

CORALLO Project

Correct Enjoyment (and Awareness Raising) of Natura 2000 Locations

INTERREG V-A Italy-Malta Programme C2-3.1-103 Asse prioritario III, Obiettivo specifico 3.1



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A WORD FROM THE LEAD PARTNER

Sir David Attenborough could not have hit the nail better on its head when he stated that "No one will protect what they don't care about and no one will care about what they have never experienced." All the good intentions in the world, on their own, will not manage to mobilise the public in the quest to safeguard iconic sites for future generations by enjoying them responsibly during current times. This is what the CORALLO project is all about – promoting the responsible and sustainable enjoyment of protected marine sites in Malta and Sicily as an effective vehicle for fostering a greater public awareness of the living assets of the same iconic sites. This higher degree of awareness would potentially spill over into a more robust sense of stewardship that users feel towards these same sites that they enjoy, through the realisation that their continued enjoyment actually hinges on their long-term welfare and safeguard.

With this over-arching goal in mind, within CORALLO, over the past three years, we strove to showcase examples of good practice in terms of responsible enjoyment as well as to promote a greater awareness through the adoption of the latest digital tools, ranging from humanoid robots, Virtual Reality productions, holograms, a variety of audio-visual tools (underwater documentaries, animation clips), 3D models, projected microscope fields of view and a panoply of other tools which have been demonstrated within multiple outreach events organised in different fora across Malta and Sicily. I genuinely believe that we did succeed to somewhat stir the waters through the CORALLO project, even managing to get important endorsements along the way, including from His Excellency President George Vella and from the EU Commission through the Ocean Mission Board and the Mediterranean Lighthouse.

But the feather in the cap which I am mostly proud of is that, through CORALLO, we managed indirectly to take underwater members of the public who are impaired, for some reason or another, from doing so, thus enhancing accessibility to the marine environment. This is a commendable legacy that I, as Coordinator of this incredible journey called CORALLO,

am most proud of and one which we will be using as our launching pad for future, post-CORALLO projects.

I wholeheartedly thank all my colleagues within the Oceanography Malta Research Group (OMRG) at the Department of Geosciences, within the Faculty of Science at the University of Malta, for their support in coordinating CORALLO, namely Dr Adam Gauci, Mr Marco Iannaccone, Ms Jessica Busuttil, Mr Johann Galdies, Mr Alessio Marrone and Ms Audrey Zammit, as well as colleagues from the other CORALLO Maltese partners, namely from the ERA and from Heritage Malta. Let us ensure that the CORALLO legacy lives on and continues to be built upon through further environmental management and education initiatives in future!

Prof. Alan Deidun
CORALLO Project Coordinator



Little Neptune seagrass
(*Cymodocea nodosa*)

A WORD FROM HERITAGE MALTA

Heritage Malta is pleased to collaborate on projects such as CORALLO, which focus on preserving the natural setting of historical sites near coastal and marine areas. By working together on such projects, we can unlock the untapped potential of these sites by viewing them as part of a larger network of Natura 2000 sites, linked geographically and historically with our Sicilian neighbours.

As Malta is an island, our history is intrinsically linked to our seafaring past. In prehistory, the sea was vital for people's livelihood – not for food, as presumed until recently, but because of specific materials – such as obsidian – which reached our shores via maritime pathways. Furthermore, the first people to call Malta their home came here by sea, probably from Sicily, our partner in this project.

Through the CORALLO project, we continue to strengthen our ties with neighbouring islands that have always had great importance in the history of Malta.

The mission of Heritage Malta is, first and foremost, to bring our country's historical and cultural heritage as close to the public as possible. Thanks to the experience we have gained over the years, today we are approaching this mission in a completely different manner. In the past, we considered our sites as isolated spaces, each one a separate entity in itself. Today we have learned to look at them more holistically.

The national sites under Heritage Malta's wing did not develop randomly, but rather as a direct result of the landscape and the natural environment on which the people who built them depended. The environmental context of our archaeological and historical sites is, therefore, crucial to help us better understand these Natura 2000 sites and recognize why they were created, in what ways they were used, and what makes them so precious.

But perhaps the most important thing that experience has taught us is that nature and history go hand in hand together. The unique historical, living and landscape assets of each site work conjointly to enhance each other's attributes and, ultimately, the enjoyment and appreciation of their visitors.

I hope that the valuable work being carried out in the CORALLO project continues to bear the desired fruit for the benefit and better knowledge of today's generations and those of the future.

Noel Zammit
Chief Executive Officer



Common octopus
(*Octopus vulgaris*)

A WORD FROM THE ENVIRONMENT AND RESOURCES AUTHORITY (ERA)

The Central Mediterranean region is an important ecological hotspot, with a very rich and varied biodiversity, and its management requires close collaboration between the different areas of influence. With this view, the Environment and Resources Authority (ERA) gladly became one of the partners in the CORALLO Project, together with other Maltese and Sicilian entities.

Malta has invested heavily in the assessment of its coastal and marine biodiversity and set up a network of protected areas. This includes protection of most of its important coastal and marine ecosystems, including the endemic Maltese coastal habitats and species, a number of sand dunes and wetlands, as well as various marine habitats. Indeed, Malta has already declared about 35% of its waters as Marine Protected Areas, all of which are also subject to conservation measures. These measures address the protection of our biota and ecosystems, but also recognise the means of managing pressures and threats, some of which are an outcome of a wide range of natural and human-related activities. Various implementation of initiatives are required to address impacts and effects arising from pollution, climate change, erosion and desertification, natural events, as well as other actions which may threaten this rich heritage. One of the important measures to achieve the ultimate objective of managing such biodiversity is environmental literacy, with the ultimate aim to promote and generate awareness and understanding to such matters.

Environmental literacy can be defined as “the degree to which people have an objective and well-informed understanding of environmental issues.” This is because knowledge is the basis for change, and eventually effective and positive actions. Education is one of the major drivers for the dissemination of knowledge; after all, raising environmental information and leading to changes in behaviour are seen as very effective actions to address multiple environmental issues.

The CORALLO project is a prime example of such efforts. The collaboration between ERA, the University of Malta and Heritage Malta on the local level and with the several Sicilian partners on a regional level, serve to highlight the importance and beauty of our natural environments – with a particular focus on marine Natura 2000 sites in the process strengthening partnerships with neighbouring countries and consolidating projects with the end goal of a holistic positive impact on the whole Central Mediterranean Region.

Once the project comes to a conclusion, it will have seen direct action being taken on several sites with long term impacts, not only on the environment, but also in the social domain with educational outreach efforts through adequate signage for the visitors, the acquisition of a variety of digital tools, and additional educational audio-visual. Such exemplary projects leave tangible direct impacts through concrete actions on the ground, which strive to educate the public and contribute to a positive change in our environment. We hope that this booklet will assist the reader with relevant codes of good practice and generate interest to gather more information, which can also be found online on the ERA and CORALLO websites.

Kevin Mercieca
Chief Executive Officer



Fireworm (*Hermodice carunculata*)

WHAT IS CORALLO?

Sicily and Malta are subject to intense urbanisation pressure, especially in coastal and marine areas, as well as inappropriate and insufficient resources allocated for the management of Natura 2000 sites. CORALLO (Correct Enjoyment (and Awareness Raising) of Natura 2000 Locations) aims to address challenges being faced by Natura 2000 sites through joint development, implementation and funding. CORALLO's main objective is the fostering of a greater degree of awareness amongst Natura 2000 sites users and visitors of the Maltese islands and Sicily about the biodiversity assets held within these same sites and how they can be protected. CORALLO aims to unlock the untapped potential of a number of Natura 2000 sites in Malta and Sicily by promoting the largely-unknown and unique living and landscape assets of each site, while encouraging responsible enjoyment of the sites with their users.

The project's three specific objectives are:

1. identification of needs and characteristics of Natura 2000 sites,
2. promotion of ecosystem services, and
3. awareness-generation.

The CORALLO project used a Strength, Weakness, Opportunities & Threats (SWOT) analysis to identify the characteristics of each targeted Natura 2000 site and its end-users. Part of the findings of the SWOT analysis carried out through the project have shown that there is limited awareness of the environmental impact by users on Natura 2000 sites, and there are several opportunities for educational and responsible enjoyment initiatives. The project has also developed various awareness-generating tools such as gaming, virtual reality, interactive panels and interactive media, amongst others to encourage user engagement with these landscapes while respecting their preservation through responsible enjoyment codes of conduct.



The composition of the CORALLO consortium is a complementary one as it incorporates different entities that are all directly or indirectly linked with Maltese and Sicilian Natura 2000 site management aspects, thus increasing the credibility and feasibility of the project in terms of implementation success. The consortium includes partners with a regulatory role (ERA & ARPA), a scientific and educational role (University of Malta & University of Palermo), a site management role (Heritage Malta & Plemmirio MPA) and a dissemination role (CoRiSSIA), with each partner holding consolidated expertise within each aspect.

FOR FURTHER INFORMATION ABOUT THE PROJECT VISIT:

- Project website:



- Project social media channels



Bottlenose dolphin
(*Tursiops truncatus*)

THE MALTESE COAST

The Maltese Islands are an archipelago comprising of three main inhabited islands and several smaller uninhabited ones, located at the centre of the Mediterranean Sea, south of Sicily. The islands are predominantly made up of limestone formations, and their coastlines consist of a unique and diverse landscape that ranges from steep or vertical limestone cliffs to caves and sandy beaches, characterised by marine sedimentary rocks, rich biodiversity, and cultural heritage. The islands are situated on the Malta-Hyblean Platform, a submerged shelf bridge that connects southern Sicily's Ragusa Platform with southern Libya's Tripolitana Platform. The total length of the shoreline of Malta is approximately 219 km.

Rifting in the region has caused various areas of the Maltese Islands to rise alternatively, giving the archipelago a tilt to the northeast, resulting in two primary types of coasts. The western coast of Malta is high, bold, and typically without harbours, whereas on the east, a high ridge known as Mount Sciberras – on which the capital city of Valletta is built – separates the Marsamxett Harbour and Grand Harbour. The eastern low-lying shoreline contrasts with the sheer and rectilinear coasts of western Malta. The highest point on the islands, at 253 meters, is located at Dingli cliffs in south-western Malta, while the eastern coastlines are submerged.

The Maltese coast is also known for its rich biodiversity and is home to a variety of habitats. The seagrass meadows habitat is a priority due to its importance as a nursery ground for juvenile fish and other marine species. Other coastal habitats include sandbanks, sea caves and rocky shores, which also host a number of species. In fact, the flora and fauna of Malta have been influenced by the low-lying coastal areas of the Mediterranean. Coastal dunes support species such as the Sand Couch Grass (*Thinopyrum junceum*), the Sea Holly (*Eryngium maritimum*) and the Sea Daffodil (*Pancratium maritimum*). On the other hand, low-lying rocky coasts are



characterised by other species like the Golden Samphire (*Limbarda crithmoides*), the Rock Samphire (*Crithmum maritimum*) and the Maltese Sea Lavender (*Limonium melitense*), which is endemic to the Maltese Islands. Cliffs and coasts are home to many of Malta's native species, such as the Maltese Cliff-orache (*Atriplex lanfrancoi*) and the Maltese Rock-centaury (*Cheirolophus crassifolius*), which is the national plant.

The coast is perceived as a resource that can accommodate all types of coastal-related uses. In fact, it is home to several historical and cultural landmarks, such as ancient fortifications and fishing villages. Malta has one of the most concentrated historic areas in the world, with numerous archaeological sites and buildings dating back to prehistoric times. Furthermore, the coastal area is nowadays subject to legal and administrative systems that regulate the degree of development along the coast, in light of natural and human processes of erosion and accretion.



Black-faced blenny
(*Tripterygion delaisi*)

WHAT IS NATURA 2000?

Stretching over 18% of the European Union's land area and more than 8% of its marine territory, Natura 2000 is the largest coordinated network of protected areas across the European Union. It offers a haven to Europe's most valuable and threatened species and habitats.

A site may be proposed as a 'Natura 2000 site' when it supports natural environment types and habitats of species of Community interest (pSCI), which habitats and species are listed in the Annexes of the EC Habitats Directive (92/43/EEC). It stretches across all 27 EU countries, both on land and at sea. The natural habitats and species that are listed in the said Annexes include vulnerable, rare and endangered habitats and species. Once approved by the European Commission, each site is referred to as a Site of Community Importance (SCI), which is then eventually designated as Special Area of Conservation (SAC), once appropriate conservation measures are applied by the relevant Member State. A Natura 2000 site can also be designated as a Special Protection Area (SPA), as called for under the EC Birds Directive (2009/147/EC), when the site is known to be particularly important for the conservation of wild bird species. Natura 2000 is not a system of strict nature reserves where all human activities are excluded. The aim is to ensure that the management of such sites is sustainable, both ecologically and economically.

Consequent to such obligations, Malta has submitted to the European Commission a number of sites to form part of this important network. The first submission was made back in 2004, following an extensive data collation and evaluation exercise, with the assistance of national experts, commissioned through a grant of the Council of Europe as part of the Emerald network project. Further submissions and updates were made along the years, following the collation and review of additional scientific data, as well as discussions with Directorate-General for Environment.



The submission of sites to the European Commission entails the preparation of a datasheet related to each site, in a format established by the Commission, as presented in the Commission Implementing Decision 2011/484/EU, accompanied by the boundaries for each site. Datasheets and maps for sites designated in Malta are available in the following QR Code:



To date, MALTA HAS THE FOLLOWING DECLARED UNDER THE:

Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (EU Habitats Directive):

- 13 Sites of Community Importance (SCIs), and
- 27 Special Areas of Conservation (SACs);

Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (EU Birds Directive):

- 22 Special Protection Areas (SPAs).

The above include both terrestrial and marine sites. Some SACs completely overlap with SPAs, whilst some other SACs and SCIs partially overlap. When considering the terrestrial area, over 43.6km² (13.8%) is covered by Natura 2000 sites; while the marine environment, such sites cover 4,138km² (35.5% of Maltese waters).





HERITAGE MALTA'S ROLE IN THE PROJECT

Heritage Malta is the National Agency responsible for museums, conservation practice and cultural heritage in Malta. Created by the Cultural Heritage Act, enacted in 2002, it was entrusted with the management of museums, sites and their collections. Its mission is to protect and make accessible cultural heritage to the public. Heritage Malta aims to enhance the experience of visitors to its various national sites and museums, as cultural heritage can contribute significantly to quality of life, tourism potential and economy. The Agency also has a specific educational section that offers edutainment programmes for children of different ages as part of school visits. Heritage Malta seeks to foster relationships with other parties that share the same or similar objectives in the area of cultural heritage and conservation practice, both within Europe and internationally. Heritage Malta is actively participating in several EU Programmes under different EU funding programmes managed by the European institutions. Heritage Malta is also committed to bring culture closer to the people through facilitating interpretation and accessibility, both physical and intellectual. Whether through temporary exhibitions, public lectures, heritage trails, or other specialised events, the Agency ensures that it lives up to the motto of ensuring a future to our past.

The Prehistoric Sites Department within Heritage Malta is responsible for managing and preserving the Ħaġar Qim and Mnajdra Archaeological Park, which is home to two major Neolithic sites also recognised by UNESCO as having World Heritage value and form part of the Megalithic Temples of Malta UNESCO World Heritage Site. This park is also found within terrestrial and marine Natura 2000 sites. Since Heritage Malta curators are familiar with the management of part of a Natura 2000 site, its audiences and its values, the Agency participated in the conceptual development of the project, and information generated through the project will be housed within the sites and their visitor centre. These sites are: Għar Dalam, the National



Museum of Natural History, the Malta Maritime Museum and the Ғaġar Qim and Mnajdra Archaeological Park. Heritage Malta will ensure that the communication materials generated by the CORALLO project integrate with the existing management, visitor flow, and interpretation at the four sites of the project. After the project's completion, Heritage Malta will continue to maintain and manage the communication materials generated and make them accessible to local and international visitors, local councils, organizations, and schools, well beyond the lifetime of the project. The materials generated will also be accessible, through Heritage Malta, to the local councils, as well as other local and national organisations who make use of the area for various events and activities. In addition, Heritage Malta's Education Department will also ensure that the communication materials generated are accessible to schools at various levels, starting from primary to tertiary educational institutions.



Neptune seagrass
(*Posidonia oceanica*)

SITES INVOLVED IN THE PROJECT

- 1 White Tower (Pg20)
- 2 National Museum of Natural History (Pg22)
- 3 Malta Maritime Museum (Pg24)
- 4 Għar Dalam (Pg26)
- 5 Ғағар Qim and Mnajdra Archaeological Park (Pg28)
- 6 Żona fil-Baħar fl-Inħawi ta' Għar Lapsi u ta' Filfla (MT0000102) (Pg30)
- 7 Żona fil-Baħar bejn Il-Ponta ta' San Dimitri (Għawdex) u Il-Qaliet (MT0000105) (Pg32)
- 8 Żona fil-Baħar tal-Lbiċ (MT0000111) (Pg34)

MT0000102



MT0000105

7

2

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MT0000111



WHITE TOWER

The Aħrax tower, also called White Tower, Ta' Ħoslien, D'Espinasse, Ta' Eslien and Torre Bianca, was constructed by Grand Master De Redin. The tower is located in a prime area of high landscape, geological and scientific value, rich in both marine and terrestrial biodiversity, with close proximity to *I-Aħrax tal-Mellieħa* camping area. The Marfa area presents a popular walking trail starting from the Mellieħa Nature Reserve, up to the Red Tower and the Natura 2000 Reserve, including views of Comino and Gozo. The trail extends to the beaches in Armier Bay up to the White Tower and then returning via the cliffs of *L-Aħrax tal-Mellieħa* down to Mellieħa bay.

The tower consisted of two floors: the ground floor used for storage of cannon balls and gun powder, while the upper floor served as living quarters for the torriero, or commander of the tower, three soldiers and a bombardier acting as reinforcement. It was armed with two bronze cannon, four muskets, sixteen cannon balls, musket balls, and ten rotolo (about 8kg) of powder. In 1715, the Aħrax tower was strengthened with the addition of a blockhouse which still lies adjacent to the tower. It was further protected by the construction of walls with musket holes of which only part of one survives. These walls still existed up to 1918. One of these, projected from the south-east corner of the tower, while the existing one projects from the north-east corner of the tower. A ditch which was armed with 8 cannon, but with no embrasures, further protected the whole site.

Under British rule, the tower was converted to a Naval Hydrophone Station in 1918. Hydrophones were able to detect U-boats or submarines approaching the coast. A floor was constructed above the blockhouse and some rooms were added onto the roof. Most of the redan wall was removed and only part of the northern wall was left. A room in the ditch was constructed using recycled stones. After World War II, it was used by private individuals until it was abandoned around 2004. In November 2016, the Mellieħa Local Council signed an agreement with Din l-Art Ħelwa granting the property and adjoining land on a ten-year loan to the non-governmental organisation for restoration, conservation and use.



1

NATIONAL MUSEUM OF NATURAL HISTORY

The National Museum of Natural History lies within the fortified city of Mdina and has a long and fascinating history. The fact that the building itself is an 18th-century palace adds to the overall experience of visiting the museum. The building was constructed in the Parisian Baroque style by Grand Master Antonio Manoel de Vilhena in 1724 and served as a temporary hospital during the 1837 cholera outbreak, as a sanitorium for British troops in 1860, and a hospital of tuberculosis patients until January 1956. The museum was officially inaugurated and opened for public viewing in 1973, and was entrusted with the acquisition, collection, display and conservation of natural history specimens, with a special emphasis on local flora and fauna. The repository for the National Biological Collections has almost 1 million specimens in the Collection. The small but very impressive display of animals and plants preserved in jars attracts a lot of public attention.

The museum holds vast collections of birds, fossils, Quaternary bones, shells, insects, and many others. It is also impressive to see the range of topics covered in the display areas, including local biodiversity, geology and palaeontology, mineralogy, human evolution, marine fauna, skeletal structures, insects, shells, and birds. All halls and rooms are dedicated to local natural historians who contributed to the knowledge of Maltese natural history. One of the highlights at the museum, a room dedicated to the late Joe Sultana, focuses on the ecological importance of the smaller Maltese Islands. The focus on smaller Maltese habitats highlights the diversity of birds and various other faunal species occurring in these habitats within the Habitats hall, and the display of Lewis Mizzi's Rocks and Mineral Collection in the L. Mizzi Hall, are also noteworthy. Overall, the museum holds a wealth of knowledge and specimens that are valuable to both local and foreign researchers.



2

MALTA MARITIME MUSEUM

The Malta Maritime Museum, located on the Vittoriosa Waterfront, nurtures within it the dynamic narrative of an island ever at the crossroads of humanity and civilisation. At the shore which once launched to sea the galleys of the Order of Saint John, and from where bread and biscuit fed for many years the ratings and officers of the British Royal Navy, the Maritime Museum is aptly situated to tell the story of a heterogenous seafaring community, its contact with and impact on the outside world, and its sustained presence in an archipelago, which, notwithstanding its geographical constitution, can hardly be called insular in history.

The Malta Maritime Museum discusses distant and recent historical events and phenomena from a holistic standpoint, employing various disciplines, and contrasts these with a young island nation's colonial and post-colonial narratives. As part of this process, it also strives to bring to light lesser-known events and perspectives of the island's history, and how these have always been invariably intertwined with the community's search for economic sustainability and prosperity.

The museum's story is driven by a backbone of eclectic museum objects, all with an indelible link to the history of Malta, each giving an account of how faiths, cultures, and nations clashed, or indeed co-existed on a rock, a surrounding sea and an ever-smaller world. Discover how an extant anchor from Roman antiquity relates to the local faith and the community's cultural memory; how the living of men and women alike in Malta depended predominantly on corsairing, the same activity antagonized in local folk stories; and how the search for statehood in the last century accompanied economic anxiety. Supporting assets and resources include a comprehensive maritime-themed library and a large collection of archival records. The Maritime Museum is also a major venue for events by Heritage Malta's culinary arm – Taste History – which has since become a staple contributor to the visitor experience.

The museum is presently undergoing a major redesign and redevelopment project to provide the visitor with a meaningful, democratised perspective of the Maltese Islands and its temporal relationship with Mediterranean and global civilisation.



3

GĦAR DALAM

The Għar Dalam cave is the oldest prehistoric site in Malta, and the site's visitor centre still showcases one of Europe's most extensive Victorian-style displays with rows of ancient animal bones which were discovered in the cave. No such animals have lived on the Maltese Islands for thousands of years. The George Zammit Maempel Hall in the visitor centre presents more detailed information about the historical aspects of the cave, and displays various species discovered in the Maltese Quaternary deposits. More Ice Age animal bones can still be seen inside the cave today. Several archaeological excavations of the Għar Dalam cave held during the second half of the 19th century uncovered five significant layers of interest, including a layer of clay, a 'Hippopotamus Layer,' a layer with pebbles and sparse animal bones, a 'Deer Layer' and a 'Cultural Layer' that holds the earliest evidence of human presence in Malta.

Additionally, Għar Dalam is renowned for its ecological value, with a garden of indigenous plants and trees that introduce visitors to local flora. The site is part of Malta's terrestrial Natura 2000 network of protected areas due to its conservation of the endemic Għar Dalam Woodlouse, (*Armadillidium ghardalamensis*) and a roosting site for the Lesser Horse-shoe Bat (*Rhinolophus hipposideros*).



Għar Dalam Woodlouse
(*Armadillidium ghardalamensis*)



COLLAGEN-BINDING PROTEIN FROM
HUMAN AT AROUND 1950. THIS
WAS ISOLATED BY THE LAMAR
RESEARCH AND LABORATORY
UNIVERSITY.

4

HAĠAR QIM AND MNAJDRA ARCHAEOLOGICAL PARK

The Haġar Qim and Mnajdra Archaeological Park consists of two megalithic sites: Haġar Qim and Mnajdra, both of which are over 5000 years old. The park is found within the Rđumijiet ta' Malta: Ir-Ramla taċ-Ċirkewwa sal-Ponta ta' Bengħajsa and the Rđumijiet ta' Malta: Ix-Xaqqa sa Wied Moqbol which form part of Malta's terrestrial Natura 2000 network of protected sites. The sea adjacent to the park lies within both the Żona fil-Baħar fil-Lbiċ and Żona fil-Baħar fl-Inħawi ta' Għar Lapsi u ta' Filfla marine Natura 2000 sites.

Haġar Qim is a late-Neolithic site that includes a group of megalithic buildings, located on the crest of a ridge at the top of a promontory, with a fertile plain to its east and garrigue sloping down to the sea to the west. The main building is unusual as it has external wall features and doorways, with a central passage paved in stone slabs and chambers with beaten earth floors. The original low-relief carvings, copies of which are nowadays in this building, are displayed at the National Museum of Archaeology in Valletta. Doorways inside the buildings are either trilithon, built of two upright stone with a lintel and threshold, or an opening cut into a single megalith, known as a 'porthole' doorway. Part of these buildings originally had a corbelled roof made of successive courses of megaliths.





Mnajdra, a contemporary building, probably used by the same community given its proximity, is located 500m downhill from Ħaġar Qim and consists of three buildings constructed using two different types of materials: Globigerina limestone and Coralline limestone. The first and oldest structure is the small three-apsed structure. The South building, with its concave façade was next to be completed, followed by the Central building which was constructed on an artificial platform between the two earlier buildings. The South building's doorway is aligned with the Spring and Autumn equinox sunrise, with the rising sun hitting two decorated slabs inside the first apses during the Winter and Summer solstices. Apart from the central passage leading to apses on either side, the buildings at Mnajdra also include tiny chambers constructed within the thickness of the walls. Since these sites were excavated less than two centuries ago, their slow deterioration has been witnessed at first hand. Thus, nowadays, both sites are covered from the natural elements by the protective shelters constructed in 2008, intended to slow down the impact of natural elements and the rate of deterioration of these sites until alternative preservation methods are developed.



5

MAIN NATURAL ASSETS OF THE NATURA 2000 SITES INVOLVED IN THE PROJECT

ŻONA FIL-BAĦAR FL-INĦAWI TA' GĦAR LAPSI U TA' FILFLA (MT0000102):

This site holds a variety of marine habitats and also encompasses the waters adjacent to the coastal cliffs in the Għar Lapsi area and those around the Island of Filfla (and its surrounding rocks). Despite being a small islet, Filfla (the Maltese name, Filfla, means 'small pepper') is a site of global importance for seabirds, which also include nesting colonies of the Mediterranean Storm Petrel (*Hydrobates pelagicus melitensis*). The islet itself is also declared a strict Nature Reserve and a Natura 2000 site (MT0000016), also in view of the site's variable geomorphology and diverse habitats and species – including reefs, sandbanks and seagrass meadows, with a relatively high species richness and relatively unpolluted waters.



Filfla Islet



Hatpin urchin
(*Centrostephanus longispinus*)

ŻONA FIL-BAĦAR BEJN IL-PONTA TA' SAN DIMITRI (GĦAWDEX) U IL-QALIET (MT0000105):

This site hosts a large variety of seagrass meadows based on *Posidonia* and *Cymodocea* which grow on various substrates including rock and sand, and in some cases form large barrier reefs. Various other marine habitats and species occur in the area including sea fir forests based on *Cystoseira* species, as well as various communities with algae and reefs, and all the animals which depend on these habitats for feeding, breeding and shelter. Partially submerged caves are also present, particularly along the coast of the Island of Comino. Various species are also known to inhabit this MPA, including the Coralline algae maerl species like *Lithothamnion minervae*, a species which has been included in national legislation as an algal species of national interest and the protected Loggerhead turtle (*Caretta caretta*).



San Blas Beach, Gozo



Loggerhead turtle
(*Caretta caretta*)

7

ŻONA FIL-BAĦAR TAL-LBIĊ (MT0000111):

This site covers the western to southern coast of Malta, comprising the coastal cliffs and adjacent marine areas, which include various underwater reefs housing different habitats and species, as well as partially submerged and submerged caves systems that are important for multiple species, including fish and invertebrates. The cliffs themselves are a very important breeding ground of global importance for three seabird species: the Scopoli's shearwater (*Calonectris diomedea*); the Yelkouan shearwater (*Puffinus yelkouan*); and the Mediterranean Storm Petrel (*Hydrobates pelagicus melitensis*). These birds nest and feed in the area, raising and nurturing their chicks until they are able to migrate south as part of their life cycle.

In January 2023, the ERA of the Maltese Islands, a partner of the CORALLO project, published the Site-Specific Conservation Objectives (SSCOs) and the Conservation Measures (CMs) for all the marine Natura 2000 sites designated within Maltese waters, as well as the three sites included within the CORALLO project.

A conservation objective is defined as “the specification of the overall target for the species and/or habitat types for which a site is designated in order for it to contribute to maintaining or reaching favourable conservation status”. While favourable conservation status is defined at the level of the natural range of the habitat or species, management related contributions of the site towards the achievement of such an objective needs to be based on site-specific objectives that consider the ecological functions of the protected areas. Conservation measures (CMs) are the actions through which the conservation objectives for a Natura 2000 site would be achieved.

These SSCOs and CMs can be accessed through the following QR Code:





Red scorpionfish
(*Scorpaena scrofa*)

8





CODES OF BEST PRACTICE

Good practices whilst enjoying responsibly coastal and marine Natura 2000 sites

- **Do not litter:** Ensure that you carry your waste with you and dispose of it in the designated dust bins to separate waste in line with environmental legislation. Litter can be harmful to living organisms and their habitats, especially litter consisting of plastic and other synthetic (artificial) components, including cigarette butts.
- **Avoid discharges into the sea:** This can be achieved by maintaining in good working order all vessel motors and engines, and by avoiding the deliberate or accidental spills of oils, lubricants, paints, sealants, solvents and other toxic material into the sea.
- **Respect protected coastal and marine life:** Protect coastal and marine creatures and avoid unnecessary handling and touching, poaching (e.g. collecting mollusc shells, starfish and other charismatic species) or stepping/trampling on them. Avoid the use of artificial light within dark environments (e.g. caves) or interference with their natural habitats and processes. For instance, any Loggerhead turtle nests on beaches should not be tampered with in any way and their occurrence should immediately be reported to the relevant authorities.
- **Respect non-protected coastal and marine life:** Non-protected species should not be over-exploited for consumption purposes. Spearfishing is not allowed within bathing areas or through the use of SCUBA diving gear.

- **Rescue injured marine life:** This may include protected Loggerhead turtles or cetacean (dolphin and whale) species. For instance, fishing lines lodged within marine turtles' digestive tract should not be removed by pulling, as attached hooks might damage tissue and cause fatal internal bleeding. The Environment & Resources Authority and/or the Wildlife Rescue Team of Nature Trust (Malta) should immediately be alerted about such finds. ERA's contact is : +356 2292 3500, whereas Nature Trust's contacts are: on +356 9999 9505 and info@naturetrusmalta.org)
- **Do not feed animals:** Feeding animals can alter their natural behaviour and make them more vulnerable to predation or capture. Moreover, it can be dangerous to human subject and wild species alike.
- **Avoid damaging protected natural habitats:** This may happen in various ways, including: through anchoring on protected seabed habitats, e.g. Neptune seagrass (*Posidonia oceanica*), through unnecessary trampling or by parking vehicles on protected sand dune plants (e.g. at Ir-Ramla l-Ħamra and at Ir-Ramla tat-Torri l-Abjad) or on shallow vermetid reefs (e.g. at Qawra Point); damage can also happen through the detachment of erect communities as a result of collisions with snorkelling and diving fins, and through the exhalation of air bubbles within caves.

- **Avoid unnecessary disturbance through light and noise:** This can arise from the generation of loud noises and the use of artificial light at night, especially in areas which are known nesting sites for a number of seabird species or for Loggerhead turtles, which in turn might lead to the disorientation of young animals and to the abandonment of nesting attempts.
- **Report any marine and beach litter sightings:** Use the ERA web-based app from your mobile, tablet, laptop or computer to report any litter observed so as to assist ERA in centralising the data collected on marine litter, corroborate the data collected through Malta's national monitoring programme, and identify the areas at high risk for eventual clean-ups and related policy implementation.
- **Assist on Clean-Ups:** Dispose of litter in appropriate facilities and assist in the collection of litter, by reporting the collection to the web-based app.
- **Alert relevant entities if you spot interesting or protected species:** Reports can be made to the Species Observation Survey available via the QR code so as to assist ongoing environmental mapping and monitoring efforts.
- **Report the occurrence of any alien (non-indigenous) species:** Reports can be made to the Spot the Alien citizen science campaign (aliensmalta@gmail.com; 79604109; social media channels) so as to assist ongoing environmental monitoring efforts, given that alien species are a hazard to native biodiversity.



- **Report any cases of environmental vandalism, poaching and/or despoilment to the relevant authorities:** Reporting may be done through various means, including online reporting, via e-mail (info.era@era.org.mt) or telephone (+356 2292 3500).
- **Keep updated on environmental information:** More information is available on the Malta Environment Platform & Services (MEPS). This is a shared environmental information platform developed by ERA to provide the public with the latest environmental spatial data, with free information on environmental information presented in a user-friendly geoportal.
- **Keep abreast of protection level and site regulations:** Sites are subject to different site regulations, conservation measures and management plans. More information is available in relevant sections of the ERA website.
- **Explore the Natura 2000 Coastal Sites Network:** Discover our protected coastal Natura 2000 sites to keep informed. More information is also available at the Interactive Map available at the following QR Code.



The **Spot the Jellyfish** is a national citizen science campaign which has been recording the occurrence of over 40 different jellyfish species within Maltese waters since 2010. It is coordinated by Prof. Alan Deidun, from the Oceanography Malta Research Group (OMRG). Send your jellyfish reports through the website or through the campaign's Facebook page.





Spot the Jellyfish

FURTHER READINGS

- Published works**
- Barcelona Convention and Protocols | UNEPMAP
 - CMS | Convention on the Conservation of Migratory Species of Wild Animals
 - Environment Directorate-General - Environment - European Commission (europa.eu)
 - Convention on the conservation of European wildlife and natural habitats (Bern Convention) - Convention on the Conservation of European Wildlife and Natural Habitats (coe.int)
 - Emerald Network of Areas of Special Conservation Interest - Convention on the Conservation of European Wildlife and Natural Habitats (coe.int)
 - Farrugia Randon, Stanley, 2020, *L-Aħrax Tower*, Malta
 - LEĠĠLAZZJONI MALTA (legislation.mt)
 - Natura 2000 in Malta (arcgis.com)
 - Specially Protected Areas Protocol / SPA and Biodiversity Protocol | UNEPMAP
 - UNEP/EUROBATS | Agreement on the Conservation of Populations of European Bats
- Websites**
- www.whitetower.dinlarthelwa.org/history/
 - www.cbd.int/
 - www.storymaps.arcgis.com/stories/5f15070446a64488b56f2f734e6b09b4
 - www.era.org.mt/wp-content/uploads/2019/05/2011_484_EU.pdf
 - www.heritagemalta.mt/explore/
 - www.era.org.mt/topic/natura-2000-datasheets-maps/
 - www.eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31992L0043
 - www.eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32009L0147
 - www.era.org.mt/wp-content/uploads/2019/05/Chapter4_LandCoast_26Nov2018.pdf
 - www.era.org.mt/wp-content/uploads/2019/05/Chapter8_Biodiversity_04Dec18.pdf
 - www.era.org.mt/topic/maltese-landscapes-geomorphology/
 - www.sustainabledevelopment.gov.mt/wp-content/uploads/2021/10/Stratgic-Plan-for-the-Environment-and-Development-SPED.pdf
 - www.britannica.com/place/Malta
 - www.ilmiklem.com/category/toponomastika-tal-gzejjer-maltin/

TABLE OF CONTENTS

A word from the Lead Partner	2
A word from Heritage Malta's CEO	4
A Word from ERA's CEO	6
What is CORALLO?	8
The Maltese Coast	10
What is Natura 2000?	12
Heritage Malta's role in the project	16
Sites involved in the project	18
White Tower.....	20
National Museum of Natural History.....	22
Malta Maritime Museum.....	24
Għar Dalam.....	26
Ħaġar Qim and Mnajdra Archaeological Park.....	28
Main natural assets of the Natura 2000 sites involved in the project	30
Żona fil-Baħar fl-Inħawi ta' Għar Lapsi u ta' Filfla (MT0000102).....	30
Żona fil-Baħar bejn Il-Ponta ta' San Dimitri (Għawdex) u Il-Qaliet (MT0000105).....	32
Żona fil-Baħar tal-Lbiċ (MT0000111).....	34
Codes of best practice	38
Further readings	44
Table of contents	45





CORALLO website

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