dead animal must be reported to the number 112 or to Division of Environmental Protection and Nature (Zavod za zaštitu okoliša prirode) via the email address: vrste@mingor.hr.

There are two rehabilitation centers for sea turtles **-** the Turtle Rescue Centre at the Lošinj Island and the Sea Turtle Rescue Centre in Pula. Both centers are staffed by trained experts capable of treating turtles suffering from trauma caused by boat collisions. They are equipped to provide rehabilitation until the turtles can be released back into the sea, a process that may last weeks, months, or even years.

For bottlenose dolphins and monk seals**,** no rehabilitation centers currently exist in Croatia. However, immediate decisions on how to handle specimens affected by boat collisions are made according to the *Protocol for Notification and Action in Case of Finding Dead, Sick, or Injured Strictly Protected Marine Animals (marine mammals, sea turtles, and cartilaginous fish)*, coordinated by the Ministry of Environmental Protection and Green Transition (https://www.haop.hr/hr/tematska-podrucja/prirodne-vrijednosti-stanje-i-ocuvanje/ukljucite-se-u-zastitu/protokoli-za-0).

Slovenia

Maritime traffic in Slovenian waters is significant, with recreational boating increasing during the summer months and commercial shipping operating continuously throughout the year. Consequently, certain areas are considered to be at higher risk of negative interactions between human activities and marine wildlife. Slovenia has implemented several regulations to reduce the impacts of maritime traffic on marine life. The Maritime Code (Pomorski zakonik) prohibits speeding/gliding within 250 meters of the shore, primarily to protect swimmers. Additionally, motorized vessels are forbidden from entering and anchoring within the Strunjan Natural Reserve, part of the Strunjan

Landscape Park, within the marine protected area of Landscape park Debeli Rtič and within the entirety of the natural monument Rt Madona v Piranu. Despite these measures, there are currently no regulations specifically targeting the mitigation of maritime traffic impacts on dolphins or sea turtles, and no speed limits exist outside the 250-meter shoreline zone.

Raising awareness among boat owners and operators is a key strategy for mitigating the effects of maritime traffic on sentinel species. Public education campaigns, conducted jointly by Morigenos and the Slovenian Maritime Administration, are intensified during the summer tourist season, when vessel traffic is at its peak. These initiatives provide guidance on responsible behaviour at sea, including maintaining safe distances from wildlife, reducing speed near animals, and recognizing signs of marine fauna presence. Informational materials and guidelines are disseminated through online platforms (links listed below), brochures (*Figure 8*), and public events.

- https://www.morigenos.org/en/have-you-spotted-dolphins/
- https://www.morigenos.org/en/2025/06/12/summer-is-here-lets-not-forget-were-not-alone-at-sea/
- https://www.gov.si/en/topics/for-nature-lovers/

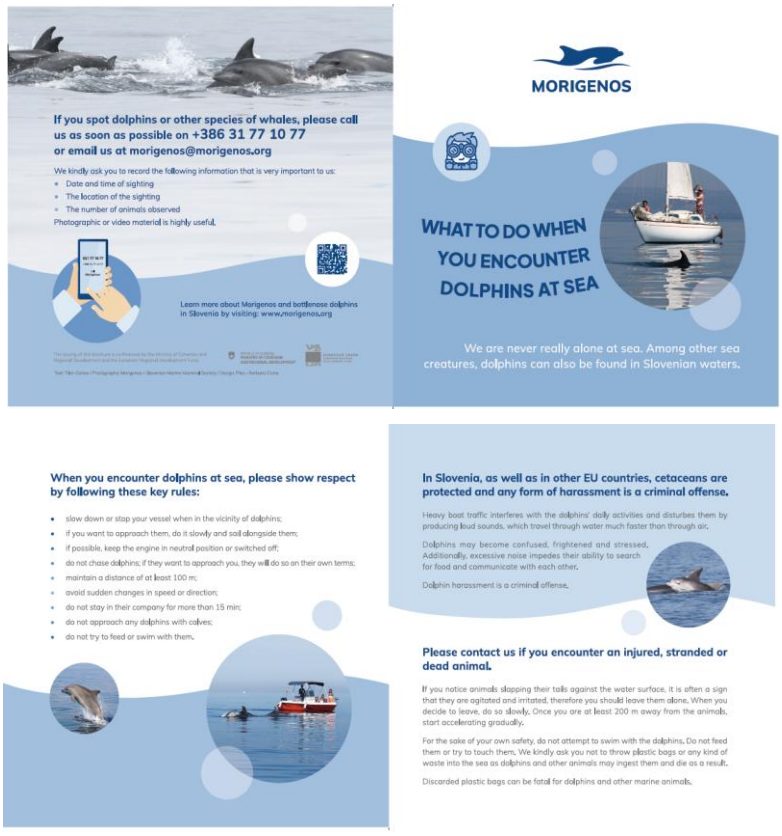

Figure 8 *Brochure for informing the public on encountering dolphins at sea*

Currently, there are no prescribed procedures in legislation for collisions with dolphins or sea turtles. While the formal protocol for reporting incidents is to call the national emergency number, 112, most information comes from voluntary reports by observations submitted to organizations such as Morigenos. Cases of collisions with dolphins or sea turtles in Slovenian waters are considered rare, but many collisions may go unnoticed, as animals can sink or drift away.

Bosnia and Herzegovina

In Neum Bay, interactions between maritime traffic and sentinel species (such as dolphins and loggerhead turtles) have been observed, especially during the tourist season when boat and scooter traffic intensifies. So far, two cases of loggerhead turtle fatalities caused by collisions with scooters have been officially recorded, with carcasses washing up on the beaches, creating both ecological and sanitary problems.

Currently, there are no clearly defined procedures or designated authorities at the local level for responding to such incidents. Responsibility formally lies with the Federal Traffic Inspectorate, which oversees maritime transport, but due to lengthy administrative processes, response is often delayed. In practice, these cases are managed locally in cooperation with sanitary inspection, veterinarians, and utility companies, particularly when it comes to the removal of dead animals. While all incidents are documented, there is no official mortality register for marine species at the harbormaster's office.

Montenegro

Currently, Montenegro has a large amount of boat traffic, from different sectors, Tour Boats, Ferries, Cargo Ships, Luxury Boats, Speed Boats, Jet-skis and Cruise ships. Each has their own set of regulations when entering Montenegro and within Montenegro.

Tour Boat operators are required to have the proper identification and permits. The skipper needs to have a RYA Power Boat level 2 license (Government of Montenegro, 2025).

Yachts will need a vignette (cruising permit) to be able to enter Montenegro, at the same time they need to register the people on board and pay their tourist tax. They also need to pay a clearance fee. The captain is required to complete the process with customs, immigration and the harbor master. This is required even if they are only stopping for fuel or water (noonsite, 2025).

Montenegro's ferry regulations primarily involve the purchase of a cruising permit (Vignette) for yachts and the registration of stay for all visitors, including those arriving by ferry. However, the passengers on board are responsible for paying their tourist tax themselves. (noonsite, 2025).

The Montenegrin state owns 4 cargo ships. The Municipality of Bar is the only municipality in Montenegro with a cargo port. (Montenegrin Investment Agency, 2025).

The Municipality of Kotor is the only cruise port in Montenegro and thus all the cruise ships have to go through the Bay of Kotor (Montenegrin Investment Agency, 2025). In 2024 a record-breaking 506 Cruise ship calls were registered in Kotor according to Port Operator Luka Kotor, the cruise ships brought in over 700,000 passengers (Pavlova, 2024).

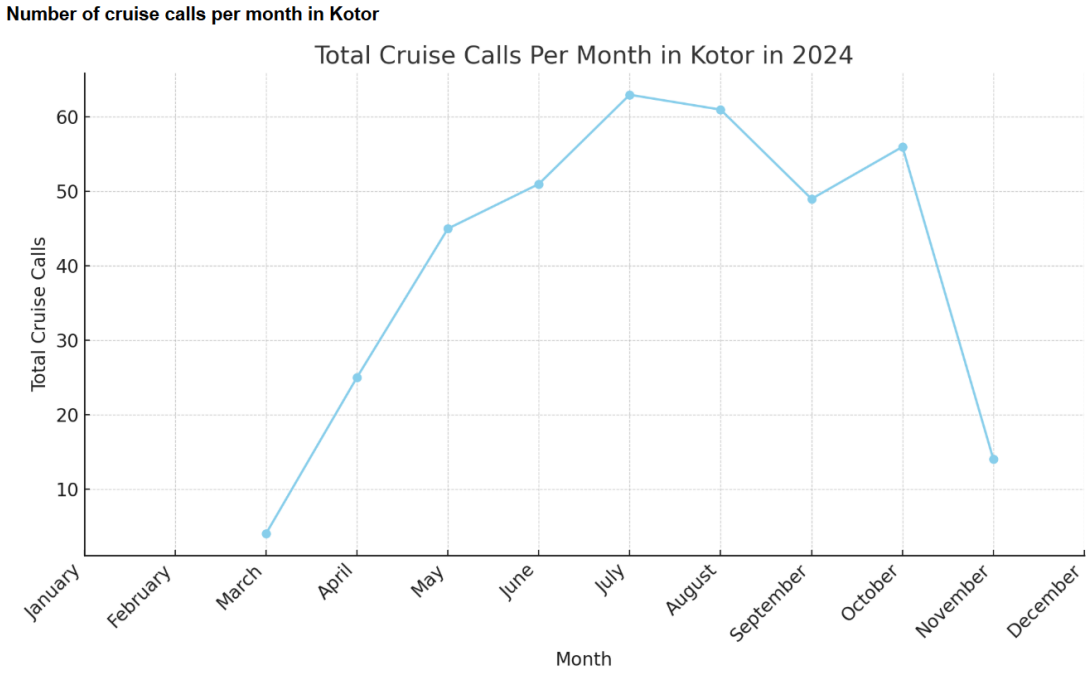

Figure 9. *Total cruise calls per month in Kotor in 2024 (CrewCenter, 2025).*

The number of cruise ships in Montenegro, exert a pressure on the local environment and while the legal framework regulates part of this pressure, mostly cruiser related pollution, none of the framework mentions the sentinel species (Nikčević 2019).

Some of the regulations are the same for each type of marine vessel. Such as the speed regulations and the requirement of a license. In the Bay of Kotor the general speed limit is 12 knots, with exceptions to certain areas. In the Kumborski tjesnac (The Narrows of Kumbor) the speed limit is 8 knots. A minimum distance of 50 m has to be kept to the shore of Kumbor In Prolaz Verige the speed limit is also 8 knots and additionally stopping is prohibited.

In terms of regulations regarding maritime vessels and their potential negative effect on sentinel species, Montenegrin law does not address this topic specifically. Nonetheless, several legislative acts do address the subject in an indirect way – through norms on marine protection, pollution prevention, and navigation safety. Good examples are Law

on Marine Environment Protection, Law on Maritime and Inland Navigation, Maritime Navigation Safety Law, and Law on the Protection of the Sea from Pollution from Vessels.

Similarly, local institutions and particular institutions (such as ports) also have their own sets of concrete procedures (e.g. Port of Kotor & its Rules of Conduct and Ecological Prevention LKO31). However, these rules do not address sentinel species explicitly. Hence, there is an obvious lack of concrete legislation that would protect these species by minimizing the negative effect of vessels cruising in the Adriatic waters of Montenegro.

The negative impact of boat traffic on sentinel species have been documented in Montenegro from short term area avoidance for dolphins and potentially for seals to long term alterations on the behavioural budget of dolphins, injuries on dolphins and sea turtles and documented mortalities on sea turtles (Akkaya et al., 2021; Awberty et al., 2019; Clarkson et al. 2018; Clarkson et al., 2020).

Albania

The boat traffic in Albania is mainly related to the tourist season and poses a considerable risk for the sentinel marine species in Albania through the marine pollution, acoustic pollution and vessel collision. There have been reported species disturbance from the boat traffic (e.g. monk seal) in the marine caves at the south part of Albania, as well as solid waste left from tourists in the marine caves. There have been also reported few cases of vessel collision of sea turtles and dolphins. However, the reporting is carried out randomly and a proper national monitoring plan for the marine sentinel species is missing.

Marine traffic in Albania is regulated by Law no.9251/2004 on Marine Code in Albania, which includes among other activities, the marine tourism, research and sports, but does not focus to the sentinel species protection.

There are limited awareness and information by the boat operators related to the marine sentinel species and their activity interaction with marine environment.

Despite of continues efforts from RAPAs in Albania, still the data on sentinel species monitoring remain fragmented. The number of the Marine Protected Areas in Albania (where the sentinel marine species monitoring appears to be more structured), is limited and covers a very small marine area of Albania.

Greece

Interactions between sentinel species and boat traffic include disturbance from noise pollution, collision risk, and habitat disturbance. Some of the existing solutions and practices to combat these interactions are to enforce the existing regulations, such as the ACCOBAMS (Agreement on the Conservation of Cetaceans of the Black Sea,

Mediterranean Sea, and contiguous Atlantic Area) and implement relevant guidelines to mitigate boat traffic impacts. The EU habitats directive also does the same for monk seals and turtles, providing protection via restrictions on disturbing their habitats.

Natura 2000 sites around the Aegean include specific provisions for limiting impacts from marine traffic. However, speed limits are not legally enforced across all sensitive habitats, but in certain areas (e.g Zakynthos National Marine Park for turtles) there are designated low-speed zones and no-go areas for boats.

Despite the existing framework, it should be noted that in Greece the enforcement of the few existing measures is weak, poor and ineffective. There is also a lack of specific measures that would be able to manage marine traffic (recreational and commercial - especially during the summer months in coastal waters) to reduce conflicts and possible collisions.

Regarding, procedures in case of collisions or strandings of sentinel species, an effort was initiated in 2024, for a national stranding network to be established coordinated by the Greek Ministry of Environment and Energy and NGOs. However, this process is not completed, and response relies on improvisation by various stakeholders, especially due to the lack of protocols related to the response but even to the documentation of such incidents.

COEXISTANCE OF SENTINEL SPECIES WITH FISHERIES

Fisheries interact with sentinel species in all the countries in the EUSAIR Region. Different types of interactions are consequence of the use of various fishing tools and techniques.

In Europe, since 1 January 2002, Article 11 *bis* of Regulation (EC) No. 1239/98 of 8 June 1998 amending Regulation (EC) No. 894/97, prohibits fishing with driftnets intended to catch species listed in Annex VIII among which: *Thunnus* spp.*, Xiphias gladius, Scomberesox* spp., *Hexanchus griseus,* and other species. This Regulation remained in force until 2019, and was subsequently implicitly repealed by Regulation (EU) 2019/1241 of the European Parliament and of the Council of 20 June 2019 *on the conservation of fishery resources and the protection of marine ecosystems through technical measures*, *amending Council Regulations (EC) No 1967/2006, (EC) No 1224/2009 and Regulations (EU) No 1380/2013, (EU) 2016/1139, (EU) 2018/973, (EU) 2019/472 and (EU) 2019/1022 of the European Parliament and of the Council, and repealing Regulations (EC) No 894/97, (EC) No 850/98, (EC) No 1224/2009 and (EU) No 1380/2013 of the European Parliament and of the Council. 2549/2000, (EC) n. 254/2002, (EC) n. 812/2004 and (EC) n. 2187/2005*. The Regulation 2019/1241 defines the methods and quantities of fish that can be caught in EU waters, as well as the fishing activities and areas where the use of acoustic deterrent devices is mandatory. This is to minimize the impact of fishing gear on marine ecosystems, particularly on sensitive species and habitats.

In addition to these EU regulations, at the Mediterranean level since 1952 a Regional Fisheries Management Organization (RFMO) was established under the provisions of Article XIV of the Constitution of the Food and Agriculture Organization of the United Nations (FAO). This organization called as General Fisheries Commission for the Mediterranean (GFCM) promotes the development, conservation, sustainable management, and best use of living marine resources in the Mediterranean, the Black Sea, and adjacent waters. It plays a critical role in fisheries governance and has the authority to make binding recommendations for fisheries conservation and management and for aquaculture development.

One of the recommendations which have brought about a significant change in the monitoring of fishing activities is Recommendation GFCM/33/2009/7 *concerning minimum standards for the establishment of a vessel monitoring system in the GFCM area of application,* in which the GFCM has established the need to install a Vessel Monitoring System (VMS) to collect real-time data on the position and activities of fishing vessels to combat illegal, unreported, and unregulated fishing. Subsequently, another specific topic addressed by GFCM was incidental catch of vulnerable species. About this, GFCM has published specific Recommendations, reported below in chronological order (Incidental catch of vulnerable species | General Fisheries Commission for the Mediterranean - GFCM | Food and Agriculture Organization of the United Nations):

- GFCM/35/2011/4 *on the incidental bycatch of sea turtles in fisheries in the GFCM area of application;*
- GFCM/35/2011/5 *on fisheries measures for the conservation of the Mediterranean monk seal in the GFCM area of application;*
- GFCM/36/2012/2 *on mitigation of incidental catches of cetaceans in the GFCM area of application;*
- GFCM/37/2013/2 *on the establishment of a set of minimum standards for bottom-set gillnet fisheries for turbot and conservation of cetaceans in the Black Sea;*
- GFCM/43/2019/2 *on enhancing the conservation of cetaceans in the GFCM area of application*.

Moreover, from 2015 to 2018, GFCM and ACCOBAMS Secretariats, in collaboration with the Regional Activity Centre for Specially Protected Areas (RAC/SPA) and funded by the MAVA Foundation coordinated a project called "*Mitigating the negative interactions between threatened marine species and fishing activities*" aimed to achieve several objectives:

- exploring the impact of bycatch on endangered marine species,
- Exploring the impact of bycatch on fishermen,
- reducing negative interactions with endangered species.

In this context, mitigation techniques to reduce bycatch were described considering, for example, turtle exclusion devices (TEDs), acoustic deterrents (pingers), and circle hooks (Sacchi, 2021). Moreover, illustrated guides and for managing sea turtles, cetaceans, seabirds, sharks, and pelagic rays accidentally caught in Mediterranean fisheries were published (Nastasi et al., 2021a, 2021b). These guides were specifically designed for fishermen and illustrate simple techniques for freeing animals from fishing gear and managing them once on board the vessel.

Italy

In Italy, medium- and large-scale fisheries, trawling, artisanal fishing, and aquaculture represent significant anthropogenic pressures on marine ecosystems. Since the Adriatic Sea is one of the largest continental shelf areas in the Mediterranean, it is heavily exploited by fisheries (Mannini and Massa, 2000; UNEP-MAP-RAC/SPA, 2014). This intense anthropogenic activity is also reported in the Maritime Spatial Management Plan (Figures 1–4). In recent years, interactions between fisheries and sentinel species, particularly cetaceans, have been increasingly monitored and characterized in Italy through the systematic analysis of stranding events. In 2020, the Italian Stranding Network (ISN) formally adopted the European guidelines on best practices for *post-mortem* investigations and tissue sampling, together with the ACCOBAMS Resolution 6.22, in order to harmonize diagnostic procedures and interpretation of evidence of interactions between cetaceans and human activities, including fisheries. Additionally, within the EU-funded LIFE DELFI project (LIFE18 NAT/IT/000942), a standardized diagnostic framework was developed to assess and classify fishery interactions in stranded cetaceans. This

framework, based on existing literature and supported by dedicated training for professionals, has been applied since 2020 to all relevant cases identified along the Italian coastline. According to this protocol, fishery interaction evidence was detected in 12.89% of examined carcasses, with fisheries identified as the likely cause of death in 10.32% of cases. The main detected interactions are accidental interactions involving incidental contact between active gear and the animal independently from its behavior (i.e., bycatch in animal history, presence of fishing gear, net marks); behavior-associated interaction, linked to a foraging behavior around fishing gear (i.e., larynx entanglement, ingestion); non-accidental interaction resulting from deliberate human action towards animal found (alive or dead) in or close to any fishing gear (i.e., sharp wound, amputation, penetrating wound) (Pietroluongo et al., 2025 and references therein).

In this context, to support the conservation of the marine ecosystem, Italy adopts the VMS system and the related monitoring system, operational on fishing vessels over 15 meters in length. Furthermore, thanks to the commitment of the GFCM, Fisheries Restricted Zones (FRAs) have been established. FRA are areas in which certain fishing activities are temporarily or permanently prohibited or restricted to improve exploitation patterns and the conservation of specific stocks and habitats. In the Mediterranean and Black Seas, there are ten FRAs established by the GFCM, for a total of 1,760,000 km² of marine habitats protected (Figure 6). In the Adriatic and Ionian Region, different FRAs have been established until now (Fisheries Restricted Areas | General Fisheries Commission for the Mediterranean - GFCM | Food and Agriculture Organization of the United Nations). The first one is located in the South Adriatic Trench, and it was designated for the protection of deep-sea habitats and resources below 1000 m (REC. GFCM/29/2005/1). Another one is established off Santa Maria di Leuca in Ionian Sea to protect Lofelia-reef (Recommendation GFCM/30/2006/3). Another important protected area is the Jabuka/Pomo Trench in the Central Adriatic area, which is designated to safeguard the habitats of *Merluccius merluccius* and *Nephrops norvegicus* (REC. GFCM/41/2017/3 amended by REC.GFCM/44/2021/2). The area is divided into three management zones: in zone A trawling is prohibited, in zones B and C, trawling is subject to seasonal restrictions. More recently, other 2 FRA are established: the Bari Canyon in the southern Adriatic Sea (GSA 18, Recommendation GFCM/44/2021/3) and the Otranto Channel both contributing to the protection of vulnerable marine ecosystems and essential fish habitats occurring in the area.

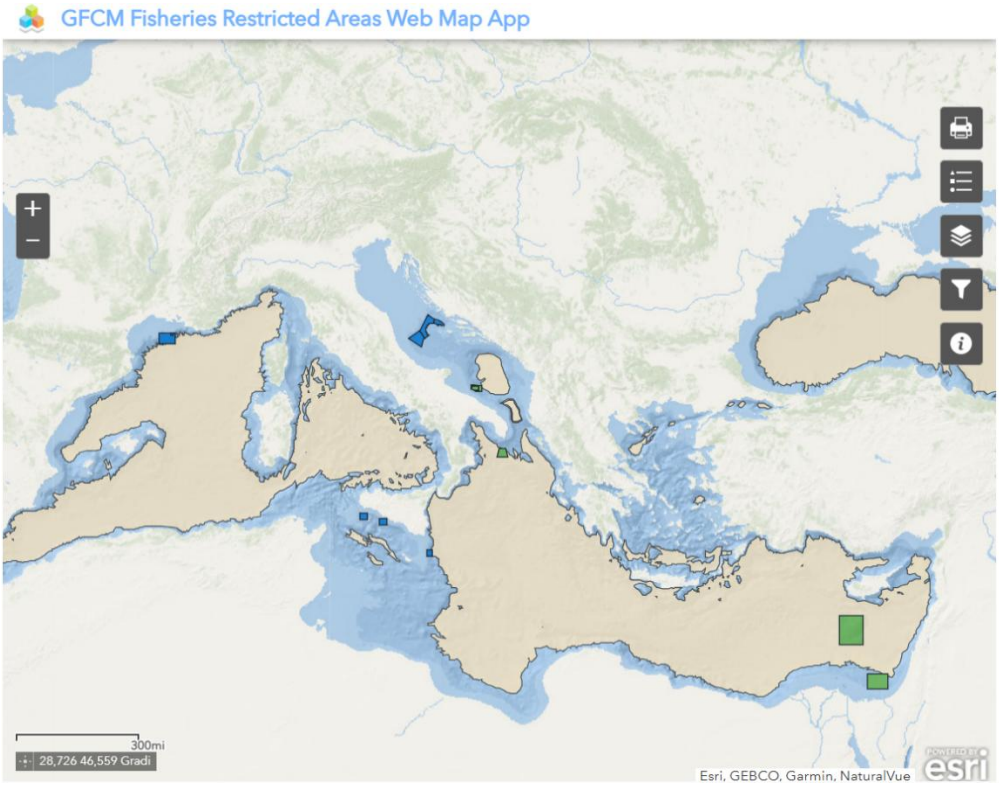

Figure 10 *- Map of FRAs at the Mediterranean and Black Sea levels. Blue areas represent Essential Fish Habitats, green areas represent Vulnerable Marine Ecosystems, and the beige area represents FRA protecting areas below 1000 m (Source: https://www.fao.org/gfcm/data/maps/fras accessed August 2025).*

Furthermore, in 2007, a national analysis of the problem of interactions between fishing activities and cetaceans was conducted by a National Workshop (AAVV 2007), organized as part of the funding of the knowledge-gathering activities commissioned by the Ministry of Agricultural, Food and Forestry Policies to ACCOBAMS (By-catch Italia-ACCOBAMS Program, 6G23).

Regarding any damage caused by interactions between free-ranging animals and human activities and the resulting compensation, Italy has prepared a single Operational Program (OP) pursuant to Article 17 of Regulation (EU) No. 508/2014, in close collaboration with the partners (such as city authorities, other competent public authorities, economic and social partners; and relevant bodies representing civil society) referred to in Article 5 of Regulation (EU) No. 1303/2013, to implement the priorities of the European Maritime and Fisheries Fund (EMFF). Compensation is provided as defined in Article 40 of Annex XIII of the Operational Program, "Compensation mechanisms for damage to catches caused by mammals and birds protected by Directives 92/43/EEC and 2009/147/EC," which provides a detailed description of the methodology for calculating compensation for damage caused by protected marine mammals

(https://www.masaf.gov.it/flex/cm/pages/ServeAttachment.php/L/IT/D/1%252Ff%252Fa%252FD.2ead83893d2bc34b0376/P/BLOB%3AID%3D8752/E/pdf?mode=download).

Despite these efforts, some critical issues remain, such as the lack of effort to effectively quantify species bycatch levels and the lack of clear contextualization regarding compensation for damages. Furthermore, awareness campaigns should be implemented to educate fishermen about the importance of conservation.

Croatia

Fisheries represent one of the primary ways humans interact with sentinel species in the Croatian part of the Adriatic Sea. The main concerns are incidental capture (bycatch) and entanglement, both of which can cause severe injuries that impair normal feeding, movement, and reproduction.

Croatia adopted recommendations of the ICCAT (International Commission for the Conservation of Atlantic Tunas), of which Croatia was a member until joining the EU, after which it transferred its membership to the EU, and the international organization GFCM (General Fisheries Commission for the Mediterranean), of which the Republic of Croatia is a member. The binding recommendations prescribing the obligation to introduce certain mitigation measures in fisheries to reduce the incidental catch of cartilaginous fish, sea turtles, marine mammals, and seabirds are as follows: Recommendation GFCM/35/2011/4 on the incidental bycatch of sea turtles in fisheries in the GFCM area of application; Recommendation GFCM/44/2021/14 on the mitigation of fisheries impacts for the conservation of sea turtles; Recommendation By ICCAT on the bycatch of sea turtles caught in association with ICCAT fisheries; Recommendation GFCM/35/2011/5 on fisheries measures for the conservation of the Mediterranean monk seal (*Monachus monachus*) in the GFCM Competence Area; Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area; Recommendation GFCM/44/2021/15 on the mitigation of fisheries impacts for the conservation of cetaceans and Resolution by ICCAT on cetacean encirclement.

These recommendations have been transposed into EU legislation as Regulation (EU) 2023/2124 of the European Parliament and of the Council of 4 October 2023 on certain provisions for fishing in the area of the General Fisheries Commission for the Mediterranean (GFCM) (amendment) and Regulation (EU) 2017/2107 of the European Parliament and of the Council of 15 November 2017 lays down management, conservation and control measures applicable in the Convention area of the International Commission for the Conservation of Atlantic Tunas (ICCAT), and amending Council Regulations (EC) No 1936/2001, (EC) No 1984/2003 and (EC) No 520/2007. In Croatia, the Marine Fisheries Act (Official Gazette 62/2017, 14/2019, 130/2021, 57/2022, 155/2023)

primarily governs the management and protection of renewable biological resources of the sea, including fish and other marine organisms.

Fishermen are legally obliged to report bycatch of sentinel species. Furthermore, within the framework of regional projects, educational programs, including workshops and awareness campaigns have been conducted to improve reporting and promote mitigation measures. The national stranding network manages both dead and live bycaught animals. Bycaught sea turtles may undergo rehabilitation in one of the centres mentioned above, if necessary. In addition, several veterinarians along the coast, outside of these centres, are trained and equipped to perform surgeries on turtles to remove fishing gear, such as swallowed hooks, plastic bags, or ropes, from the digestive system, or to treat injuries caused by entanglement.

Based on data collected during boat-based surveys, bottlenose dolphins are interacting with bottom trawlers in all parts of the Croatian Adriatic Sea, however with differences in frequencies of these interactions. For instance, when operating bottom trawlers were checked for presence of bottlenose dolphins, they were found in 23.7% of cases in the Cres-Lošinj region compared to 4% of cases in Northern Dalmatia and 4.8% of cases around the island of Vis (Pleslić, 2022). Furthermore, the rate of interactions between bottom trawlers and bottlenose dolphins seems to have increased in Cres-Lošinj region in the last three decades, as these interactions were reported to make up 4.6% of behavioural budget in early 1990s (Bearzi et al. 1999), increasing to 21.8% in 2021 (Holcer et al., 2022) and 20.5% in 2022 (Pleslić et al. 2023). Similarly, frequency of these interactions has increased from 10% in the period from 1995 to 2003 (Fortuna, 2006), to the aforementioned 23.7% in the period from 2005 to 2014 (Pleslić 2022), 29.3% in 2022 (Pleslić et al., 2023) and 21% in 2024 (Blue World Institute, 2025).

Interactions between cetaceans and fisheries were documented in 96 cases (20.9%) of stranded dead cetaceans recorded between 1990 and 2019 in the Croatian Adriatic. Bycatch was the most frequent type of interaction, with 66 cases (14.4%) reported (Đuras, M. A. Galov, K. Korpes, M. Kolenc, M. Baburić, A. Gudan Kurilj, T. Gomerčić (2021): Cetacean mortality due to interactions with fisheries and marine litter ingestion in the Croatian part of the Adriatic Sea from 1990 to 2019. Veterinarski Arhiv 91, 189-206. DOI: 10.24099/vet.arhiv.1254)

Cases of intentionally harmed bottlenose dolphins and monk seals were recorded in the Croatian Adriatic. It is speculated that most of these incidents occurred during fishing activities (Đuras M, Kolenc M, Gomerčić T, Gudan Kurilj A, Galov A, Korpes K (2024) Intentional harm in marine mammals stranded dead in the Adriatic Sea, Croatia, 1990-2023. Dis Aquat Org 160:75-93. DOI: 10.3354/dao03826

Numerous loggerhead turtles die after becoming entangled in fishing nets. Additionally, serious injuries such as limb amputations from nets and ropes, or ingestion of fishing

hooks embedded in the digestive system, significantly reduce survival chances and raise welfare concerns.

A 2021 survey conducted in Croatia revealed that some fishermen expressed the view that it would be better if dolphins were absent from the area. Depredation was confirmed as a major concern. In contrast, 79.5% of surveyed fishermen considered sea turtles important and in need of protection. Overall, attitudes toward sea turtles were more positive than toward dolphins (Macan, I., A. Piplica, M. Đuras (2021): Procjena općeg mišljenja i informiranosti ribara u Hrvatskoj o dupinima i morskim kornjačama. (Assessment of fishermen's general opinion and knowledge about dolphins and sea turtles in Croatia). Veterinar 59: 11-20. (in Croatian). Due to the negative perception of dolphins, bycaught dolphins are often not reported, leading to significant underestimation of actual bycatch numbers.

A major issue remains the absence of a widely established, centralized national compensation scheme in Croatia that systematically reimburses fishers for gear loss or catch damage caused by sentinel species.

Slovenia

Dolphin distribution in Slovenian and adjacent waters overlaps with areas used intensively by fishermen (Genov *et al.* 2008, Genov et al. 2019) and interactions with fisheries are common (Genov *et al*. 2008, Kotnjek *et al*. 2013, Kotnjek 2016, Genov et al. 2019). Of the 26 cases of common bottlenose dolphin strandings reported in Slovenian waters between 2002 and 2023, 42,3 % had their cause of death attributed to fisheries (either confirmed or strongly suspected, Genov 2020, Morigenos, unpublished data). In all of the cases where death was confirmed to be bycatch related, the gear involved was bottom-set nets (Genov 2020, Lokar & Genov, 2024).. Loggerhead sea turtles are occasionally bycaught in gill and trammel nets, as well as bottom trawlers (Žiža et al. 2001, T. Genov, personal observations). When still alive, they are typically released by fishermen immediately or following a recovery from a comatose state. They are sometimes treated in the Piran Aquarium, which functions as a rehabilitation centre.

According to Regulation (EU) 2019/1241, which aims to ensure that incidental catches of marine mammals, marine reptiles, seabirds and other non-commercially exploited species do not exceed levels provided for in EU legislation and international agreements that are binding on the EU, member states are required to put in place technical measures and mitigation measures to minimize and, where possible, eliminate the catching of such species by fishing gear. However, there are no mitigation measures in place for decreasing entanglement of dolphins and sea turtles in Slovenia.

Fishermen have learned to keep comatose turtles aboard their vessels until they are well enough to be released back into the sea, but more work should be done on outreach and

information dissemination among fishermen to improve their negative perception of dolphins.

There is no system of compensation in place for damaged fishing tools and decreased landings caused by dolphins. However, it is at times being considered by relevant organisations.

Bosnia and Herzegovina

In the Neum area, fishing activities have occasionally resulted in unintended interactions with sentinel species, such as loggerhead turtles and protected fish species. While local fishers are generally aware of species that must not be harvested and return them to the sea if they are not severely injured, the main issues lie in the lack of formal regulation and oversight.

In Neum, interactions between fisheries and sentinel species reveal several significant challenges. The national Fishing Law does not define closed seasons for species during their spawning periods, and there is no official register of individual fishers or their vessels, with formal registration existing only for fish farms. Fishery management plans, recreational or sport fishing regulations, and systematic documentation of bycatch incidents are absent, while the legal framework does not adequately regulate the treatment of bycatch or provide compensation for damage to fishing gear caused by sentinel species.

Despite these gaps, local fishers demonstrate a strong sense of responsibility by voluntarily releasing accidentally caught protected species, reflecting awareness and willingness to mitigate harm. Educational initiatives targeting fishers on protected species and sustainable fishing practices have been encouraged, although they are not yet systematically implemented. Authorities at cantonal and federal levels are expected to address these issues by developing fishery management plans, establishing fisher registers, defining closed seasons, imposing penalties for violations, and appointing fishery wardens to ensure effective monitoring and enforcement. Collaboration with environmental associations and regional projects, such as Interreg initiatives, offers additional opportunities to share knowledge and adopt best practices.

Montenegro

In recent years, Montenegro's fishing sector has undergone a gradual change, though it remains relatively small in both scale and economic contribution. The *ADRINET Project Handbook* (2019) reported 244 licensed fishing vessels, of which only thirteen were longer than fifteen meters (ADRINET, 2019). By contrast, *Eurofish* data from April 2024 show an expansion to 338 vessels, comprising 24 trawlers, 27 purse seiners, 56 longliners, and a remaining group of smaller boats that primarily rely on gillnets (*Eurofish*, 2024).

Despite this increase, the overall economic footprint of fisheries remains modest. According to *Eurofish* (2024), fishing, together with agriculture and forestry, contributes about 6.5% to Montenegro's GDP, with fishing alone representing only a small share. The country's total marine catch accounts for roughly 1–2% of the overall catch in the Adriatic Sea, underscoring its limited yet regionally significant role in coastal livelihoods (*Eurofish*, 2024).

Montenegro's fisheries are dominated by small coastal vessels, typically averaging seven meters in length and over thirty years of age, which reflects a largely traditional fleet structure (*Eurofish*, 2024). While the total capacity has seen a slight increase in the past decade, the process of modernization has been slow (Joksimović et al., 2023).

Structurally, Montenegro still lacks a dedicated fishing port or organized landing sites. Most vessels operate out of commercial marinas and city ports such as Bar, Budva, and Herceg Novi, none of which have facilities for fish auctions or wholesale distribution (RAC/SPA, 2013; *Eurofish*, 2024). The main commercial species remain typical of the Adriatic region—sardine *(Sardina pilchardus)*, anchovy *(Engraulis encrasicolus)*, mackerel *(Scomber scombrus)*, tuna *(Thunnus thynnus)*, hake *(Merluccius merluccius)*, sea bream *(Sparidae)*, monkfish *(Lophius piscatorius)*, gurnard *(Triglidae)*, and seabass *(Dicentrarchus labrax)*—which together represent the backbone of Montenegro's small but enduring fishing tradition (*Eurofish*, 2024).

Regarding the current legal framework, it is important to note the new Law on Sea Fisheries, adopted in mid-2025. The law introduces ecosystem-based management and the precautionary approach, in line with EU Common Fisheries Policy principles, and provides for the gradual elimination of discards. This framework emphasizes the need to minimize negative impacts of fishing on the marine ecosystem and other marine organisms, including sentinel species (Law on Sea Fisheries, 2025 – Draft / Government portal).

A study by Rudd et al. (2022a), showed that artisanal fishing did have an impact on the behavioural budget of common bottlenose dolphins in Montenegro. They determined that there is a significant increase of diving and surface-feeding near commercial fishing vessels, indicating opportunistic feeding behaviour of the species (Rudd et al., 2022a). Relying on trawlers as a food source is associated with a lot of risks to the animal, such as natural behavioral alterations, entanglement, and collision risks (Brotons et al., 2007; Jaiteh et al., 2012; Pace et al., 2003; Zappes et al., 2013). A study by Gvozdenovic et al. (2016), showed that fishing in Montenegro has an impact on the sea turtles, as they reported multiple individuals caught in netting, with some being saved by local fishermen. The records were later updated with more individuals impacted by the nets (Gvozdenovic et al., 2021).

Albania

Fishery in Albania is regulated by Law no. 64/12, "On Fishery", amended, and DCM no. 256/19, "on laying down Detailed Rules for the Collection, Management and Use of Fishery Sector Data and the Support for the Scientific Advice for the Fishery National Strategy".
Albania is part of the GFCM, General Fisheries Commission for the Mediterranean.
Fishery activity in Albania is a long tradition especially for the small-scale fishery and the coastal lagoons. Overall, the fishery sector is small but has been developed in the recent decade. Based on the data collected from the GFCM fleet register (2018 data) there are 631 vessels of which 226 are with LOA>12 m, while 405 are smaller than 12 m. Albania has 5 licenses for the use of hydraulic dredges and currently, one license for the bluefin tuna fishery. Most of SSF boats use gill nets, trammel nets and hook lines. There are also 6 fixed structures (stationary uncovered pound nets) along the Albanian coast. The recreational/leisure fisheries are developed but statistics and regulations are loosely implemented. The fleet of the larger vessels is largely skewed toward the bottom trawlers and as such demersal species are the main species under fishing pressure (UNEP/MAP-SPA/RAC, 2021).
Marine fishery appears to be not the main issue threatening the sentinel species in Albania. Fishermen have sufficient information on the sentinel species usually they are cooperating effectively with the RAPAs in Albania. However, there are cases of sea turtles stacked to the ghost gears or stavnik along the Albanian coast. There are 7 risk areas of "ghost gear" in the Adriatic and Jonian sea in Albania identified, especially Karaburun (Çurri et al, 2024; Çurri Anxhela' Kolitari Jerina; 2024). Not appropriate fishing practices (such as fishing with dynamite) appear to be reported even though as rare cases.

Greece

Bycatch and depredation are the key interactions of sentinel species with fisheries in Greece as well. This reduces catch efficiency and can lead to economic losses.

Bottlenose dolphins and normally solitary or in small pods of adult individuals, frequently depredate on artisanal fishing nets. However, bycatch is incredibly rare. Monk seals frequently depredate on artisanal fishing nets, bycatch is incredibly rare however deliberate killings were recorded especially in previous years, however such incidents in the last 3-4 years have not been observed or reported. Sea turtles frequently depredate on artisanal fishing nets, bycatch occurs but in most cases are unreported and animals are released to the sea by fishermen.

In previous years, in certain instances awareness programs funded by EU projects such as Life+ were poorly implemented and contributed to increased hostility and conflicts rather than their management. However, long-term awareness raising and cooperation efforts that have duration and context further than a EU project such as those carried out

by Archipelagos institute in the north and east Aegean islands seem to bring a greater result in the reduction of conflicts.

Since 2024 The Greek Ministry of Rural Development provides financial compensation for coastal fishing vessels for the destruction of fishing gear and loss of production caused by depredation from marine protected species.

Finally, ongoing research and monitoring of population and their interactions with fisheries are crucial for adapting and improving conservation strategies.

COEXISTANCE OF SENTINEL SPECIES WITH THE OFFSHORE ENERGY HARVESTING

Offshore activities such as oil and gas exploration, wind farm construction, dredging, and large-scale fishing operations are growing rapidly worldwide. While these activities provide energy and economic benefits, they also create serious challenges for marine wildlife, including dolphins, turtles, and monk seals.

Dolphins are strongly affected by underwater noise produced during seismic surveys, pile driving, and drilling. These loud sounds interfere with their echolocation and communication, making it difficult to navigate, find prey, or maintain social bonds. Prolonged exposure can cause stress, displacement from important habitats, or even hearing damage. Sea turtles are impacted in several ways. Construction of offshore structures can damage or remove seagrass beds, which are vital feeding habitats. Light pollution from platforms and vessels may disorient turtles, especially hatchlings trying to reach the sea. Oil spills linked to offshore drilling pose a severe threat by contaminating turtle nesting beaches, poisoning food sources, and coating turtles' shells, which reduces mobility and survival. Since monk seals already live in small, fragmented populations, any additional disturbance from offshore activity has a serious impact on their survival.

Italy

In Italy the offshore renewable energy sector is expanding, with an increase in concessions for the construction of offshore wind farms along the Italian coasts (Figure 7). In particular, the first inshore wind installation in Italy is Beleolico wind farm positioned in proximity of Port of Taranto (Apulia Region), operational since 2022 and including ten turbines with a total capacity of 30 MW.

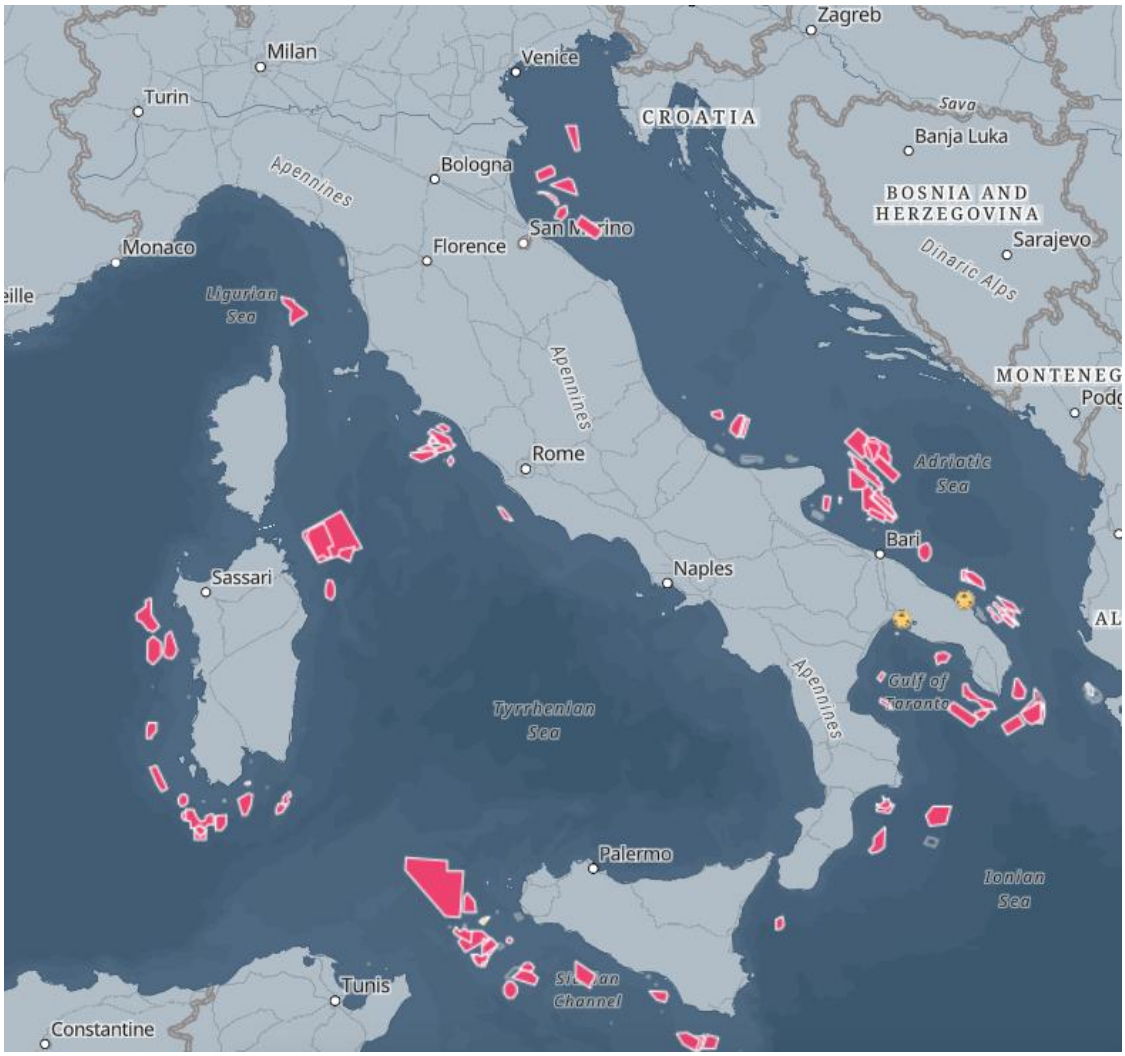

Figure 10 *- Map of concession for offshore wind farm along Italian coastline* (https://www.4coffshore.com/)

In addition to this, 93 projects for the construction of offshore wind farms have already been presented in Italy, with Puglia, Sicily and Sardinia as the most active regions (Table 1) (https://www.rinnovabili.it/wp-content/uploads/2025/07/Report-Finalmente-Offshore-2025.pdf).

Table 1 - Distribution of offshore wind farm projects submitted by companies by region (Source: Legambiente)

REGION	NUMBER OF PROJECTS	TURBINES	MW
Abruzzo	1	54	800
Campania	6	244	3.966
Emilia-Romagna	2	126	930

Lazio	7	244	3.728
Basilicata	1	14	210
Molise	1	45	162
Puglia	26	1.758	24.663
Sicilia	25	1.359	20.593
Sardegna	24	996	16.153
Toscana	1	48	864
Total	**93**	**4.888**	**74.069**

In Italy, the projects that could have significant environmental impact, are subject to an Environmental Impact Assessment (EIA, VIA in italian) (Legislative Decree 152/2006, *Article 6, Annex 7)*. The plans or programs may have a significant environmental impact are subjected to Strategic Environmental Assessment (SEA, VAS in italian) (Legislative Decree 152/2006, *Article 6, Annex I and II)*. In these procedures if such projects, plans or programs may impact on Natura 2000 network sites or species protected by the Habitats (92/43/CEE) and Birds (2009/147/CEE) Directives, an Environmental Incidence Assessment (VINCA in Italian) is mandatory (*D.P.R. 120/2003 and Linee Guida Nazionali per la Valutazione di Incidenza, Direttiva 92/43/CEE "Habitat" Art, 6, Annex 3 and 4)*.

Furthermore, the Legislative Decree 181/2023, *Urgent provisions for the country's energy security, the promotion of the use of renewable energy sources, support for energy-intensive businesses and for reconstruction in the areas affected by the exceptional flooding events that occurred starting from 1 May 2023,* the Ministerial Decrees of June 21 2024, *Regulations for the identification of surfaces and areas suitable for the installation of renewable energy systems,* and of June 19, 2024 (FER2), *Incentives for innovative renewable energy plants or those with high generation costs that are innovative and have a low impact on the environment and the local area,* promote the identification of suitable offshore areas and provide incentives for innovative renewable energy projects, including floating and fixed offshore wind. Ministerial Decree 237/2024, *Approval of Maritime Spatial Management Plans pursuant to Article 5, paragraph 5 of Legislative Decree No. 201 of 17 October 2016,* approved the Italian Maritime Spatial Plan, in line with Directive 2014/89/EU, to ensure sustainable marine spatial planning, while the Port Decree of July 4, 2025, *Interministerial decree identifying maritime state-owned areas suitable for the development of offshore shipbuilding hubs to strengthen the national industrial supply chain in the marine renewable energy sector,* designates major Italian ports as strategic hubs for the installation, deployment, and maintenance of offshore renewable energy infrastructure.

Regarding the oil and gas sector, operations are governed by a consolidated legal framework (L. 9/1991, *Rules for the implementation of the new National Energy Plan: institutional aspects, hydroelectric plants and power lines, hydrocarbons and geothermal energy, self-generation and tax provisions* and D. Lgs. 152/2006, *Environmental regulations*), which requires EIA procedures and includes specific attention to noise mitigation, particularly for airgun surveys, known to cause significant behavioral and physiological

impacts in cetaceans and sea turtles (i.e., Affatati e Camerlenghi, 2023). To strengthen environmental safeguards, the Italian government approved in 2022 the PITESAI (Plan for the Sustainable Energy Transition of Suitable Areas), which prohibits new hydrocarbon exploration and drilling in ecologically sensitive zones, such as biodiversity hotspots and marine protected areas. This Plan represents an important step toward an energy transition based on renewable sources, particularly in a context where over 130 oil and gas extraction facilities operate in the Adriatic Sea, with a high concentration of platforms along the western coast, an area of significant ecological importance for marine life. The report *"Status and Conservation of Cetaceans in the Adriatic Sea"* (UNEP-MAP-RAC/SPA, 2014) highlights concerns related to seismic surveys, LNG terminals, and the potential risk of accidents, all of which pose threats to marine species. The cumulative impact of these activities constitutes considerable pressure on cetaceans, especially in the semi-enclosed and ecologically sensitive Adriatic Sea. This underscores the urgent need for stringent environmental regulations, comprehensive impact assessments, and the implementation of effective mitigation measures to protect marine biodiversity in the region. Among the mitigation measures recommended for offshore activities that may impact marine wildlife are the presence of Marine Mammal Observers (MMOs) and the use of Passive Acoustic Monitoring (PAM) systems, in line with ACCOBAMS guidelines; the implementation of shutdown protocols if sensitive species are detected in the vicinity of operations; and seasonal restrictions to avoid overlaps with migration or breeding seasons.

Croatia

In the Northern Adriatic Sea there are: 1 gas field, 19 gas production platforms, 1 compressor platform / central point of the gathering-transportation-production system, 52 drilled wells / 59 wells currently in production and about 650 km of gas pipelines and other lines are laid on the seabed. Gas produced in the North Adriatic fields is sent via the Pula entry point into the Croatian gas transport system, and gas produced in the Aiza Laura contract area is transported via the Falconara entry point into the Italian gas system. (Agencija za ugljikovodike; Krpan, M., 2024).

In 2014, 2D seismic survey was conducted at the 12.000 km^2 of Croatian underwater area, showing great potential for further exploitation.

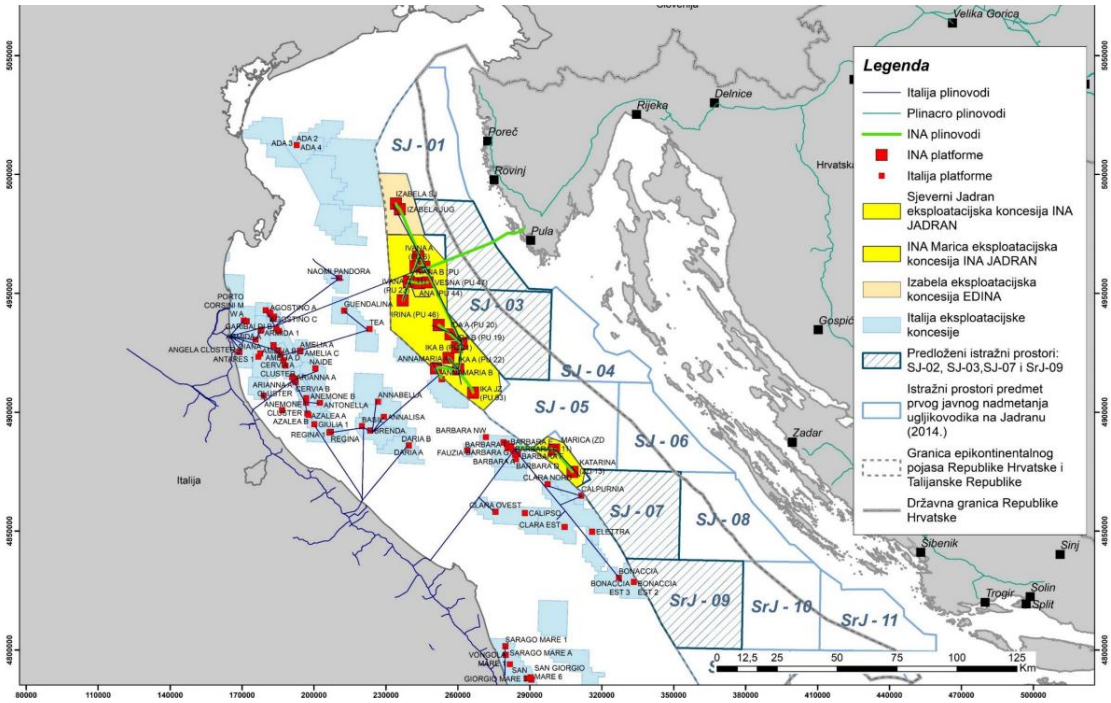

Figure 11 *- Map of exploration and exploitation areas in the northern Adriatic Sea* (https://mpgi.gov.hr/UserDocsImages/Zavod/events/07%20MSP_Du_AZU_Marijan%20Krpan.pdf)

Considering the need to boost offshore renewable energy sources across the EU and given that such projects tend to have longer construction times than land-based projects due to their size and complexity, the European Commission has outlined the main challenges and proposals for adopting offshore renewable energy sources. To tap into this potential in Croatia, it is crucial to develop the legislative framework as soon as possible.

Offshore energy harvesting and any future drilling or platform work are covered by sector-specific permits with possible transboundary obligations and regional consultations. Historical offshore hydrocarbon activity in the northern Adriatic underlines the need for strict environmental safeguards. Private and state actors in Croatia run pre-development project and feasibility studies.

In 2023, the Action Plan for the Uptake of Offshore Renewable Energy Sources was developed showing that Croatia is at the beginning of its offshore renewable energy journey. The technical and geographic potential is very large, especially for offshore wind (fixed + floating) and possibly floating solar/wave combinations. Despite the high potential, very few large commercial offshore projects are currently operational in Croatia. The initial measurement and feasibility work are still in early stages (e.g., first measurement campaign started 2022)

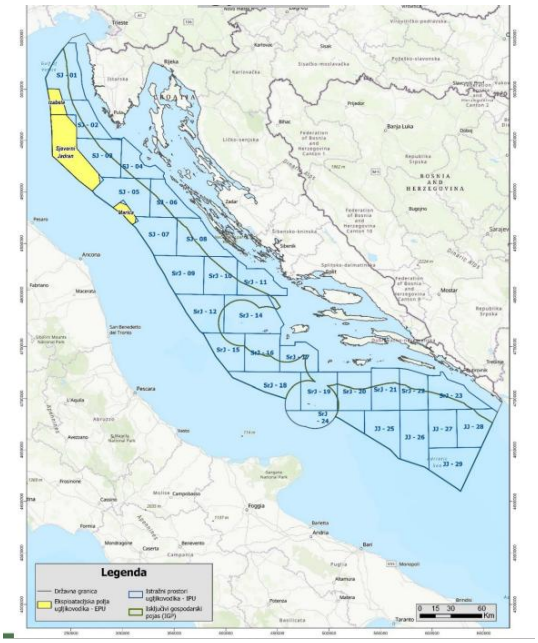

Figure 12 *- Maps of exploitation fields and research areas for hydrocarbons in Croatian part of the Adriatic Sea*
(https://mpgi.gov.hr/UserDocsImages/Zavod/events/07%20MSP_Du_AZU_Marijan%20Krpan.pdf)

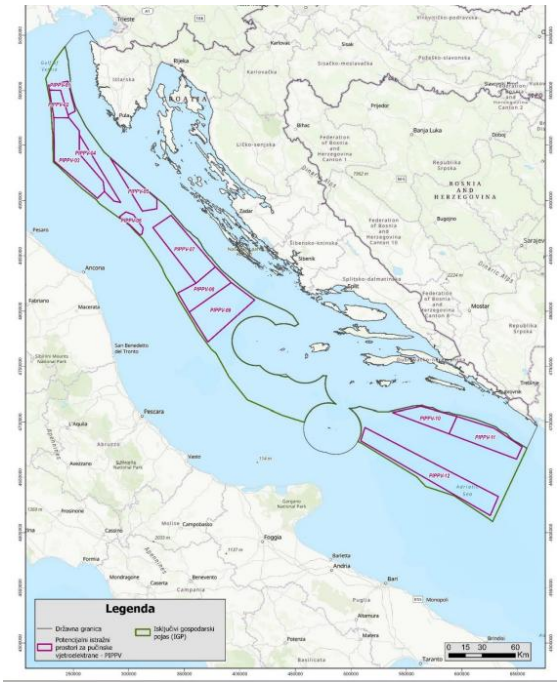

Figure 13 - *Maps of potential exploration areas for offshore wind farms in Croatian part of the Adriatic Sea*
(https://mpgi.gov.hr/UserDocsImages/Zavod/events/07%20MSP_Du_AZU_Marijan%20Krpan.pdf

If the regulatory, financial and infrastructure pieces align, Croatia could become a significant player in the Adriatic offshore renewables area. On the other hand, given the early stage and the challenges, much is still planning, measuring and feasibility. From a sustainability viewpoint: careful design will be needed to minimise impacts on marine ecosystems, shipping routes, tourism and coastal environments. The Action plan for offshore renewables in Croatia emphasises the need for a clear maritime spatial plan, defined zones for offshore renewables (with low/medium impact), environmental assessments, and streamlined permitting.

Moreover, before any further development of this industry, there is an indispensable need for comprehensive analysis of environmental / site issues such as marine habitats, underwater archaeology, etc.

Slovenia

No energy harvesting plants are present in Slovenian waters, nor are such projects planned in the foreseeable future.

Bosnia and Herzegovina

In Bosnia and Herzegovina, there are currently no offshore energy harvesting activities, such as wind farms, oil, or gas drilling, within the territorial waters. As a result, no interactions between sentinel species and offshore energy installations have been detected, and no related conflicts or mitigation practices exist. Consequently, there are also no specific regulations, impact assessment procedures, or management measures currently applied for offshore energy projects in relation to marine sentinel species. Any future development in this sector would require careful environmental assessment and the establishment of regulations to prevent potential negative impacts on marine ecosystems and sentinel species.

Montenegro

At the moment there is no offshore energy harvesting. However, since 2018, two seismic surveying activity were conducted in Montenegrin water. Surveyed blocks cover shallow shelf area with up to 100 m depth, only 1000 m from the coast so seismic boat activity can be easily observed (and heard) from the coast. Shelf area is the main habitat of bottlenose dolphins in Montenegro hence intensive seismic activity in the area is causing yet another unprecedented disturbance to the local population. The research published by Fortuna et al. in 2018 identified the area of current surveying as a potential Natura

2000 area for bottlenose dolphins, indicating the importance of this habitat for the species.

Since Montenegro is committing to full decarbonization by 2050, as per international agreements, offshore energy harvesting is being looked into as a probable solution. Two studies, one in 2024 and one in 2025, have looked into the offshore wind energy potential (Bogdanović & Ivošević, 2024; 2025). Bogdanović & Ivošević (2025) have determined two potential scenarios for Montenegro. A bottom fixed wind farm for depths up to 60m and a floating wind farm for bigger depths. It was concluded that a floating wind farm would be the most suitable option for Montenegro as it would result in the highest energy output. So, while there is no threat of offshore energy harvesting to the sentinel species at the moment. It cannot be ruled out as a threat in the near future. At this time, the legal framework will only allow for investments in floating solar farms, in terms of offshore energy harvesting (Montenegrin Investment Agency, 2025).

Albania

Offshore energy harvesting in Albania is an emerging sector, with the country aiming to leverage its 345-km-long coastline on the Adriatic and Ionian Seas to diversify its energy mix away from an over-reliance on hydropower. While no large-scale offshore wind farms are currently operational, there is significant interest in exploring offshore wind and floating solar technologies to enhance energy security, particularly to mitigate electricity imports during dry summers.

Greece

At the moment there are no existing offshore windfarms in Greece, while offshore oil and gas concessions are located in the Hellenic Trench, marine area from Corfu to Crete. This area is an important habitat for marine mammals, therefore represents a threat for the sentinel species. There are several risks from offshore energy activities:

- Noise pollution – operations offshore can disrupt communication, hunt and navigation in the species;
- Habitat disruption – alteration of migration routes;
- Chemical pollution

Regulations for Environmental Impact Assessments (EIA) and Strategic EIA (SEIA) are mainly driven by EU directives, like Directive 2014/52/EU or the Directive 2013/30/EU, and by governing laws like Law 4964/2022 that establishes the framework for offshore windfarms and Law 4014/2011 for oil and gas, with HEREMA (Hellenic Hydrocarbons and Energy Resources Management Company) overseeing the assessment.

To minimize harm to sentinel species there are several mitigation solutions:

- Spatial planning – site the offshore operations away from critical habitats and migration corridors;
- Seasonal restrictions – avoid activities during breeding and migration seasons
- Monitoring plans – monitor species presence during exploration and operation phases
- Technology Innovations – use of improved tools more animal-friendly
- Collaboration with local communities, NGOs

COEXISTANCE OF SENTINEL SPECIES WITH DOLPHIN WATCHING ACTIVITIES

Dolphin watching is growing fast along the European Mediterranean coasts, without an increasing effort for its management and monitoring of the effects on the target species. For years whale and dolphin watching has been promoted as ecotourism with education and conservation benefits for cetaceans (La Manna et. all, 2020). However, as sentinel species, dolphins and all other cetaceans are particularly sensitive to environmental stressors. Disturbances from vessel traffic, excessive human presence, or habitat modification can induce stress, alter behavioural patterns, and reduce reproductive success in these species. For instance, close boat approaches to cetaceans may disrupt foraging behaviour, while excessive use of the beaches in the nesting areas can decrease sea turtle's breeding success.

The interaction between tourism and sentinel species in the EUSAIR Region is therefore complex, involving both potential benefits and risks.

On one hand, ecotourism branded around sentinel species can provide strong incentives for conservation. For example, dolphin-watching not only generate significant economic revenue but also promote public awareness of marine ecosystem health. The incorporation of an interpretational aspect of a dolphin watching tour can significantly add to the participants' environmental knowledge, pro-environmental behaviour intentions, satisfaction and intention of revisiting (Cheng et al. 2018). Also, by attributing economic value to the presence of sentinel species, tourism can foster community support for conservation initiatives and reduce exploitative practices.

The interaction of tourism with sentinel species is characterized by a delicate balance between conservation opportunities and ecological risks. The dual role of tourism as both a potential threat and a conservation tool highlights the importance of management frameworks that prioritize the well-being of sentinel species.

Italy

In Italy, currently there are no specific national regulations for dolphin watching activities as a tourist attraction. This means that, Italy does not require formal licensing for whale and dolphin-watching operators, nor standardized national procedures to regulate these activities. However, voluntary initiatives provide detailed guidelines aimed at ensuring the welfare of marine mammals and minimizing human disturbance. Among the most relevant instruments are the ACCOBAMS Agreement and the Pelagos Agreement, both applicable to Italian waters, particularly the Pelagos Sanctuary. These Agreements have

established a shared code of good conduct (https://www.accobams.org/wp-content/uploads/2016/06/ACCOBAMS_MOP6_Res6.20.pdf) to ensure that dolphin and whale watching activities do not negatively affect animals. The rules include maintaining a minimum distance of approximately 300 m (area of vigilance, Figure 8), limiting vessel speed (no more than 5 knots during approach), avoiding changes of direction following a route parallel to the animals' movement, avoiding noise turning off sonar and depth sounders, increasing approach distance in the presence of calves, withdrawing immediately in case of visible disturbance or escape behavior, limiting the duration of observation to a maximum of 30 minutes, avoiding entry into 100 m of forbidden zone (Figure 8). If entry is accidental, the vessel must stop and put engines in neutral.

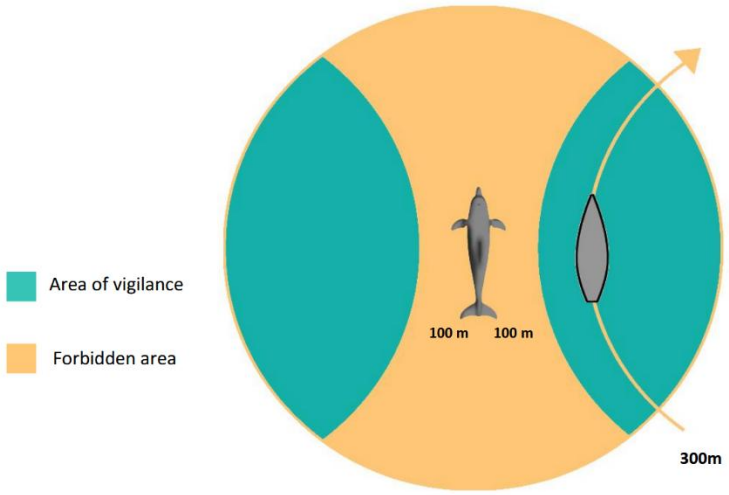

Figure 8 *- Areas of cetacean's approach (Source: ACCOBAMS-MOP6/2016/Doc37/Annex12/Res6.20).*

Other relevant instrument is the ACCOBAMS Resolution 4.7 (https://www.accobams.org/wp-content/uploads/2016/06/ACCOBAMS_MOP4_Res.4.7.pdf) that provides general guidelines for commercial cetacean watching, with an emphasis on animal welfare, educational value and minimal impact. Furthermore, the ACCOBAMS-Pelagos "High Quality Whale Watching" (HQWW)© Certification, detailed in the Resolution 6.20 (https://www.accobams.org/wp-content/uploads/2016/06/ACCOBAMS_MOP6_Res6.20.pdf), sets a voluntary standard for operators who want to offer responsible and sustainable marine mammal observation activities.

To obtain the HQWW Certification, the operators must:

- Participate in a certified training program focused on marine mammal ecology, behavioral guidelines, and best practices for reducing disturbance;
- Appoint a qualified and certified guide for each excursion;

- Ensure the tour includes educational content;
- Adhere to the code of conduct during all sightings and interactions with marine wildlife.

While these voluntary frameworks provide a solid foundation, Italy lacks national legislation regulating this growing tourism sector. Dolphin-watching activities are constantly growing, particularly in highly attractive areas such as Liguria, Tuscany, Sardinia, and the southern Adriatic. The risk is that this lack of mandatory licensing, operator training, or control mechanisms will increase disturbance to cetacean populations, which are already under constant stress. The ACCOBAMS – Pelagos HQWW label is currently adopted only by a limited number of operators in limited areas.

Croatia

Croatia regulates behavior around dolphins through the Nature Protection Act which prohibits capture, harassment, and teasing. Dolphin-watching operators are required to comply with standard maritime and passenger-transport regulations, including vessel registration, commercial charter and transport rules, skipper qualifications, and harbor-master permits, they must be legally authorized to carry passengers and comply with established safety and crew standards. However, there is no single nationwide "dolphin-watch license" regime that applies specifically to dolphin-watching activities.

Under the Croatian Nature Protection Act, marine mammals are strictly protected from capture, harm, or harassment. This prohibition constitutes the first and most important regulatory barrier governing any dolphin-watching activity.

In addition, The Ministry of Environmental Protection and Green Transition, in line with the ACCOBAMS Agreement has published a *Code of Conduct for Skippers – Rules of Conduct When Encountering a Dolphin or Whale* (https://www.haop.hr/hr/aktualnosti/pravila-ponasanja-prilikom-susreta-s-dupinom-ili-kitom):

- Do not direct the vessel straight toward the observed animals.
- If you wish to approach them, do so slowly, at a speed of less than 5 knots (9 km/h), follow the direction of their movement in parallel, and avoid sudden changes in direction or speed.
- Do not produce sudden engine noises. Ensure that within a 100 m radius of the animal there is only one vessel, and within a 200 m radius no more than three vessels.
- Do not stay near them for longer than 30 minutes.

- If the animals show signs of disturbance, or if mothers with calves are observed, leave the encounter area immediately (by changing direction without accelerating).
- Leave the encounter area by steering the vessel opposite to the animals' direction of movement, and only gradually increase speed once the vessel is more than 200 m away from the dolphins.
- For the safety of dolphins or whale individuals, do not swim or dive with them, do not feed them, and do not attempt to touch them.
- Do not throw garbage into the sea or leave it on the shore and beaches; dolphins may accidentally ingest plastic bags, which can cause their death.
- Any intentional disturbance of dolphins or whales must be reported to the State Inspectorate and the competent police authority.
- The sighting of an injured, sick, or dead animal must be reported to the number 112 or to Division of Environmental Protection and Nature (Zavod za zaštitu okoliša prirode) via the email address: vrste@mingor.hr.

This Code of Conduct is promoted mostly by NGOs through leaflets and social media campaigns. In addition, both national and regional authorities, together with NGOs, regularly remind boaters that activities such as circling, chasing, attempting to touch, feeding, or otherwise harassing dolphins are illegal.

However, many conservation obligations—such as minimum approach distances and restrictions on vessel behavior—are currently implemented only through voluntary codes of conduct. Instances of unacceptable behavior during dolphin-watching trips, including the use of loud music, excessive vessel speed, and prolonged time spent with dolphin groups, have already been documented. Such illegal activities, when observed, can be reported either to the free emergency number 112 or directly to the police. Several cases have already been prosecuted based on video evidence, with vessel owners required to pay the prescribed fines.

What remains missing is a uniform, nationwide scheme designed specifically for dolphin-watching. Such a scheme could include a licensing system, carrying-capacity limits, and mandatory reporting requirements. This would help standardize practices across regions and make compliance easier to monitor and enforce.

Slovenia

In Slovenia, no organized dolphin-watching activities are currently offered as a tourist attraction, and therefore no specific regulations are in place to govern such activities, other than provisions of ACCOBAMS (Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic area). The resident bottlenose dolphin population regularly moves between Slovenian waters and other parts of the

northern Adriatic, such as Croatia, where they are exposed to dolphin-watching tourism. At the national level, there is no licensing system for dolphin-watching operators, nor have any carrying-capacity assessments been conducted to evaluate the potential impacts of such activities on dolphin populations.

Bosnia and Herzegovina

In Neum, dolphin-watching activities as a tourist attraction are not formally regulated. There are currently no specific legal requirements or licensing procedures for operators, and no official assessments of carrying capacity have been conducted. Most tours are led by trained divers who have received education on appropriate behavior around wild animals, but these measures are informal and voluntary. There are also no established regulations regarding the frequency or size of tours, safety distances from animals, or other management measures. Overall, while some awareness exists among operators, dolphin-watching is largely unregulated, and there is significant room for introducing formal rules, licensing, and education to ensure sustainable and safe interaction with sentinel species.

Montenegro

As there is no official precedent of any dolphin watching activities in Montenegro, there is no requirement for licensing, any mandatory education or training, or any carrying-capacity assessment specific for dolphin watching activities. However, tour operators are required to have the proper approvals to be able to host their tours. Tourist guides need proper identification and work permits, also to operate on the water the skipper will need to have a Power 2 Boat operating license (Government of Montenegro, 2025).

In Montenegro, dolphin watch activities lack a clear legislative framework. For research observations, the Environmental Protection Agency of Montenegro issues a specific research permit for this kind of activity, which is subject to defined conditions (EPA Montenegro, 2019). However, a 2022 study emphasizes that it would be beneficial to regulate dolphin-watching tours in Montenegro, in order to minimize long-term negative effects on dolphin populations (Rudd et al., 2022b).

At this time there are no official dolphin watching tours operated in Montenegro, except few boats advertising wildlife tourism. The Local Hub organized as part of the activity 2.1 has confirmed that the tour operators don't want to offer it as they are concerned that there aren't enough sightings to satisfy the tourist. However, MDR - Montenegro Dolphin Research offers "scientists for a day tours" with a set of wildlife watch guidelines. These guidelines include keeping appropriate distance, no chasing or blocking the animals and not touching the animals. These guidelines are being promoted through their Wave Watch Montenegro initiative. Wave Watch Montenegro was set up to promote citizen

science and the network contains over 100 members, including tour operators and local fishing men.

Albania

There are no regulations on dolphin watching activities as touristic attraction in Albania. There is a National Strategy on the Development of Tourism 2025-2030 and Action Plan in Albania. The action plan foresees preparation of regulations of touristic activities within the protected areas during the 5 coming years.

Greece

Currently there is no specific licensing scheme for dolphin watching tour operators in Greece. There are however, general wildlife protection laws (EU Habitats Directive, the Barcelona Convention, ACCOBAMS), that legally prohibit harassment or disturbance of dolphins, which extends to dolphin watching activities. Some marine protected area management plans and NGOs include restrictions/recommendations on vessel activity and wildlife disturbance: the Ionian Dolphin Project recommends not approaching dolphins or whales closer than 100m (30m for seals) with a caution zone of 300m, move cautiously with the animals, put the engine in neutral, do not touch, swim or feed the animals.

OTHER EXAMPLES OF EXISTING GOOD PRACTICES

Italy

In Italy, there are good practices, developed by ISPRA, to adopt in the event of a Monk Seal sighting (buone-pratiche-ispra-m-monachus.pdf). In case of encounter of this species, it is necessary to immediately minimize any potential disturbance and notify the Port Authority (number 1530), continuing to observe the animal, recording as much information as possible (e.g., fur color, size). If the sighting involves an individual on a beach or a rock, it is essential to maintain a safe distance (at least 50 meters), remain silent, and avoid interaction with the animal (e.g., direct contact). If the sighting occurs at sea, it is necessary to immediately turn off the engines and remain silent. If the sighting occurs while swimming or diving, it is necessary to move away slowly to avoid disturbing the animals.

Croatia

Although there are no specific regulation nor certification for dolphin watching operations, in order to set up standards, Blue World Institute (BWI) has founded company (Blue World ltd.) that provides sustainable dolphin watching tours. On these tours great attention is posed on education of participants and trained experienced skippers who are following strict Code of conduct set up by scientists in line with the ACCOBAMS Resolution 4.7. After several years of this practice, the other local boat operators who offer dolphin watching tours to tourists have shown great interest in education and possible unofficial certification. Occasionally, BWI voluntarily provides training for those interested.

Additionally, thanks to a good cooperation with MPA managing institutions in Croatia (NP Brijuni, NP Kornati, PP Kamenjak), BWI has organized such trainings for dolphin watching operators in their respective areas as the activity of LIFE Delphi project.

Similarly, within the implementation of Net-Cet, LIFE Euroturtles and LIFE Delphi projects on several occasions trainings were organized for fishermen on handling sea-turtles in case of bycatch.

Another good practice in Croatia is strong effort of several NGOs related to rising awareness on the importance of marine environment conservation, resulting with numerous education campaigns related to the sentinel species, including the citizen science initiatives such as Marine Ranger App, e-Turtle App and similar.

Slovenia

In addition to existing regulations, a number of good practices are implemented in Slovenia to support marine mammal and sea turtle conservation.

One example is the cooperation between Morigenos and local tourism providers. As part of this collaboration, Morigenos joins a panoramic boat tour once per week during the tourist season to provide educational activities for visitors. Tourists are introduced to the presence of dolphins in the Slovenian sea, their basic biology, the research methods used to study them, and the main threats they face. This approach offers a more sustainable alternative to dolphin-watching tourism, combining recreational activities with awareness-raising and conservation education.

A notable good practice in Slovenia is the establishment of strong, trust-based relationships between research/conservation organizations and local stakeholders. Morigenos has successfully cultivated mutual trust with local fishermen, which has encouraged several of them to report cases of dolphin bycatch directly to the organization. This proactive collaboration enhances data collection on bycatch incidents and supports more effective conservation measures while fostering cooperation between the fishing community and marine mammal researchers.

One of the key examples of good practice in Slovenia is the establishment and management of marine protected areas (MPAs). The most prominent is the Landscape Park Strunjan, which covers 176.5 hectares of marine protected area, representing 41.2% of the Park's total area, and is managed by *Javni zavod Krajinski park Strunjan*. The common bottlenose dolphin (*Tursiops truncatus*) is regularly present in the area, and its management plan for the period 2018–2027 specifically includes regular visual and acoustic monitoring of the species, carried out by Morigenos. Loggerhead sea turtles (*Caretta caretta*) are also frequently present in the Park. To address the conservation needs of this species, the management plan includes a research program dedicated to estimating loggerhead turtle bycatch in Slovenian territorial waters. Another important protected area is the Landscape Park Debeli Rtič, which includes 1.35 km² of marine protected area. It is managed by *Javni zavod za naravo in družbo Ankaran*. While a formal management plan is still in preparation, the Park represents a significant step toward strengthening the protection of Slovenia's coastal and marine biodiversity. In addition, the Natural Monument Rt Madona v Piranu offers a small-scale form of marine protection, covering only 0.12 km². Due to its size and the absence of a management plan, its contribution is limited compared to the larger protected areas; however, it remains an important site in terms of habitat preservation and local biodiversity.

Bosnia and Herzegovina

In Bosnia and Herzegovina, several examples of good practices related to the protection of marine and coastal ecosystems and sentinel species have been identified, particularly in the Neum area. Local diving clubs regularly organize seabed clean-up activities, often collaborating with clubs from neighboring countries, which help reduce marine litter, even if the results are short-term. Educational workshops and awareness campaigns for

children and adults, often linked to traditional events such as the squid-fishing festival, promote knowledge of sustainable fishing practices and marine biodiversity.

Scientific research, such as monitoring bioaccumulated harmful substances in marine species like sharks and rays, contributes to understanding ecological pressures and informing conservation strategies. Efforts to protect specific habitats, including the Klek peninsula—the only Mediterranean habitat in Bosnia and Herzegovina—demonstrate targeted conservation actions. Regional and international initiatives, such as the BlueQ Interreg IPA Adrion project and the Aquatic Plastic project in the Danube region, provide examples of knowledge sharing, mapping of critical habitats, and raising public awareness through competitive clean-up actions. These initiatives collectively illustrate the country's commitment to promoting sustainable coexistence between human activities and sentinel species, despite limited formal regulations.

Montenegro

Montenegro's network of initiatives aimed at protecting sentinel species has been on a rise. In recent years, several programs have begun to bridge research, policy, and community awareness, creating a meaningful shift in national marine conservation.

A first example is our MDR organization, particularly its long-term monitoring program of marine mammals. Through systematic surveys, photo-identification, and spatial mapping, MDR collects essential data on bottlenose and striped dolphins along the Montenegrin coast. Our work helps identify key habitats, track population dynamics, and measure the impacts of human activity (e.g. vessel traffic and fishing).

Efforts for the protection of sea turtles have also expanded. The Institute for Marine Biology in Kotor operates *Aquarium Boka*, which includes a small rescue and rehabilitation unit for injured marine wildlife. In 2023, a confirmed loggerhead sea turtle nest was recorded on Velika Plaža near Ulcinj—a wonderful event that signals the country's ecological improvement.

Accidental capture and release events further illustrate the rising awareness among local fishermen and coastal communities. One such case near Bar involved a protected green turtle, safely released after becoming caught in a gillnet and reported to the Institute for Marine Biology. Small moments like these show that cooperation does not always come through formal mechanisms, instead local communities and science can work hand in hand to protect the vulnerable species.

In 2025, MDR and the Tourist Organization of Kotor launched a joint WhatsApp group called "Wave Watch Montenegro", originally initiated in 2022. The group, which now counts around one hundred members, is made up mostly of local residents and sea users who regularly share dolphin and turtle sightings, movement patterns, and occasional reports of strandings or carcasses. The goal is that this digital network, over time,

becomes an important bridge between science and community—creating real-time connections that help monitor the Adriatic and deepen public awareness of its marine life.

On a broader level, Montenegro established its first three MPAs—Platamuni, Katič, and Stari Ulcinj—in 2021, covering roughly 4,700 hectares (SPA/RAC, 2022). Overall, these developments point toward a more integrated approach, where data, education, and protection unite to safeguard the most sensitive species of the Adriatic Sea.

Albania

Effective cooperation of NGO, University or different project experts with local institutions related to the sentinel species monitoring and reporting, capacity building campaigns for institutions and local community (e.g. PPNEA, MEDASSET/Tirana University) are good practices that should not be limited to a project timeline only.

Greece

There are few examples of existing good practices in Greece. One of them is positive interaction and co-existence between fish farms/aquaculture and dolphins, such as a case study in Leros island.

Also, there is a financial compensation by Ministry of Agriculture to artisanal fisheries to minimize conflicts and economic loss due to depredation.

Moreover, there are citizen science initiatives, such as Eco-navigation platform of Archipelagos Institute that enable citizens to contribute to monitoring efforts.

CAPITALIZATION OF KNOWLEDGE FROM PREVIOUS AND ONGOING PROJECTS

Italy

In Italy, several good practices have been implemented to reduce anthropogenic impacts on marine biodiversity and promote the protection of sentinel species.

- **TartaLIFE Project (LIFE NAT/IT/000937)** TartaLife | Pesca TartaFree - Riduzione della mortalità della tartaruga marina nelle attività di pesca professionale **-** National project, coordinated by ISPRA aiming to reduce sea turtles' mortality due to fishing. Among the good practices: turtle-friendly fishing gear (Turtles Excluder Devices and circle hooks), training programs for fisherman (raising awareness and improving safe handling and release techniques), creation of national stranding network and development of educational materials.
- **LIFE DELFI (LIFE18 NAT/IT/000942)** CNR life delfi – ridurre le interazioni dei cetacei con le attività di pesca - the aim is to mitigate the conflict between dolphins and small-scale fisheries. Among the good practices: testing acoustic deterrent to prevent depredation and reduce bycatch, involving fisherman in the development of the mitigation measures, and promoting a sustainable fishing behavior.
- **MedBycatch Project (FAO/GFCM)** Medbycatch project | General Fisheries Commission for the Mediterranean - GFCM | Food and Agriculture Organization of the United Nations -The aim is at monitor and reduce the incidental catch of vulnerable species. Among the good practices: standardized the data collection protocols for bycatch, capacity building for fisherman, promotion of bycatch mitigation techniques and safer handling of caught animals.
- **LIFE Conceptu Maris (LIFE20 NAT/IT/001371)** In difesa dei giganti del Mediterraneo - Life Conceptu Maris - The aim is to propose effective solutions to improve the conservation status of Mediterranean cetaceans and sea turtles. Good practices: training course on biodiversity conservation and the risk of collisions (by CIMA Foundation) between large ships, cetaceans, and turtles.
- **LIFE+ ARION (LIFE09 NAT/IT/000190)** LIFE 3.0 - LIFE09 NAT/IT/000190 - The aim was to prevent collisions between common bottlenose dolphins and vessels in the Portofino area using a real-time acoustic monitoring system (Brunoldi et al., 2016). Among the good practices: advice for improving MPA regulations, development of a passive listening system (hydrophone array) to alert vessels to the presence of cetaceans, and the promotion of more careful navigation.
- **LIFE Euroturtles (LIFE 15 NAT/HR /000997)** Home - EuroTurtles - The aim was to improve the conservation status of *Caretta caretta* and *Chelonia mydas* reducing the impact of anthropogenic threats on nesting sites, and threats related to fishing. Good practices: development of new tools for conservation activities, such as drones for nest monitoring (from land and sea) and for assessing sea turtle behavior along beaches and in the open sea. The project developed a tracking system, applied directly to the animals' carapace, to collect the animal's GPS

location every time it surfaces and transmit the data to smartphone. A citizen science mobile app, *eTurtle*, was also created to engage the public in the conservation of these species. Furthermore, to reduce bycatch, the use of special LED lights to illuminate gillnets has been reported. Fishermen have been informed on board how to reduce the mortality of accidentally caught turtles: by keeping them on board until they recover (in the case of trawls or gillnets) or by cutting the line very close to the mouth (in the case of longlines).

- **LIFE SEA.NET (LIFE20 GIE/IT/000763)** Life SEA.NET – Fare rete protegge il mare - The aim is to improve the management of marine sites in the Natura 2000 network, increasing the knowledge and highlighting the importance of these sites for the conservation of biodiversity. Good practices include: standardization of protocols for monitoring marine species and habitats of Community interest (e.g., from GIREPAM and ECOSS Projects) for site-specific conservation to be applied to the Natura 2000 network, standardization and archiving of information using the Access database, communication to stakeholders about the constraints, benefits, and prospects of sites under environmental protection; and definition of conservation measures for marine sites.
- **FIshing and Marine Animal Protection (FI.M.A.P.) Calabria (PO FEAMP Misura 1.40, 17/RBC/20)** - The aim was to understand better the impacts of the interactions between artisanal fishing activities and protected species (cetaceans, sea turtles and sharks); during the project, a handbook about management of accidental captured specimen was created, based on existing best practices; moreover, fishermen were involved directly in the record of sightings and bycatch events: it was asked to them to make videos of their board monitor (to collect GPS coordinates and other environmental data) and to the animals spotted or accidentally captured. With this easy and fast method, the data were collected by fishermen and could be verified and certified by the technicians.

Croatia

Within the Croatian Adriatic there are several examples of previous and ongoing projects that are contributing to the better coexistence practices among humans and sentinel species:

- **Adriatic Dolphin Project** ongoing in northern Adriatic area since 1987, longest continuously ongoing study of the single population of bottlenose dolphins in Mediterranean, conducted by the Blue World Institute. Over time, the research area expanded to northern Dalmatia since 2013, in the Istrian waters since 2014, and in cooperation with Blue World Vis in the waters of the island of Vis since 2007. Research activities include boat-based surveys for collection of data for photo-identification, behaviour and interactions, aerial surveys, acoustic monitoring, satellite tagging of sea turtles, biopsy and collection of samples from stranded cetaceans and sea turtles. From these, population dynamics, social and genetic

structure, spatial ecology, and habitat use are analysed. https://www.blue-world.org/what-we-do/our-projects/dolphin-conservation-adriatic-dolphin-project-insights/

- Since 2010: **Monitoring of the Status of Marine Mammals in the Waters of Šibenik-Knin County**, funded by the Public Institution for the Management of Protected Areas and Other Protected Natural Assets of Šibenik-Knin County – Priroda
- Since 2000: International cooperation between the Faculty of Veterinary Medicine, University of Zagreb, and the Gesellschaft zur Rettung der Delphine (Society for the Rescue of Dolphins), Germany, under the title "**Save the Last Adriatic Dolphins"**, links: chrome extension://efaidnbmnnnibpcajpcglclefindmkaj/https://wwwi.vef.hr/dolphins/novinski_clanci/pdf%202015/Delphinpost%203.2014.pdf, https://www.delphinschutz.org/projekte/kroatien/
- **LIFE Euroturtles (LIFE 15 NAT/HR /000997)** - The aim was to improve the conservation status of *Caretta caretta* and *Chelonia mydas* reducing the impact of anthropogenic threats on nesting sites, and threats related to fishing. Good practices: development of new tools for conservation activities, such as drones for nest monitoring (from land and sea) and for assessing sea turtle behavior along beaches and in the open sea. The project developed a tracking system, applied directly to the animals' carapace, to collect the animal's GPS location every time it surfaces and transmit the data to smartphone. A citizen science mobile app, *eTurtle*, was also created to engage the public in the conservation of these species. Furthermore, to reduce bycatch, the use of special LED lights to illuminate gillnets has been reported. Fishermen have been informed on board how to reduce the mortality of accidentally caught turtles: by keeping them on board until they recover (in the case of trawls or gillnets) or by cutting the line very close to the mouth (in the case of longlines). Home - EuroTurtles
- **LIFE DELFI (LIFE18 NAT/IT/000942)** - the aim was to mitigate the conflict between dolphins and small-scale fisheries. Among the good practices: testing acoustic deterrent to prevent depredation and reduce bycatch, involving fisherman in the development of the mitigation measures, and promoting a sustainable fishing behavior. https://lifedelfi.eu/project/?lang=en
- **NetCet - Network for the Conservation of Cetaceans and Sea Turtles in the Adriatic sea** (IPA CBC 2012 -2015) – the main objective of the project was to develop common strategies for the conservation of cetaceans and sea turtles through a pan Adriatic cooperation. https://www.blue-world.org/what-we-do/our-projects/netcet/
- **Aquatic Life Lab - ALL (Erasmus + 2017-1-IT02-KA201-036817)** – the aim of this project was education of high school students from Italy, Croatia and Cyprus on marine environmental issue with special focus on sentinel species https://www.feem.it/en/ricerca/progetti/aquatic-life-lab-all/

- **Soundscape - Soundscapes in the North Adriatic Sea and their impact on Marine Biological Resources (Project ID 10043643)** co-funded by the European Union CBC Programme – Interreg Italy-Croatia (2019-2021) This project was set up with the intention to conduct monitoring underwater noise in relation to marine traffic intensity and species distribution in the northern Adriatic Sea, as well as raising public awareness on underwater noise pollution. https://www.blue-world.org/soundscape-soundscapes-in-the-north-adriatic-sea-and-their-impact-on-marine-biological-resources/
- **UNDERSEA - UNDerwatER Soundscape beyond Aisproject (ITHR0200399)** co-funded by the European Union CBC Programme – Interreg Italy-Croatia (2024-2026) aims to build on knowledge of underwater noise pollution created in the Adriatic Sea and therefore set up cross border effective conservation methods for protection of marine fauna. UNDERSEA was build on the data collected in the SOUNDSCAPE project (2019-2021) by covering the entirety of the Adriatic Sea including a new MPA and Natura 2000 sites while also analysing anthropogenic noise during different seasons and periods of boat traffic. UNDERSEA aims to build international cooperation for conservation and mitigation efforts for maritime traffic in the Adriatic Sea, therefore protecting marine ecosystems in the future. https://www.blue-world.org/what-we-do/our-projects/undersea-underwater-soundscape-beyond-ais/
- **ECOSS – Ecological Observing System in the Adriatic Sea: oceanographic observations for biodiversity;** (Project ID: 10042301) co-funded by the European Union CBC Programme – Interreg Italy-Croatia (2019-2021). The agenda of this project was integrating results of existing oceanographic and ecological research and monitoring programs so that conservation measures can be planned holistically. To reach this goal, primary aim of ECOSS project was development of an integrated ecological observatory: ECOAdS – Ecological observing system in the Adriatic Sea. https://www.italy-croatia.eu/web/ecoss
- **Hadriaticum DATA HUB - HATCH (Project ID 10418461)** co-funded by the European Union CBC Programme – Interreg Italy-Croatia (2022-2023) The main goal of the HATCH project was to capitalize on the results of the previously conducted projects of the Interreg Italy-Croatia CBC Programme: ECOMAP, ECOSS, SASPAS, AdSWiM, WATERCARE, CREW, SOUNDSCAPE. The cooperation of six project partners and five external expert organizations from Italy and Croatia produced HATCH Data Hub, a geo-platform that unifies results from various research and monitoring programs and adapts them for implementation in Maritime Spatial Planning (MSP). https://programming14-20.italy-croatia.eu/web/hatch
- **Adriatic Plus - Sharing Marine and Coastal cross management experiences in the Adriatic basin (1°TCE/0002)** The project was implemented in 2016, funded under the IPA Adriatic CBC Programme 2007-2013 – Targeted call on EUSAIR,

Priority 2 – Natural and Cultural Resources and Risk Prevention, Measure 2.1 – Protection and enhancement of the marine and coastal environment. The main aim of the project was to strengthen institutional capacity for cooperation on the conservation and management of territorial resources to mitigate risk and prevent accidents to the marine environment. https://www.blue-world.org/what-we-do/our-projects/adriatic-sea-conservation-strengthening-capacity/

- **Improvement of the Wildlife Rescue Centre at the Faculty of Veterinary Medicine – WildRescueVEF,** (2021–2023); funded by the European Regional Development Fund under the Operational Programme "Competitiveness and Cohesion 2014–2020", website: https://wildrescuevef.org/
- **Blue Project – Contribution to the Development of Service-Learning Programmes at the Faculty of Veterinary Medicine (UP.04.2.1.02.0164)**, a project of the European Social Fund approved under the Operational Programme "Efficient Human Resources 2014–2020" implemented in 2018–2019.
- Training of the Professional Service and Nature Wardens of the Public Institution "Priroda" of Šibenik-Knin County for Monitoring of Target Species in Natura 2000 Areas conducted in 2017
- Scientific-Research Project of the Ministry of Science, Education and Sports of the Republic of Croatia: **"Health and Biological Characteristics of Marine Mammal Populations in the Adriatic" (053-0533406-3640)** implemented in 2000–2013.

Slovenia

Main projects that promote and represent good coexistence practices among humans and sentinel species in Slovenian waters:

- **Monitoring of dolphins in Slovenian waters for the period 2025–2026,** funded by the European Maritime and Fisheries Fund. The aim of this project is estimation of the abundance, distribution and conservation status of common bottlenose dolphins in Slovenian waters; Boat surveys and photo-identification of common bottlenose dolphins; Mark-recapture abundance estimates based on photo-identification data. Commissioned by the Ministry of Agriculture, Forestry and Food of the Republic of Slovenia.
- **Investigating the Sea: Stimulating better protection and management of the Upper Adriatic Sea through biodiversity monitoring based on environmental DNA (eDNA), with the involvement of the public,** funded by Interreg Italia-Slovenia Programme in 2024-2026; The SeaInsights project aims to strengthen cross-border collaboration for the conservation and monitoring of marine biodiversity in the North Adriatic by developing innovative tools, harmonizing monitoring approaches, and engaging stakeholders in sustainable management practices. https://www.ita-slo.eu/en/seainsights

- **Educational and Research Dolphin Centre, Piran** funded by Ministry of Cohesion and Regional Development of the Republic of Slovenia and the European Union through the European Regional Development Fund in 2021-2023; The project established an educational and research centre dedicated to the sea and dolphins. The centre became a hub connecting researchers, the general public, and other stakeholders around a shared vision of nature conservation and biodiversity preservation. It strengthened sustainable coexistence between people and marine animals and provided a platform for collaboration with scientists, experts, and decision-makers in the protection of the marine environment. https://www.morigenos.org/en/the-dolphin-centre-project/
- **Monitoring of dolphins in Slovenian waters for the period 2021–2022,** funded by the European Maritime and Fisheries Fund; Commissioned by the Ministry of Agriculture, Forestry and Food of the Republic of Slovenia with the aim to estimate the abundance, distribution and conservation status of common bottlenose dolphins in Slovenian waters, boat surveys and photo-identification of common bottlenose dolphins, Mark-recapture abundance estimates based on photo-identification data. https://www.ribiski-sklad.si/f/docs/Dokumenti/Monitoring_delfinov_za_obdobje_2021-2022-_koncno_porocilo-MAJ_2023.pdf
- **Pilot monitoring for the assessment of impacts of underwater noise from maritime traffic on marine mammals in Slovenia,** funded by the Institute for Water of the Republic of Slovenia, as part of EU Marine Strategy Framework Directive implementation in 2020-202; The aims of the project were: monitoring underwater noise via acoustic loggers, acoustic monitoring of common bottlenose dolphins via acoustic loggers, visual monitoring of vessel traffic and visual monitoring of common bottlenose dolphins.
- **Ecological monitoring of mobile species in Landscape park Strunjan,** carried out in the framework of Interreg project MPA Networks in 2020-2021. Main project activities were visual monitoring of mobile species (marine mammals, sea turtles and sea birds), acoustic monitoring of common bottlenose dolphins via acoustic loggers, visual monitoring of vessel traffic and infractions of MPA provisions.
- **Preparation of guidelines for monitoring and management of mobile species in Landscape park Strunjan,** carried out in the framework of Interreg project MPA Networks in 2020-2021; Development of long-term guidelines and strategies for monitoring and management of mobile species (marine mammals, sea turtles and sea birds) in the marine protected area of the Landscape park Strunjan
- **Assessment of bycatch of marine mammals in fishing gear in Slovenia and proposal for future monitoring of bycatch and marine litter impacts,** commissioned by the Institute for Water of the Republic of Slovenia, as part of EU Marine Strategy Framework Directive implementation in 2020; The main result of the project was assessment of bycatch of marine mammals in fishing gear with

the proposal for future monitoring of marine mammal bycatch and marine litter impacts.

- The above mentioned **LIFE Euroturtles (LIFE 15 NAT/HR /000997)** - **Collective actions for improving the conservation status of the sea turtle populations** was also implemented in Slovenia in period from 2016-202; the project focus was on areas that are pivotal for the conservation of the two sea turtle species occurring in the EU, the loggerhead turtle (*Caretta caretta*) and the green turtle (*Chelonia mydas*). The aim of the LIFE EUROTURTLES project is to improve the conservation status of the EU populations of two priority sea turtle species, the loggerhead turtle and the green turtle. https://www.euroturtles.eu/
- **Incorporating marine mammals into MPA management to improve overall marine conservation,** funded by UNEP/MAP SPA-RAC in 2019; The aim of this project was to improve monitoring of relevant protected species (marine mammals, sea turtles and sea birds) within a local marine protected area (MPA), increasing awareness of MPA visitors and the local community, highlighting marine mammals as part of the local biodiversity, and providing added value to the local MPA by including marine mammals in education programmes.

  Monitoring of dolphins in Slovenian waters for the reporting period 2013-2018, funded by the European Maritime and Fisheries Fund in 2018-2019; Commissioned by the Ministry of Agriculture, Forestry and Food of the Republic of Slovenia. The aim of this project was to estimate the abundance, distribution and conservation status of common bottlenose dolphins in Slovenian waters; Boat surveys and photo-identification of common bottlenose dolphins Mark-recapture abundance estimates based on photo-identification data.Distance sampling abundance estimates based on line-transect aerial surveys through participation in the ACCOBAMS Survey Initiative. https://www.ribiski-sklad.si/f/docs/Dokumenti/Monitoring_delfinov_za_porocevalsko_obdobje_2013-2018.pdf

Bosnia and Herzegovina

There are several food examples of previous and ongoing projects that are contributing to the better status of the marine environment:

- **Conservation of Marine and Coastal Biodiversity in the Adriatic Sea by 2030 and Beyond,** Main objective of this project is to develope a strategic action programme for the conservation of biodiversity and sustainable management of natural resources in the Adriatic region, with a focus on marine and coastal ecosystems. https://spa-rac.org/en/publication/download/1532/conservation-of-mediterranean-marine-and-coastal-biodiversity-by-2030-and-beyond

- **ACT4LITTER - Joint measures to preserve natural ecosystems from marine litter in the Mediterranean Protected Areas.** The aim of this project was to develop MPA-specific action plans and a transnational governance framework to prevent and manage marine litter in Mediterranean Marine Protected Areas, engaging stakeholders and experts while promoting circular economy and sustainable practices to safeguard biodiversity and ecosystem services. https://act4litter.interreg-med.eu/
- **BLUEQ Project - Applied Solutions for Monitoring Coastal Habitats and Quantifying Blue Carbon Storage;** The objective of this project is addressing critical conservation and management needs of Posidonia oceanica meadows by developing tailored solutions for habitat mapping, carbon stock assessment, and a comprehensive Blue Carbon Strategy. https://blueq.interreg-ipa-adrion.eu
- **Aquatic Plastic Project,** funded by the Interreg project in Danube River Basin, including Bosnia and Herzegovina this project aims at combating riverine plastic pollution by mapping waste, using barriers and remote sensing technologies, and implementing innovative solutions for extraction and recycling. https://interreg-danube.eu
- **BLUECIRCLE Project - Boosting Circular Economy Solutions for Marine Litter Collection and Recycling in the Adriatic-Ionian Regions;** project implemented in the Adriatic-Ionian region, including Bosnia and Herzegovina; The project aims to tackle the issue of beached waste in an innovative way, turning a critical environmental challenge into an opportunity to promote a circular economy. Essentially, the initiative seeks to demonstrate the technical feasibility of a system that, thanks to a mobile plant, enables the collection and treatment of beached waste directly along the coasts of the Adriatic-Ionian area. https://bluecircle.interreg-ipa-adrion.eu/
- **MARROBO – Fostering the innovation capacities and skills for marine robotics deployment for monitoring and marine environment protection;** The project aims to deal with the problem of pollution in the Adriatic Sea, namely seawater and seabed with microplastics and metals, as well as noise, with a new innovative application of marine robotics in the monitoring and protection of the marine environment, and with newly developed methods and methodologies for detecting sea pollution. https://interreg-hr-ba-me.eu/project/project-library/marrobo/
- **ClimBeach - Improving Coastal Areas Resilience to Climate Change Impacts and setting up Guidelines for Sustainable Beach Stabilization and Management;** This project represents a comprehensive approach to solving problems of beach erosion and flooding caused by climate changes, with a special focus on innovative technical solutions and cross-border cooperation. https://interreg-hr-ba-me.eu/project/project-library/climbeach/

Montenegro

In Montenegro, several initiatives and projects have been implemented over the past decade that relate to the sustainable management of marine areas, protection of biodiversity, and the reconciliation of human activities such as tourism and fisheries with marine conservation goals. Although few projects have specifically targeted sentinel species and coexistence with tourism and maritime traffic, a number of relevant examples illustrate important steps toward integrated marine management.

For instance, Platamuni was declared the first marine protected area in Montenegro in April 2021, protecting habitats including Posidonia meadows and sea caves (Government of Montenegro, 2021)

Another relevant case is Katič, which along with Platamuni and Stari Ulcinj forms the early network of MPAs in Montenegro (Blue4all, n.d.).

The Fishery Activities Assessment in Montenegro (a case study by RAC/SPA) provides a spatial overview of fishing pressures across selected coastal zones and is often referenced in marine governance planning (RAC/SPA, 2015).

Finally, on the strategic and planning side, the document Montenegro – Conservation of Mediterranean Marine and Coastal Biodiversity by 2030 and Beyond outlines priorities, pressures, and response measures for marine biodiversity in the country (UNEP/MAP, 2021).

Some of the relevant projects implemented in Montenegro are:

- **Interreg IPA/ADRION ENGAGE;** This project, implemented in Italy, Montenegro and Albania is in its finishing stage and it was hosting workshops on how to protect the same sentinel species, by using MPA's, tagging and/or other methods https://www.interreg-ipa-adrion.eu/
- **Interreg IPA/Adrion ASAP**; This project, implemented in Montenegro, Italy, Slovenia, Albania, Croatia and Bosnia Herzegovina is currently working on the best practices on what to do when a ship experiences an oil spill in the Adriatic and training people on what to do, while keeping in mind the sentinel species. https://www.interreg-ipa-adrion.eu/
- **Interreg NETCET:** (2012-2015) The main objective of the project was to develop conservation strategies in the Adriatic Sea for cetaceans and sea turtles in Montenegro, Italy, Slovenia, Croatia and Albania https://keep.eu/projects/4871/Network-for-the-Conservation-EN/#:~:text=The%20main%20objective%20of%20the,C&ST%20biology%2C%20behaviour%20and%20status/

Albania

"Albania Conservation of Mediterranean Marine and Coastal Biodiversity by 2030 and beyond" prepared by Specially Protected Areas Regional Activity Centre (SPA/RAC) and United Nations Environment Programme/Mediterranean Action Plan (UNEP/MAP) has been a very good initiative providing a comprehensive analysis of main components of marine and coastal environment conservation in Albania. The report identifies the main issues impacting the marine ecosystem protection and preservation in Albania.

- **MEDASSET (Mediterranean Association to Save the Sea Turtles)** has been working for a long time in Albania through projects on monitoring and protection of sea turtles. The organisation has been a partner to the United Nations Environment Programme Mediterranean Action Plan (UNEP/MAP) and a Permanent Observer-Member to the Bern Convention, Council of Europe, since 1988. The following references are the technical reports of the initiatives carried out in Albania in cooperation with experts from Faculty of Natural Sciences/Research Centre of Flora and Fauna, Tirana University, Albania:

- MEDASSET (2012) Action Plan for the Conservation of Sea Turtles and their Habitats in Albania. White M, Boura L, Grimanis K, Venizelos L. Athens, Greece. 38pp.
- Sacdanaku E., V. Rae; (2023); Drone surveying of Gjiri i Drinit & Patok Lagoon for Sea Turtles Presence and Distribution (2020-2022): Technical Report. A report by the Mediterrean Association to Save the Sea Turtles (MEDASSET). 32 PP. https://issuu.com/medasset/docs/drini_bay_monitoring_technical_report_medasset_fin

- **PPNEA – Protection and Preservation of Natural Environment in Albania** is leader organisation in Albania focused on nature conservation for over 34 years. PPNEA has been implementing the Mediterranean monk seal project in the south of Albania. PPNEA has carried out the monitoring of the monk seal and its habitat. PPNEA staff has been supported by the local, educated network and international experts. They have been working on the identification of the status of the mediterranean monk seal population and its habitats and mapping of suitable habitats for pupping and resting. As a result of this cooperation PhD thesis on sea turtles in Albania was written at the Agricultural University of Tirana, Albania: Piroli V.; (2021); Disertacion; Studim Taksonomik dhe Ekologjik i Breshkave Detare (Rendi Testudines) në Shqipëri.
https://api.fshn.edu.al/uploads/Vilma_Piroli_Doktorature_Biologji_f754e2627b.pdf
- **GIZ** initiative on the marine pollution prevention, through the project **Integrated Waste Management and Marine Waste Prevention in Western Balkan**. The initiative aimed to carry out education sessions for the schools on the marine pollution prevention.

- **Albania and Marine Protected Areas/ Legal and Institutional framework assessment for conservation of coastal and marine biodiversity and the establishment of MPAs**; 2014 (Albania and Marine Protected Areas: Legal and Institutional framework assessment for conservation of coastal and marine biodiversity and the establishment of MPAs. RAC/SPA and IUCN-Med. Ed. RAC/SPA - **MedMPAnet** Project, Tunis. 48pp.).

Greece

- **Marine Mammal Research Monitoring** has been an ongoing project since 2000. This project allows for data collection on the sentinel species of the project in the eastern Aegean Sea. Data on the species includes, distribution, photo identification, behaviour and acoustics. However, other data on anthropogenic threats is also collected including marine traffic, fishing activities and marine litter. This also considers potential changes in seasonality. https://archipelago.gr/fields-of-action/marine-mammal/
- **Local Ecological Knowledge Network** with fishermen communities and local communities in the islands of Samos, Fourni, Ikaria and Lipsi. This project has been ongoing since 2000. https://archipelago.gr/coastal-fishers-our-strongest-allies-in-protecting-the-marine-environment/
- **Monitoring of a bottlenose dolphin subgroup interacting with a fish aquaculture unit in Leros Island, Greece**. This project has been ongoing since 2020. Data collected includes distribution, photo identification, behaviour and acoustics.

CONCLUSIONS

This document highlights current practices, strengths, and gaps related to the long-term coexistence of human activities with sentinel species. Although several promising initiatives and regulatory frameworks are currently in place in the EUSAIR region, significant challenges remain in ensuring implementation, coordination, and systematic monitoring. Key recommendations include:

1. Implement regulations, as those present in the Pelagos Sanctuary, in other Mediterranean areas where the presence of sentinel species is well documented;
2. Develop national regulations for whale and dolphin watching, including licensing and training requirements;
3. Strengthen enforcement and data-sharing mechanisms;
4. Improve fishermen's engagement through capacity-building programs;
5. Engage maritime operators (both private and employed by maritime companies) in training courses on the application of the ACCOBAMS Code of Good Conduct, as well as emergency management in the event of collisions with sentinel species or sightings of injured individuals.

REFERENCES:

Abdulla, A. (2008). Maritime Traffic Effects on Biodiversity in the Mediterranean Sea: Review of Impacts, Priority Areas and Mitigation Measures. IUCN: Gland, Switzerland, Volume 1.

ADRINET. (2019). *Handbook on fisheries management in the Adriatic–Ionian Region*. Interreg IPA CBC Italy–Albania–Montenegro Project ADRINET. https://adrinet.italy-albania-montenegro.eu/sites/adrinet.italy-albania-montenegro.eu/files/2021-09/Handbook_English.pdf

Affatati A., Camerlenghi A., 2023. Effects of marine seismic surveys on free ranging fauna: a systematic literature review. Front. Mar. Sci., Sec. Marine Conservation and Sustainability, 10. https://doi.org/10.3389/fmars.2023.1222523

Agardy, T., Cody, M., Hastings, S., Hoyt, E., Nelson, A., Tetley, M., & Notarbartolo di Sciara, G. (2019). Looking beyond the horizon: an early warning system to keep marine mammal information relevant for conservation. *Aquatic conservation: marine and freshwater ecosystems*, *29*, 71-83.

Akkaya, Aylin, Natalia Velez, Kenn Papadopoulo, Noemi Ruegg, Cedric Goossens, Lucy Abbiss, and Tim Awbery (2021). "Bottlenose Dolphins of Montenegro: Abundance Estimation and Residency Patterns." In 2021 International Workshop on Metrology for the Sea; Learning to Measure Sea Health Parameters (MetroSea), 100–104. IEEE.

Albania and Marine Protected Areas: Legal and Institutional framework assessment for conservation of coastal and marine biodiversity and the establishment of MPAs. RAC/SPA and IUCN-Med. Ed. RAC/SPA - MedMPAnet Project, Tunis. 48pp.

Arcangeli, A., Maffucci, F., Atzori, F., Azzolin, M., Campana, I., Carosso, L., Crosti, R., Frau, F., David, L., Di-Meglio, N., Marine, R., Gregorietti, M., Mazzucato, V., Pellegrino, G., Giacoletti, A., Paraboschi, M., Zampollo, A., de Lucia, G., Hochscheid, S. (2019). Turtles on the trash track: loggerhead turtle exposed to floating plastic in the Mediterranean Sea. E*ndangered Species Research,* 40. 107-121. https://doi.org/10.3354/esr00980

Awbery, Tim, Natasa Nikpaljevic, Jack Clarkson, Lucy Abbiss, Dennis Van Der Pouw Kraan, Peggy Liebig, Sara Todorović, and Aylin Akkaya Baş. 2019. "Bottlenose and Striped Dolphins of Montenegro: An Insight into Sighting Variations, Behavioural Patterns, Photo-Identification, Core Habitats, Marine Traffic and Conservation Initiatives." Unpublished. https://doi.org/♂%252010.13140/RG.2.2.26977.35683/1.

Bearzi G, Politi E, di Sciara GN (1999). Diurnal behavior of free-ranging bottlenose dolphins in the Kvarnerić (northern Adriatic Sea). Marine Mammal Science 15 (4): 1065-1097.

Blue4all. (n.d.). Platamuni, Katic and Stari Ulcinj MPAs. https://blue4all.eu/example-case-study?utm_source=chatgpt.com

Blue World Institute (2025). Adriatic Dolphin Project - Annual Report 2024. Blue World Institute, Veli Lošinj, Croatia

Bogdanović, Miloš, and Špiro Ivošević. 2024. "Winds of Change: A Study on the Resource Viability of Offshore Wind Energy in Montenegro." Energies, April. https://doi.org/10.3390/en17081852.

Bogdanović, M., and Š. Ivošević. 2025. "Offshore Wind Energy Potential: Assessing Capacity Factor and Electricity Generation in Montenegro." Pomorstvo. https://hrcak.srce.hr/330918.

Bonizzoni, S., Furey, N. B., Bearzi, G. (2021). Bottlenose dolphins (*Tursiops truncatus*) in the northwestern Adriatic Sea: Spatial distribution and effects of trawling. *Aquatic Conservation: Marine and Freshwater Ecosystems*, 31(3), 635-650.

Bray, L., Reizopoulou, S., Voukouvalas, E., Soukissian, T., Alomar, C., Vázquez-Luis, M., Deudero, S., Attrill, M. J., & Hall-Spencer, J. M. (2016). Expected Effects of Offshore Wind Farms on Mediterranean Marine Life. *Journal of Marine Science and Engineering*, *4*(1), 18. https://doi.org/10.3390/jmse4010018

Brotons, J. M., Grau, A. M., & Rendell, L. (2007). Estimating the impact of interactions between bottlenose dolphins and arti- sanal fisheries around the Balearic Islands. Marine Mammal Science, 24(1), 112–117. https://doi.org/10.1111/j.1748-7692.2007.00164.x

Brunoldi, M., Bozzini, G., Casale, A., Corvisiero, P., Grosso, D., Magnoli, N., Alessi, J., Bianchi, C. N., Mandich, A., Morri, C., Povero, P., Wurtz, M., Melchiorre, C., Viano, G., Cappanera, V., Fanciulli, G., Bei, M., Stasi, N., Taiuti, M. (2016). A Permanent Automated Real-Time Passive Acoustic Monitoring System for Bottlenose Dolphin Conservation in the Mediterranean Sea. *PLoS ONE,* 11(1): e0145362. https://doi:10.1371/journal.pone.0145362

Campana, I., Crosti, R., Angeletti, D., Carosso, L., David, L., Di-Méglio, N., Moulins, A., Rosso, M., Tepsich, P., Arcangeli, A. (2015). Cetacean response to summer maritime traffic in the Western Mediterranean Sea. *Marine Environmental Research*, Volume 109, pp 1-8, ISSN 0141-1136, https://doi.org/10.1016/j.marenvres.2015.05.009

Carlucci, R., Manea, E., Ricci, P., Cipriano, G., Fanizza, C., Maglietta, R., & Gissi, E. (2021). Managing multiple pressures for cetaceans' conservation with an Ecosystem-Based Marine Spatial Planning approach. *Journal of Environmental Management*, *287*, 112240

Casale, P. (2011). Sea turtle by-catch in the Mediterranean. *Fish and Fisheries*, *12*(3), 299-316. https://doi.org/10.1111/j.1467-2979.2010.00394.x

Casale, P., Broderick, A. C., Camiñas, J. A., Cardona, L., Carreras, C., Demetropoulos, A., Fuller, W. J., Godley, B. J., Hochscheid, S., Kaska, Y., Lazar, B., Margaritoulis, D., Panagopoulou, A., Rees, A. F., Tomás, J., Türkozan O. (2018). Mediterranean sea turtles: current knowledge and priorities for conservation and research. *Endangered Species Research,* 36:229-267. https://doi.org/10.3354/esr00901

Cheng, I.N.Y., Cheung, L.T.O., Chow, A.S.Y., Fok, L., Cheang, C.C., 2018. The roles

interpretative programmes in supporting the sustainable operation of the naturebased activities. Journal of Cleaner Production 200, 380–389. https://doi.org/10.1016/j.jclepro.2018.07.293

Clarkson, Jack, Lucy Abbiss, and Aylin Akkaya Bas. 2018. "Social Media for Social Species: A Case Study on the Behavioural Transitions of Bottlenose Dolphins (Tursiops Truncatus) in the Presence of Tourism, Montenegro, South Adriatic." In 2018 IEEE International Workshop on Metrology for the Sea; Learning to Measure Sea Health Parameters (MetroSea). IEEE. https://doi.org/☖%252010.1109/metrosea.2018.8657854.

Clarkson, J., F. Christiansen, T. Awbery, L. Abbiss, N. Nikpaljevic, and A. Akkaya. 2020. "Non-Targeted Tourism Affects the Behavioural Budgets of Bottlenose Dolphins Tursiops Truncatus in the South Adriatic (Montenegro)." Marine Ecology Progress Series 638 (March): 165–76. CrewCenter. (2025). Kotor Cruise Port Analysis and Market Share. https://crew-center.com/kotor-cruise-port-analysis-and-market-share

Constantine, R., Johnson, M., Riekkola, L., Jervis, S., Kozmian-Ledward, L., Dennis, T., ... & de Soto, N. A. (2015). Mitigation of vessel-strike mortality of endangered Bryde's whales in the Hauraki Gulf, New Zealand. *Biological Conservation*, *186*, 149-157.

Croatia Week, (4th of January 2024); Croatia's national map of maritime habitats launched; https://www.croatiaweek.com/croatias-national-map-of-maritime-habitats-launched

Çurri Anxhela, Kolitari Jerina, Haxhiu Idriz (2024); Reducing the impact of ghost gear on sea turtles, in Drini Bay: Results of Life-MedTurtles project; 4th International Conference on Agriculture and Life Sciences.

Çurri Anxhela, Kolitari Jerina; (2024); Combatting Sea Turtle Bycatch: Addressing Ghost Gear in Drini Bay; AdriBioPro2024: Adriatic Biodiversity Protection Conference 2024.

David, J. A. (2006). Likely sensitivity of bottlenose dolphins to pile-driving noise. *Water and Environment Journal,* 20, 48–54.

DCM no. 57/19 "on Criteria and methodology of Zoning of Environmental Protected Areas

DCM no. 256/19 "on laying down Detailed Rules for the Collection, Management and Use of Fishery Sector Data and the Support for the Scientific Advice for the Fishery National Strategy".

DCM no. 177/05 "on the allowed norms of the liquid discharges and the criteria of zoning of the receiving water environment".

DCM no.466, dated 31.7.2025 "on Approval of National Strategy on the Development of Tourism 2025-2030 and Action Plan in Albania"

Decree on the National List of Environmental Protection Indicators (Uredba o nacionalnoj listi indikatora zaštite životne sredine), Official Gazette of Montenegro, No. 19/2013

Deudero, S., & Alomar, C. (2015). Mediterranean marine biodiversity under threat: Reviewing influence of marine litter on species. *Marine Pollution Bulletin*, Volume 98, Issues 1–2, Pages 58-68, ISSN 0025-326X, https://doi.org/10.1016/j.marpolbul.2015.07.012 .

Deutsche Gesellschaft fur Internationale Zusammenarbeit (GIZ) GmbH (2021); "Prevent together the Marine Pollution"; published in the frame of the project "Integrated Waste Management and Marine Waste Prevention in Western Balkan".

Environmental Protection Agency of Montenegro. (2019). Research permit No. 02-UPI-1214/5: Observation of dolphins from the Montenegrin coast. Environmental Protection Agency of Montenegro. https://www.epa.org.me/images/dozvole2019/1214-5.pdf

Erbe, C., Marley, S. A., Schoeman, R. P., Smith, J. N., Trigg, L. E., Embling, C. B. (2019). The Effects of Ship Noise on Marine Mammals—A Review. *Frontiers in Marine Science,* 6:606. https://doi.org/10.3389/fmars.2019.00606

Eurofish International Organisation. (2024, April). *Fisheries and aquaculture in Montenegro.* https://eurofish.dk/fisheries-and-aquaculture-in-montenegro/

FAO (2022). The State of Mediterranean and Black Sea Fisheries 2022. General Fisheries Commission for the Mediterranean. Rome. https://doi.org/10.4060/cc3370en

Fortuna, C. M. (2006). Ecology and conservation of bottlenose dolphins (*Tursiops trunctus*) in the North-eastern Adriatic Sea (PhD thesis). University of St. Andrews, United Kingdom.

Furlan E., Torresan S., Critto A., Lovato T., Solidoro C., Lazzari P., Marcomini A. (2019). Cumulative Impact Index for the Adriatic Sea: Accounting for interactions among climate and anthropogenic pressures. Science of the Total Environment, 670, 379-397.

Garcia, S. M., Zerbi, A., Aliaume, C., Do Chi, T., Lasserre, G. (2003). The ecosystem approach to fisheries. Issues, terminology, principles, institutional foundations, implementation and outlook. *FAO Fisheries Technical Paper* No. 443. Rome, FAO. 71 pp.

Genov, T. 2020. Report on the entanglement of dolphins in fishing gear in Slovenian waters during 2002-2020 [in Slovene]. Report to the Institute for Water of the Republic of Slovenia. Morigenos – Slovenian Marine Mammal Society, Piran, Slovenia. 30 pp

Genov, T., Centrih, T., Kotnjek, P., Hace, A. 2019. Behavioural and temporal partitioning of dolphin social groups in the northern Adriatic Sea. *Marine biology* 166:11.

Genov, T., Kotnjek, P., Lesjak, J., Hace, A., Fortuna, C. M. 2008. Bottlenose dolphins (*Tursiops truncatus*) in Slovenian and adjacent waters (northern Adriatic Sea). *Annales, Series Historia Naturalis*, 18 (2), 227-244.

GFCM (2018). Data Collection Reference Framework (DCRF) version 19.1. General Fisheries Commission for the Mediterranean Secretariat.

GFCM/35/2011/4 on the incidental bycatch of sea turtles in fisheries in the GFCM area of application (https://faolex.fao.org/docs/pdf/mul201486.pdf)

GFCM/35/2011/5 on fisheries measures for the conservation of the Mediterranean monk seal in the GFCM area of application (https://openknowledge.fao.org/server/api/core/bitstreams/0d997dff-5790-4080-9ad1-755b4d5c663f/content)

GFCM/36/2012/2 *on mitigation of incidental catches of cetaceans in the GFCM area of application* (https://faolex.fao.org/docs/pdf/mul201488.pdf)

GFCM/37/2013/2 *on the establishment of a set of minimum standards for bottom-set gillnet fisheries for turbot and conservation of cetaceans in the Black Sea* (https://openknowledge.fao.org/server/api/core/bitstreams/96bfa019-b4f8-41bc-af89-ab141070aae6/content)

GFCM/43/2019/2 *enhancing the conservation of cetaceans in the GFCM area of application* (https://faolex.fao.org/docs/pdf/mul201668.pdf)

Government Gazette (D' 227/17.4.2025); National Spatial Strategy for the Marine Space (NSSMS), Greece

Government of Montenegro. (2021). Platamuni Nature Park Declared the First Protected Marine Area in Montenegro. https://www.gov.me/en/article/platamuni-nature-park-declared-the-first-protected-marine-area-in-montenegro

Government of Montenegro. (2025). Licenses and permits for tourism businesses. https://www.gov.me/en/article/licenses-and-permits-for-tourism-businesses

Güçlüsoy, H., Savas, Y., Kiraç, C. O. (2004). Status of the Mediterranean monk seal Monachus monachus in the coastal waters of Turkey. *Zoology in the Middle East*, 33(1), 5–16.

Gvozdenović, S., M. Đurović, and V. Iković. 2016. "Distribution Records of Sea Turtles in the Montenegrin Waters." Studia Marina 29 (1): 33–46.

Gvozdenović, Slađana, Mirko Đurović, and Zdravko Ikica. 2021. "Contribution to the Sea Turtle Findings in Montenegro (Southeast Adriatic Aea)." Zenodo. https://doi.org/10.5281/ZENODO.5090629.

Holcer D, Pleslić G, Radulović M, Miočić-Stošić J, Frleta-Valić M, Cukrov Car M, Vučur Blazinić T (2022). Završno izvješće o provedenim terenskim istraživanjima populacija odabrane vrste dobri dupin na prioritetnim područjima u 2021. i 2022. godini. Plavi svijet d.o.o., Veli Lošinj, Croatia.

Hydrographic Institute of the Republic of Croatia; (2025); GeoAdriatic – marine spatial data infrastructure supporting MSP in Croatia, https://www.hhi.hr/en/news/hydrographic-institute-of-the-republic-of-croatia-launches-new-geoportal-on-the-occasion-of-world-hydrography-day

IUCN (2008). Maritime traffic effects on biodiversity in the Mediterranean Sea. Volume 1 : review of impacts, priority areas and mitigation measures. Eds. Abdulla A., Lindén O. Malaga, ES : IUCN Centre for Mediterranean Cooperation, 2008. 182 pp.

IUCN (2009). Risks from maritime traffic to biodiversity in the Mediterranean Sea: Identification of issues and possible responses. Malaga, Spain: IUCN Centre for Mediterranean Cooperation.

Jaiteh, V. F., Allen, S. J., Meeuwig, J. J., & Loneragan, N. R. (2012). Subsurface behavior of bottlenose dolphins (Tursiops truncatus) interacting with fish trawl nets in northwestern Australia: Implications for bycatch mitigation. Marine Mammal Science, 29(3), 266–281. https://doi.org/10.1111/j.1748-7692.2012.00620.x

Jensen, F. H., Bejder, L., Wahlberg, M., Soto, N. A., Johnson, M., Madsen, P. T. (2009). Vessel noise effects on delphinid communication. *Marine Ecology Progress Series*, *395*, 161-175.

Joksimović, A., Pešić, A., Marković, M., Đurović, M., & Kovačević, S. (2023). The state of marine fisheries in Montenegro in the last 15 years. *Studia Marina, 16*(2), 35–46. https://studiamarina.ucg.ac.me/assets/pdf/volume-162-30.pdf

Karamanlidis, A.A., Androukaki, E., Adamantopoulou, S., Chatzispyrou, A., Johnson, W.M., Kotomatas, S., Papadopoulos, A., Paravas, V., Paximadis, G., Pires, R., Tounta, E., Dendrinos, P. (2008). Assessing accidental entanglement as a threat to the Mediterranean monk seal *Monachus monachus*. *Endangered Species Research*, 5:205-213 https://doi.org/10.3354/esr00092

Kotnjek, P., Hace, A., Centrih, T., Genov, T. 2013. Interactions between bottlenose dolphins (*Tursiops truncatus*) and trawlers in the northern Adriatic Sea. Proceedings of the 27th Annual Conference of the European Cetacean Society. European Cetacean Society, Setúbal, Portugal.

Kotnjek, P. 2016. Interactions between bottlenose dolphins (*Tursiops truncatus*) and fishing activities in the northern Adriatic Sea. Graduation thesis. University of Ljubljana, Ljubljana.

Krpan,M., Agencija za ugljikovodike RH, Ministarstvo prostornog uređenja, graditeljstva i državne imovine Republike Hrvatske (2024), Iskustva istraživanja i proizvodnje ugljikovodikai njihova primjenjivost na razvoj OIE u Jadranu; Konferencija o prostornom planiranju morskih područja, Dubrovnik, 2024

La Manna, G., Melis, G., Rako-Gospić, N., Basta, J., Mackelworth, P., Holcer, D., Atzeni, M., Leeb, K., (2020): Sustainable dolphin watching tours as a tool to increase public awareness of marine conservation – a comparative analysis between two Mediterranean destinations and implications for management, Journal of Ecotourism

Law no. 9587 dated 20.7.2006 “on biodiversity protection in Albania”, amended by no. 37/2013 dated 14.2.2013, no. 68/2014 dated 3.7.2014, no. 41/2020 dated 23.4.2020.

Law no. 10 006 dated 23.10.2008 “on protection of wild fauna in Albania”, amended by no. 10 137 dated 11.5.2009, no. 41/2013 dated 14.2.2013.

Law no. 15/8.02.2024 “on the Marine Protection Strategy in the Republic of Albania”.

Law no. 81/2017, “on Protected Areas in Albania”.

Law no. 8905/02, “on the Protection of Marine Environment from Pollution and Deterioration”, amended.

Law no.9251/2004 “on Marine Code in Albania”.

Law no. 64/12, “on Fishery in Albania”, amended.

Law no. 10448/11 “on Environmental Permits in Albania”, amended.

Law no. 9115/03 “on the Environmental Treatment of Polluted Waters in Albania”, amended.

Law no. 10463/11 “on Integrated Waste Management in Albania”, amended.

Law no. 10440/11, “on Environmental Impact Assessment in Albania”, amended.

Law no. 29/2024 “on Integrated Management of Water Resources in Albania”.

Law on Nature Protection (Zakon o zaštiti prirode), Official Gazette of Montenegro, No. 54/2016.

Law on Marine Environment Protection (Zakon o zaštiti morske sredine), adopted 23 December 2019, Official Gazette of Montenegro, No. 75/2019.

Lokar, K., Genov, T. 2024. Ingested marine litter and bycatch monitoring. Second ACCOBAMS Workshop on Ingested Marine Litter Monitoring & Entanglement Evidences in the Adriatic Sea, Padova, Italy, 21-22 February 2024.

López, B. D. (2012). Bottlenose dolphins and aquaculture: interaction and site fidelity on the north-eastern coast of Sardinia (Italy). *Marine biology*, 159(10), 2161-2172.

Mannini, P. & Massa, F. (2000) Brief overview of Adriatic fisheries landing trends (1972-97). In: Report of the First Meeting of the AdriaMed Coordination Committee. FAO-MiPAF Scientific Cooperation to Support Responsible Fisheries in the Adriatic Sea. GCP/RER/010/ITA/TD-01, pp. 31-49

Marine Spatial Planning Global, (November 2025); https://www.mspglobal2030.org/msp-roadmap/msp-around-the-world/europe/slovenia

Maritime code (Pomorski zakonik), Ministrstvo za promet, Uprava Republike Slovenije za pomorstvo (MzP), 2001.; https://pisrs.si/pregledPredpisa?id=ZAKO2868

Ministarstvo prostornog uređenja, graditeljstva i državne imovine Republike Hrvatske, (October 2025), Proposal of the Spatial Plan of the Exclusive Economic Zone of the Republic of Croatia in the Adriatic Sea – released by Ministry of Physical Planning, Construction and State Assets (Croatia); https://mpgi.gov.hr/prostorni-planovi-drzavne-razine/prostorni-planovi-podrucja-posebnih-obiljezja/prostorni-plan-iskljucivoga-gospodarskog-pojasa-republike-hrvatske-u-jadranskom-moru/prijedlog-plana-za-javnu-raspravu/18620

Ministry of Environmental Protection and Green Transition of the Republic of Croatia, (https://www.haop.hr/hr/tematska-podrucja/prirodne-vrijednosti-stanje-i-ocuvanje/ukljucite-se-u-zastitu/protokoli-za-0

MOm. (2009). MOFI project: Monk seal and fisheries: Mitigating the conflict in Greek seas. Athens, Greece: MOm/Hellenic Society for the Study and Protection of the Monk Seal. Retrieved 16 June 2011

Montenegrin Investment Agency (2025). Guidelines Transport and Logistics Sector Montenegro. chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://mia.gov.me/wp-content/uploads/Transport-and-Logistics-Sector-in-Montenegro-2025-online.pdf

Nastasi, A., Pieraccini, J., Sacchi, J., Demma, M., Gennari, A. (2021). *Guida sulle buone pratiche per la manipolazione dei cetacei catturati accidentalmente durante le attività di pesca nel Mediterraneo.* FAO and ACCOBAMS.

Nastasi, A., Pieraccini, j., Poisson., F., Sacchi, J., Gennari, A. (2021). *Guida sulle buone pratiche per la manipolazione delle tartarughe marine catturate accidentalmente durante le attività di pesca nel Mediterraneo.* FAO and ACCOBAMS.

National Tourism Organisation. (n.d.). International Yachting Guide Montenegro. https://montenegro-experte.de/wp-content/uploads/yachting_guide.pdf

Nikčević, Jelena (2019). "Strengthening the Role of Local Government to Ensure Sustainable Development of the Cruise Sector: The Case of Kotor." Marine Policy 109 (103693): 103693.

NOAA, (2024). How does oil impact marine life? *National Ocean Service website*, https://oceanservice.noaa.gov/facts/oilimpacts.html.

Noonsite (2025). Montenegro Pre-Arrival Procedures for Yachts. https://www.noonsite.com/place/montenegro/view/clearance/#:~:text=General%20Procedure&text=All%20crew%20must%20remain%20on,Portonovi%20Marina%20in%20Herceg%20Novi

Notarbartolo di Sciara, G., Agardy, T., Hyrenbach, D., Scovazzi, T., Van Klaveren, P., (2008). The pelagos sanctuary for mediterranean marine mammals. *Aquatic conservation: Marine and Freshwater Ecosystems*. 18, 367e391.

Notarbartolo di Sciara, G., Birkun Jr., A., (2010). Conserving Whales, Dolphins and Porpoises in the Mediterranean and Black Sea: an ACCOBAMS Status Report. *ACCOBAMS*, Monaco.

Nowacek, D. P., Thorne, L. H., Johnston, D. W., Tyack, P. L. (2007). Responses of cetaceans to anthropogenic noise. *Mammal Review*, 37(2), 81–115.

Pace, D.S., Tizzi, R., Mussi, B. (2015). Cetaceans Value and Conservation in the Mediterranean Sea. *Journal of Biodiversity & Endangered Species*, S1: S1.004. doi:10.4172/2332-2543.S1.004

Pace, D. S., Pulcini, M., & Triossi, F. (2003). Interactions with fisheries: modalities of opportunistic feeding for bottlenose dolphins at Lampedusa Island (Italy). European Research on Cetaceans, 17, 110–114.

PAP/RAC, (January 2025) https://paprac.org/news/item/camp-bosnia-and-herzegovina-project-completion-implementation

PAP/RAC, GEF Adriatic project. pp122 Marine spatial plan of Montenegro: the concept and proposals of planning solutions

Pasanisi, E., Chimienti, M., Blasi, M.F., Maffucci, F., Hochscheid, S. (2022). Ocean highways in the Western Mediterranean: Which are the areas with increased exposure to

maritime traffic for loggerhead turtles? *Frontiers in Marine Science*, 9:924532. doi: 10.3389/fmars.2022.924532

Pavlova, I. (2024). Montenegro's Luka Kotor expects record-breaking 2024 cruise season - report. Available at: https://seenews.com/news/montenegros-luka-kotor-expects-record-breaking-2024-cruise-season-report-1244756

Piroli V.; (2021); Disertacion; Studim Taksonomik dhe Ekologjik i Breshkave Detare (Rendi Testudines) në Shqipëri. https://api.fshn.edu.al/uploads/Vilma_Piroli_Doktorature_Biologji_f754e2627b.pdf

Pleslić G (2022) Struktura populacije dobroga dupina *Tursiops truncatus* (Montagu, 1821) u istočnom Jadranu. PhD, University of Zagreb, Zagreb

Pleslić G, Vučur Blazinić T, Radulović M, Cukrov Car M, Hofs J, Miočić-Stošić J, Frleta-Valić M. 2023. Jadranski projekt dupin – godišnji izvještaj 2022. Institut Plavi svijet, Veli Lošinj.

Proposal of the Law on Sea Fisheries accompanied by the Public Hearing Report. (Predlog zakona o morskom ribarstvu s Izvještajem sa javne rasprave), Government of Montenegro, published 5 June 2025. Available at: https://www.gov.me/dokumenta/67773194-3736-4a6e-be17-f20521c64522

RAC/SPA - UNEP/MAP, 2013. Fishery activities assessment in Montenegro : case study of five selected parts of Montenegrin coast. By Mirko Djurović and Olivera Marković. Ed. RAC/SPA - MedMPAnet Project, Tunis: 39p.

RES Croatia (2023) Action Plan for the Uptake of Offshore Renewable Energy Sources (https://oikon.hr/action-plan-for-the-uptake-of-offshore-renewable-energy-sources/

Renewable Energy Sources of Croatia (RES), (2025), https://oie.hr/en/

Rudd, Laura E., Tim Awbery, Romina Waller, Molly Crowe, Julianna Bauer, Anna Jacquemart, Natasa Nikpaljevic, and Aylin Akkaya. (2022a). "The Effect of Commercial and Artisanal Fishing Practices on the Behavioral Budget of Bottlenose Dolphins off the Coast of Montenegro, South Adriatic Sea." Marine Mammal Science 38 (3): 990–1006.

Rudd, L. E., Pace, D. S., Fortuna, C. M., Lauriano, G., Gnone, G., Mackelworth, P., Holcer, D., & Vella, A. (2022b). Non-targeted tourism affects the behavioural budgets of bottlenose dolphins (Tursiops truncatus) in the South Adriatic, Montenegro. Marine Mammal Science, 38(1), 179–197.

Sacchi, J. 2021. Overview of mitigation measures to reduce the incidental catch of vulnerable species in fisheries. Studies and Reviews No. 100 (General Fisheries Commission for the Mediterranean). Rome, FAO

Sacdanaku E., V. Rae; (2023); Drone surveying of Gjiri i Drinit & Patok Lagoon for Sea Turtles Presence and Distribution (2020-2022): Technical Report. A report by the Mediterrean Association to Save the Sea Turtles (MEDASSET). 32 PP. https://issuu.com/medasset/docs/drini_bay_monitoring_technical_report_medasset_fin

Southall, B. L., Finneran, J. J., Reichmuth, C., Nachtigall, P. E., Ketten, D. R., Bowles, A. E., Ellison, W. T., Nowacek, D. P., & Tyack, P. L. (2019). Marine mammal noise exposure criteria: updated scientific recommendations for residual hearing effects. *Aquatic Mammals*, *45*(2), 125-232. https://doi.org/10.1578/AM.45.2.2019.125

Southall, B. L., Nowacek, D. P., Bowles, A. E., Senigaglia, V., Bejder, L., Tyack, P. L. (2021). Marine mammal noise exposure criteria: assessing the severity of marine mammal behavioral responses to human noise. *Aquatic Mammals*, *47*(5), 421-464. https://doi.org/10.1578/AM.47.5.2021.421

Southall, B. L., Bowles A. E., Ellison, W. T.,Finneran, J. J., Gentry, R. L., Greene, C. R. Jr., Kastak, D., Ketten, D. R., Miller, J. H., Nachtigall, P. E., Richardson, W. J., Thomas, J. A., Tyack, P. L. (2007). Marine Mammal Noise Exposure Criteria: Initial Scientific Recommendations. *Aquatic Mammals,* Volume 33, Number 4, 2007.

SPA/RAC. (2022). *Marine and coastal biodiversity conservation for 2030 and beyond: Application of area-based conservation measures in Montenegro.* SPA/RAC / University of Sevilla. Retrieved from https://spa-rac.org/en/publication/download/1527/montenegro-marine-and-coastal-biodiversity-conservation-for-2030-and-beyond

Strbenac, A. (ed.) 2015. Strategy on the conservation of cetaceans in the Adriatic Sea for the period 2016 – 2025. Document produced under the NETCET project, IPA Adriatic Cross-border Cooperation Programme.

UNEP-MAP-RAC/SPA (2013). Important areas for the conservation of cetaceans in the Gulf of Lions shelf and slope area: synthesis of existing data on cetaceans and threats. By David, L., Di Méglio, N. Ed. RAC/SPA, Tunis.

UNEP-MAP-RAC/SPA. 2015. Adriatic Sea: Important areas for conservation of cetaceans, sea turtles and giant devil rays. By Holcer, D ; Fortuna, C.M and Mackelworth, P.C. Edited by Cebrian, D.,& Requena, S., RAC/SPA, Tunis ; 69 pp.

UNEP-MAP-RAC/SPA. 2014. Status and Conservation of Cetaceans in the Adriatic Sea. By D. Holcer, C.M. Fortuna & P. C. Mackelworth. Draft internal report for the purposes of the Mediterranean Regional Workshop to Facilitate the Description of Ecologically or Biologically Significant Marine Areas, Malaga, Spain, 7-11 April 2014.

UNEP/MAP (2021). State of the Environment and Development in the Mediterranean. United Nations Environment Programme / Mediterranean Action Plan, Athens.

UNEP/MAP-SPA/RAC (2021). Albania Conservation of Mediterranean marine and coastal biodiversity by 2030 and beyond. By R. Kedani. Ed. SPA/RAC, Tunis: 74 pp. + Annexes.

UNEP/MAP-PAP/RAC and Genc Myftiu (2019). Guidelines for Marine spatial planning process in Albania, //efaidnbmnnnibpcajpcglclefindmkaj/https://www.rac-spa.org/sites/default/files/doc_msp/msp_study/msp_guideline_albania_final.pdf

UNEP/MAP-SPA/RAC, 2021. Montenegro marine and coastal biodiversity conservation for 2030 and beyond. By V. Bušković. Ed. SPA/RAC, Tunis: 95 pp + Annexes.

UNEP/MAP-PAP/RAC and MESPU (2021). Marine spatial plan of Montenegro: concept and proposals of planning solutions Authors (alphabetically): Milena Batakovi , Gojko Berlengi, Ines Berlengi, Nika Cigoj Sitar, Željka urovi , Ivica ur evi-Tomaš, Mirko urovi , Sreko Favro, Zdravko Ikica, Mihailo Jovi evi , Saša Karajovi , Zoran Klari , Mirjana Kova i , Željko Lompar, Milica Mandi , Marina Markovi (Ekologika), Marina Markovi (PAP/RAC), Novica Mijovi , Ana Mišurovi , Aleš Mlakar, Dora Mužini , Ana Peši , Ivana Stojanovi . Ed.:

White M, Boura L, Grimanis K, Venizelos L., MEDASSET (2012) Action Plan for the Conservation of Sea Turtles and their Habitats in Albania; Athens, Greece. 38pp.

World Shipping Council (2024). WSC Whale Chart: A global voyage planning aid to protect whales. (https://static1.squarespace.com/static/5ff6c5336c885a268148bdcc/t/672e33f771bca527f4adda11/1731081219615/WSC+Whale+Chart_+A+global+voyage+planning+aid+to+protect+whales+%28Oct+2024%29.pdf)

Zappes, C. A., Pinto de Sa Alves, L. C., Ventura da Silva, C., Azedevo, A. dF., Di Beneditto, A. P. M., & Andriolo, A. (2013). Accidents between artisanal fisheries and cetaceans on the Brazilian coast and Central Amazon: Proposals for integrated management. Ocean and Coastal Management, 85(A), 46–57. https://doi.org/10.1016/j.ocecoaman.2013.09.004

Žiža, V., Marenčič, Z., Turk, R., Lipej, L. 2001. First data on the loggerhead turtle (*Caretta caretta*) in Slovenia (north Adriatic). Pages 261-264 in First Mediterranean Conference on Marine Turtles, Rome.

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