



Department of the Environment,  
Heritage and Climate Change

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HM Government of Gibraltar

# **Southern Waters of Gibraltar SAC/SPA**

## **Conservation objectives**

December 2017

Working document. Version 2.

This document should be read in conjunction with the Gibraltar Marine Reserve Management Plan which includes a comprehensive set of Conservation Measures applicable to the Southern Waters of Gibraltar SAC/SPA.

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# 1. Introduction

## 1.1 Summary

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This document outlines the conservation objectives and measures required under the European Union Habitats<sup>1</sup> and Birds<sup>2</sup> Directives, in order to achieve a Favourable Conservation Status<sup>3</sup> in accordance with Article 6 of the Habitats Directive, which establishes conservation measures for Natura 2000 sites. The legal framework with which the site was designated is stipulated, for which the competent authority is the Ministry for the Environment, Heritage and Climate Change (MEHCC) of HM Government of Gibraltar (HMGoG). MEHCC is responsible for complying with the requirements of the Habitats and Birds Directives. The document also provides an analysis of key habitats and species. It provides references to documents that guide and assist the competent authority and other stakeholders in complying with the requirements of the Habitats Directive. The advice in this document is dynamic and subject to review, as new information may change the status, designation, conservation objectives and measures to be taken in the future.

## 1.2 Legal Framework

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The Habitats and Wild Birds Directives were transposed into Gibraltar law on the 25<sup>th</sup> August 1995<sup>4</sup>. The Southern Waters of Gibraltar were approved as a Site of Community Importance (SCI) in July 2006 following Commission Decision 2006/613/EC. A protection regime has been in existence since 1991 through the Nature Protection Act (1991). Following its approval as an SCI, the Government of Gibraltar declared the Southern Waters of Gibraltar as a dual

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<sup>1</sup> Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora.

<sup>2</sup> Council Directive 79/409/EEC on the conservation of wild birds.

<sup>3</sup> A habitat or species is defined as being at favourable conservation status when its natural range and the areas it covers within that range are stable or increasing and the specific structure and functions which are necessary for its long term maintenance exist and are likely to continue to exist for the foreseeable future.

<sup>4</sup> Nature Protection Act 1991. Act. No. 1991-11.

Special Area of Conservation (SAC) and Special Protected Area (SPA) through the following legislative instruments:

- Designation of Special Area of Conservation (Southern Waters of Gibraltar) Order 2012;
- Designation of Special Protected Areas Order 2011

### **1.3 The Precautionary Principle**

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The advice contained in this document is underpinned by the Precautionary Principle. This principle was first adopted under the Rio Declaration, soon became integrated in other legally binding treaties and has become a statutory requirement of European Law.

The Precautionary Principle states that *"if an action or policy has a suspected risk of causing harm to the public or to the environment, in the absence of scientific consensus that the action or policy is not harmful, the burden of proof that it is not harmful falls on those taking the action"*<sup>5</sup>.

This implies that the precautionary principle should apply to all environmental risks, and evaluated to determine that, where there are real risks to the environment, lack of scientific knowledge should not be the reason to defer measures that will prevent damage to the environment. It should also consider the economic factors of applying measures, including environmental costs and benefits.

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<sup>5</sup> [https://en.wikipedia.org/wiki/Precautionary\\_principle](https://en.wikipedia.org/wiki/Precautionary_principle)

## 1.4 Nature Conservancy Council

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The role of the Nature Conservancy Council (NCC) is outlined in the Nature Protection Act. The current NCC was constituted on the 4<sup>th</sup> July 2013<sup>6</sup>. It consists of five suitably qualified or experienced persons who provide advice to MOE on all matters of nature conservation, including the administration of habitats and other natural areas. It also advises HMGOG in connection with the issue of any permit or license that may affect the conservation status or management of the terrestrial or marine environment.

## 2. Background to Conservation Objectives

### 2.1 Requirements of Conservation Objectives

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The Habitats Directive requires under Article 6.3 that in each area designated, the necessary measures with regard to conservation objectives be pursued. It also states that an appropriate assessment must be made of any plan or programme likely to have a significant effect on the conservation objectives of a site that has been designated.

*Conservation Objectives* means a series of measures required to maintain or restore the natural habitats and the populations of species of wild fauna and flora at a favourable conservation status.

According to Article 4(4) of Directive 92/43/EEC “*once a site of Community importance has been adopted in accordance with the procedure laid down in paragraph 2, the Member State concerned shall designate that site as a special area of conservation as soon as possible and within six years at most, establishing priorities in the light of the importance of the sites for the maintenance or restoration, at a favourable conservation status, of a natural habitat type in Annex I or a species in Annex II and for the coherence of Natura*

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<sup>6</sup> Nature Protection (Nature Conservancy Council) Regulations 2013. LN. 2013/098

*2000, and in the light of the threats of degradation or destruction to which those sites are exposed'.*

This was attained by Gibraltar with the publication of the Southern Waters Management Scheme for the SCI, which was revised in 2017. Appropriate statutory, administrative and contractual measures are included in the plan which correspond to the ecological requirements of the natural habitat types in Annex I and the species in Annex II present on the sites, as stipulated in Article 6.1. The plan also takes into account appropriate steps to avoid the deterioration of natural habitats and species, as well as disturbance of the species in accordance with Article 6.2. Likewise, it consolidated the requirements under the Birds Directive that sought to take into account special measures in relation to specific species listed in Annex I of the Directive and regularly occurring migratory species that are subject to special conservation measures.

The conservation objectives at the site level must have full regard to:

- The ecological requirements of the species & habitat types listed in the Natura 2000 Standard Data Form (i.e. present on the site, except for those whose presence is non-significant according to the SDF).
- The local, regional and national conservation status of the habitats and species.
- The overall coherence of the Natura 2000 network.
- Higher-level conservation objectives at national/biogeographical level and the contribution of the site to them.

## **2.2 Favourable Conservation Status**

Favourable Conservation Status (FCS) applies to habitats and species. *Conservation Status* of natural habitats means the sum influences acting on a natural habitat and its typical species that may affect its long-term natural

distribution, structure and functions, as well as the long-term survival of its typical species within the territory, referred to in Article 2.

The conservation status of a natural habitat is favourable when:

- Its natural range and the areas it covers within that range are stable or increasing, and;
- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and;
- Conservation status of typical species is favourable as defined in Article I.

*Conservation Status* of a species means the sum of the influences acting on the species concerned that may affect the long-term natural distribution and abundance of its populations within the territory referred to in Article 2.

The conservation status of a species will be taken as 'favourable' when:

- Population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and;
- The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and;
- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

However, the general objective of achieving FCS for all species and Habitat types listed in Annex I and II of the Habitats Directive needs to be translated into site-level conservation objectives that define the condition to be achieved by species and habitat types within the respective site, in order to maximise the contribution of the site to achieving FCS at national, biogeographical or European level.

Therefore, identifying the contribution a particular site helps the Member State achieve FCS for the species and habitats present on the site and provides the basis for setting conservation objectives. In this respect, priorities must be established for the maintenance and restoration of a FCS of the species and habitat types of Community interest, in light of threats of degradation or destruction to which the site may be exposed.

## **2.3 Conservation Measures**

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Conservation measures are mechanisms and actions put in place for the Natura 2000 site, to achieve the site's conservation objectives. These must respond to the ecological requirements of the natural habitat types in Annex I and species in Annex II present on the site. Measures may not be site specific and can be applied within or outside the boundaries of a particular site, for example to maintain or enhance connectivity between sites. Further information on the conservation measures adopted can be found in the Gibraltar Marine Reserve Management Plan 2017.

## **3. Qualifying Marine Habitats**

Two listed marine habitat types have been identified for the Southern Waters of Gibraltar namely Reefs (EU code 1170) and Submerged or partially submerged sea caves (EU code 8330).

### **3.1. Reefs.**

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According to the EU's Habitats Interpretation Manual (2017), '*Reefs can be either biogenic concretions or of geogenic origin. They are hard compact substrata on solid and soft bottoms, which arise from the sea floor in the sublittoral and littoral zone. Reefs may support a zonation of benthic communities of algae and animal species as well as concretions and corallogenic concretions*'. In addition to the definition provided, the aforementioned manual lists typical animal and plant species assemblages or



specific species associated with reef habitat in the Western Mediterranean. These include but are not limited to:

**Animals:** *Cirripedia* (barnacles), hydroids, bryozoans, ascidians, sponges, gorgonians and polychaetes as well as diverse mobile species of crustaceans and fish.

*Dendropoma petraeum* reefs (forming boulders) or in relation with the red calcareous algae *Spongites* spp or *Lithophyllum lichenoides*; *Filigrana implexa* formations; Gorgonians communities: Facies of holoaxonia gorgonians (*Paramuricea clavata* “forest”, *Eunicella singularis* “forest”), mixed facies of gorgonians (*Eunicella* spp, *P. clavata*, *E. paraplexauroides*, *Leptogorgia* spp); Facies of *Isidella elongata* and *Callogorgia verticillata*; Facies of scleroaxonia gorgonians (*Corallium rubrum*); Madreporarians communities: *Cladocora caespitosa* reefs, *Astroides calycularis* facies. Madreporarians communities: *Dendrophyllia ramea* community (banks); *Dendrophyllia cornigera* community (banks); white corals communities (banks): *Madrepora oculata* and *Lophelia pertusa* community (banks).

**Plants:** *Cystoseira*/*Sargassum* beds with a mixture of other red algae (*Gelidiales*, *Ceramiales*), brown algae (*Dictyotales*) and green algae (*Siphonales*, *Siphonocladales*).

The Southern Waters of Gibraltar are punctuated with natural and artificial reefs (figure 1) containing some of the communities listed under the definition of reefs especially Gorgonian communities (e.g. *Paramuricea clavata* and *Eunicella singularis* ‘forests’), *Astroides calycularis* and *Lithophyllum lichenoides* facies. *Cystoseira* spp. beds are also found in some intertidal areas of the Southern Waters SAC/SPA.

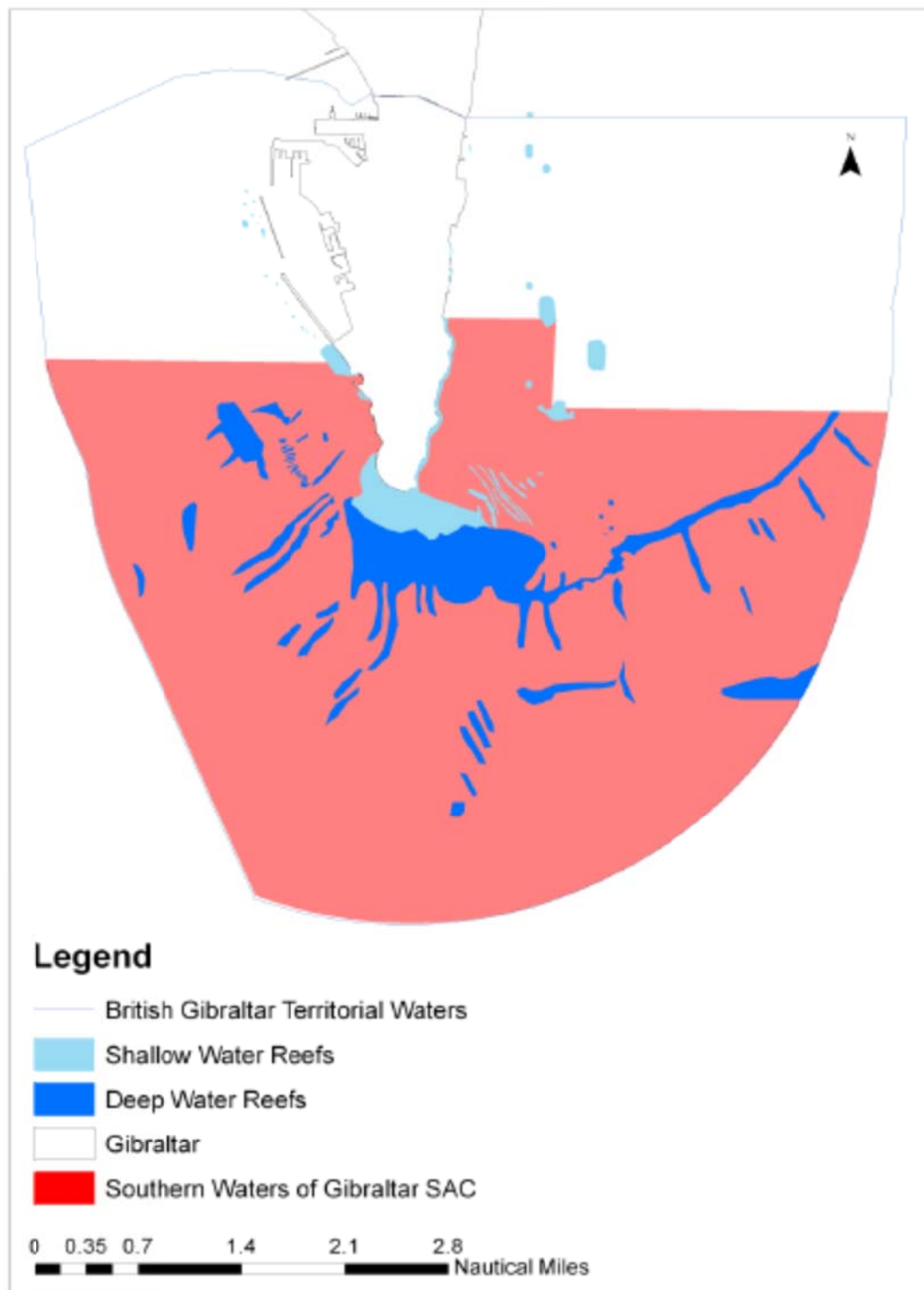
Consistent with the definition, the reefs found in the Southern Waters SAC/SPA also support a diverse variety mobile species such as fish, molluscs, echinoderms and crustaceans. Typical fish species found are White Seabream (*Diplodus sargus*), Common Two-banded Seabream (*Diplodus vulgaris*),

Salema Porgy (*Sarpa salpa*), Black Scorpionfish (*Scorpaena porcus*), Moray Eel (*Muraena helena*), Conger Eel (*Conger conger*), Cardinal Fish (*Apogon imberbis*), Swallowtail Seaperch (*Anthias anthias*), Greater Forkbeard (*Phycis phycis*), Dusky Grouper (*Epinephelus marginatus*) and Ornate Wrasse (*Thalassoma pavo*). Some of the more common, rare and endangered molluscs and gastropods found are the Common and Lesser Octopus (*Octopus vulgaris* and *Eledone cirrhosa*), Common Cuttlefish (*Sepia officinalis*), Noble and Rough Pen Shells (*Pinna nobilis* and *Pinna rudis*), Date Mussel (*Lithophaga lithophaga*), *Charonia lampas lampas* and various Nudibranch species including *Babakina anadoni* and *Roboastra europaea*. Echinoderm species such as the Long-spined Sea Urchin (*Centrostephanus longispinus*) can also be found as well as numerous Crustaceans notably the European Spider Crab (*Maja squinado*).

One of the most significant rocky outcrops is Europa Reef. This lies immediately south of Europa Point and extends from the shoreline to over 400m. The reef is an extension of one of a series of marine terraces. Europa foreshore remains above sea-level as a raised beach/intertidal habitat but the reef was submerged after the last ice-age. Closer inshore, the reef is generally fairly shallow, from 2–10m deep and extends to over 50m depth in the southern sections in an area known locally as 'the peaks'. Strong currents and rip tides continuously affect the area. The position of Europa Reef at the entrance to the Bay and Strait of Gibraltar makes this area a hotspot for marine life that converges on the reef for food and shelter. Europa Reef has therefore long been a popular area for ecological research. There are numerous other reefs found in the Southern Waters such as the Seven Sisters Reef which is further North within the Rosia Marine Conservation Zone. This reef is particularly important given that some of the highest levels of marine invertebrate biodiversity have been recorded here. Other notable reefs include Governor's Beach Reef, Sandy Bay Reef, Vladi's Reef, Eastern Beach Reef and Two-Mile Reef along with other prominent rocky outcrops (e.g. Weaver's Pinnacle and Pete's Pinnacle) that are well-known marine biodiversity hotspots.

Intertidal reef habitats are also very common in the Southern Waters although they have a relatively narrow range due to the small tidal amplitude of the Straits of Gibraltar and Mediterranean Sea generally. This rarely exceeds 1m with the exception of spring tides. However, this narrow strip of habitat is still extremely important and supports a wide variety of marine organisms including protected species as the Mediterranean Ribbed Limpet (*Patella ferruginea*), *Cymbula safiana*, *Cystoseira spp.*, Date mussels (*Lithophaga lithophaga*) and *Lithophyllum spp.* amongst other species which were considered in determining the appropriate Conservation Objectives for this interest feature. Particular attention is drawn to the Mediterranean Ribbed Limpet in view that the sub-populations found within the Bay of Gibraltar, including the Southern Waters of Gibraltar, are the largest remnant populations of this critically endangered species in the entirety of the Iberian Peninsula.

Figure 1. Prominent reef habitats within the Southern Waters of Gibraltar SAC/SPA.



### **3.2. Submerged or partially submerged sea caves.**

The EC's Habitats Interpretation Manual (2013)<sup>7</sup> describes this habitat as '*Caves situated under the sea or opened to it, at least at high tide, including partially submerged sea caves. Their bottom and sides harbour communities of marine invertebrates and algae.*'

Sea caves are characterised by high levels of individuality and heterogeneity which, coupled with a poor understanding of ecosystem functioning, make it difficult to assess their ecological quality. However, a number of indicators of quality have been recently suggested for the marine cave ecosystems such as (1) the presence of invertebrates offering three-dimensional complexity to the substrate, particularly fragile slow-growing species (2) high spatial coverage of suspension feeders and large filter feeders (3) presence of large mysid swarms and (4) presence of various omnivorous and carnivorous mobile species such as fish and decapods (Gubbay *et al.*, 2016)<sup>8</sup>

Submerged and partially-submerged sea caves are found in a stretch of approximately 4.5 km of coastline in the Southern Waters of Gibraltar. Sea caves in the region support an array of marine life adapted to the progressively diminishing amount of light. Sciaphilic flora, which prefer shaded zones, disappear and the cave walls making up this habitat are colonised with, for example, sponges, anthozoans, bryozoans and decapods. These organisms eventually disappear as the environmental conditions found deep within submerged sea caves only allow for the most highly specialised marine species to survive (Garcia-Gomez, 2015)<sup>9</sup>. Key locations for submerged sea caves within the Southern Waters of Gibraltar include Europa Reef, Vladi's Reef and

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<sup>7</sup> Interpretation Manual of European Union Habitats, version EUR 28. 2013. DG Environment. European Commission.

<sup>8</sup> Gubbay, S. Sanders, N., Haynes, T., Janssen, J.A.M., Rodwell, J.R., Nieto, A., *et al.*, 2016. European Red List of Habitats. Part 1. Marine Habitats. European Union.

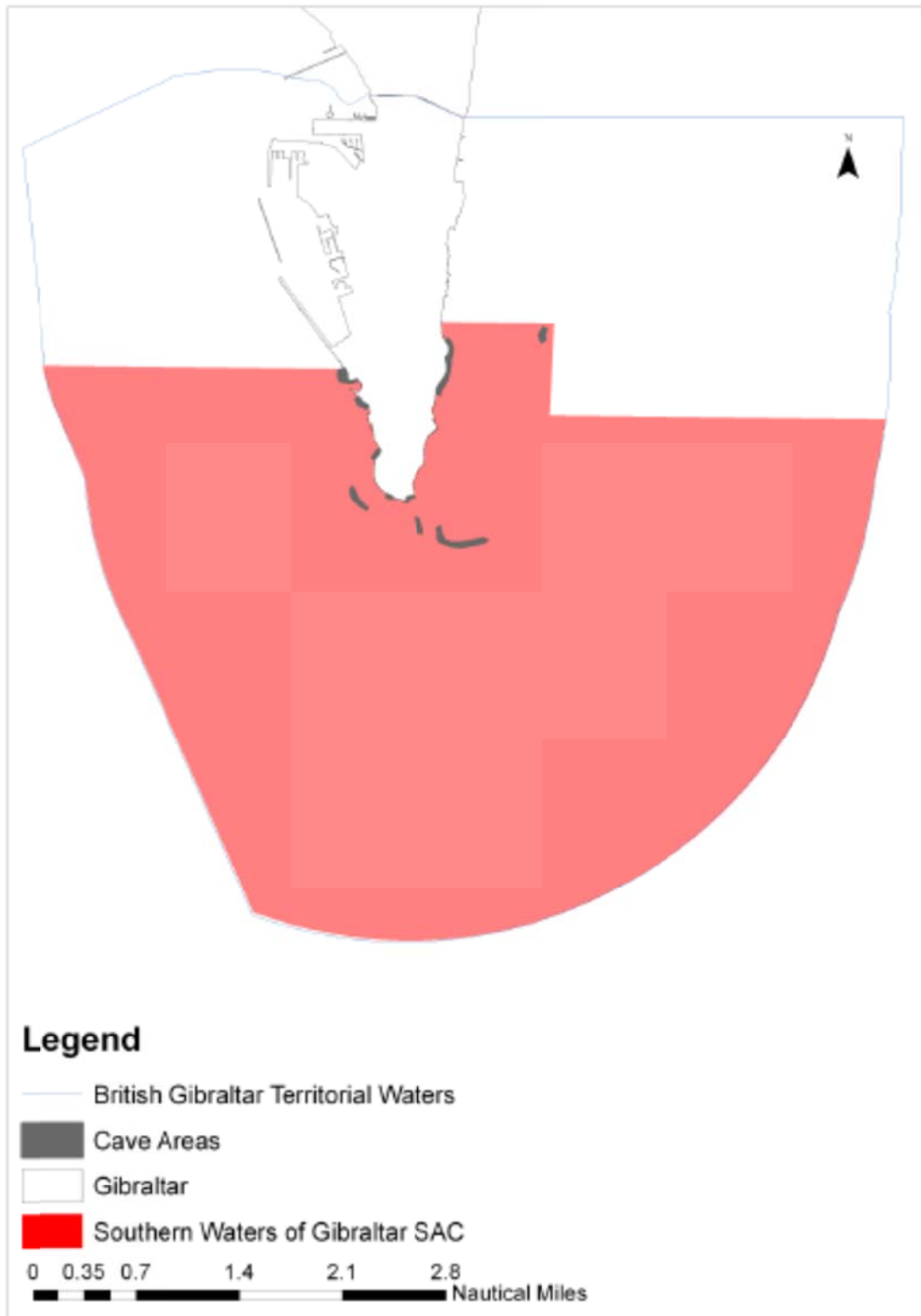
<sup>9</sup> Garcia-Gomez, J.C. A guide on environmental monitoring of rocky seabeds in Mediterranean Marine Protected Areas and surrounding zones. 2015.RAC/SPA – UNEP/MAP.

also along the Eastside, particularly beyond the 30m isobaths where numerous rocky reef outcrops are found.

Given the difficulty of surveying sea caves in the Southern Waters, data on species assemblages found within this habitat type, particularly in deep water sea caves, are limited at present although research continues to take place. Some characteristic species found to date in this habitat type include Orange Coral (*Astroides calcycularis*), Sunset Cup Coral (*Leptopsammia pruvoti*), *Dendrophyllia ramea*, Gorgonians (e.g. *Paramuricea clavata*), *Parazoanthus axinellae*, Date mussels (*Lithophaga lithophaga*), Cardinal fish (*Apogon imberbis*), Spiny Lobster (*Palinurus elephas*), European Lobster (*Homarus gammarus*) and the Mediterranean Slipper Lobster (*Scyllarides latus*).

In addition, partially submerged sea caves also provide habitat for a number of seabird species that utilise cave ledges as nesting sites. These include Mediterranean Shags (*Phalacrocorax aristotelis desmarestii*), Pallid Swifts (*Apus pallidus*) and wintering Crag Martins (*Ptyonoprogne rupestris*). European Free-tailed Bats (*Tadaroda teniotis*) also use this habitat.

Figure 2. Location of known partially submerged and submerged sea caves in the Southern Waters of Gibraltar SAC/SPA.



## 4. Qualifying Marine Species

Two species listed in Annex II of the Habitats Directive have a significant presence in the Southern Waters of Gibraltar namely the Bottlenose Dolphin (*Tursiops truncatus*) and Loggerhead Turtle (*Caretta caretta*).

### 4.1. Bottlenose Dolphin (*Tursiops truncatus*)

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Bottlenose Dolphins have a significant presence in the Southern Waters SAC/SPA, particularly during the Spring and Summer, when they use the marine reserve and the Bay of Gibraltar generally, as a breeding and feeding ground (Shaw, 1998)<sup>10</sup>. Latest data collected during photo ID surveys reveal that approximately 30 individuals are regularly observed in the Bay (MMIRC, 2017)<sup>11</sup> although exact numbers could be as high as 90 and over 400 in the wider Straits of Gibraltar based on other studies carried out. Typical prey species in the Southern Waters include benthic fish such as the European Conger (*Conger conger*), European Squid (*Loligo vulgaris*), Common Octopus (*Octopus vulgaris*), Horse Mackerel (*Trachurus spp.*) and crustaceans.

Monthly cetacean and marine reptile surveys are carried out in the Southern Waters SAC/SPA by scientists from the Department of the Environment, Heritage and Climate Change together with the Marine Mammal Information Research and Conservation (MMIRC) Group. These surveys include collecting Photo ID data that are being used to better understand the abundance and ecology of Bottlenose Dolphins in the Southern Waters SAC/SPA and adjacent marine areas.

#### 5.1.2. Other Cetaceans

Other Cetaceans listed under Annex IV also have a significant presence in the Southern Waters SAC/SPA notably the Common Dolphin (*Delphinus delphis*)

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<sup>10</sup> Shaw, E. 1998. Dolphins in the Bay of Gibraltar. Almoraima, 19: pp. 161-71.

<sup>11</sup> Marine Mammal Information Research and Conservation. 2017. Interim report for the Department of the Environment, Heritage and Climate Change. HM Government of Gibraltar.



and Striped Dolphin (*Stenella coeruleoalba*). These species breed and feed in the Bay of Gibraltar. About 390 Common Dolphins are known to be regularly present in the Bay and Southern Waters SAC/SPA although the number of resident and transient individuals recorded in the wider Straits area exceeds 1800. The current estimate of Striped Dolphins in the Bay and Southern Waters SAC/SPA is approximately 90 individuals although exact numbers are believed to be significantly higher, especially if transient individuals are also included (MMIRC, 2017)<sup>12</sup>.

Whales are also frequently recorded in the Southern Waters SAC/SPA. These include Fin Whales (*Balaenoptera physalus*) and Minke Whales (*Balaenoptera acutorostrata*) which use the Southern Waters SAC/SPA as a migratory corridor. More recently, Humpback Whales (*Megaptera novaeangliae*) are also being recorded every year. In addition, Sperm Whales (*Physeter macrocephalus*) and Pilot Whales (*Globicephala melas* and *Grampus griseus*) are also found in the Strait of Gibraltar. They can be observed feeding in the Southern Waters SAC/SPA particularly during the Spring and Summer months. Finally Killer Whales (*Orcinus orca*) are also observed in the Straits during the Summer months, including the Southern Waters SAC/SPA, when they feed on Bluefin tuna (*Thunnus thynnus*) migrating into the Atlantic from the Mediterranean Sea.

#### **4.2. Loggerhead turtle (*Caretta caretta*)**

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Loggerhead turtles are observed all year round in the Southern Waters SAC/SPA, particularly during the Summer months as highlighted by stranding and visual census data collected by the Department of the Environment, Heritage and Climate Change. An approximation of the number of Loggerhead turtles feeding and/or migrating through the Southern Waters SAC/SPA is difficult to determine although numbers are considered to be significant. In 2017 alone, over 30 individuals were observed and 5 stranded animals

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<sup>12</sup> Marine Mammal Information Research and Conservation. 2017. Interim report for the Department of the Environment, Heritage and Climate Change. HM Government of Gibraltar.

collected for analysis. Exact numbers are believed to be much higher given that the Southern Waters SAC/SPA forms part of the main Loggerhead turtle migration route.

The Southern Waters SAC/SPA, together with other sites in the far Western Mediterranean are believed to be important 're-fuelling' zones where turtles take advantage of the seasonal abundance of food resources typically associated with upwellings that characterise the Straits and adjacent Alboran region. Juveniles and sub-adult turtles in particular are regularly seen feeding and resting in the marine protected area.

The species seems to behave as an opportunist feeding upon prey species according to their availability and abundance (Casale & Margaritoulis, 2010)<sup>13</sup>. However, Ocaña *et al.*, (2005)<sup>14</sup> reported that in Summer, Loggerhead turtles feed almost exclusively on the crab *Polybius henslowii*, coinciding with the season in which this species form blooms in the Straits of Gibraltar.

## 5. Birds

Approximately 300 million birds pass through the Straits each year in each direction hence the reason why the Southern Waters SAC/SPA, along with the wider Straits of Gibraltar, have been identified as an Important Bird Area (IBA). One of the more unique seabird species found breeding within the Southern Waters of Gibraltar SAC/SPA is the subspecies of Mediterranean Shag (*Phalacrocorax aristotelis desmarestii*), with the Gibraltarian population being one of the few remaining populations in the Iberian Peninsula.

The Southern Waters are an important feeding ground for a vast number of migratory birds passing through the Straits including the threatened Balearic Shearwater (*Puffinus mauretanicus*) and Audouin's Gull (*Larus audouinii*).

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<sup>13</sup> Casale, P., and Margaritoulis, D. (eds.). (2010). Sea Turtles in the Mediterranean: Distribution, Threats and Conservation Priorities. Gland: IUCN.

<sup>14</sup> Ocaña, O., De los Ríos y los Huertos, A.G., Brito, A., 2005. The crab *Polybius henslowii* as a main resource in the loggerhead turtle (*Caretta caretta*) diet from North Africa. Revista de la Academia Canaria de ciencias XVII(4), 103-116.

Scopoli's Shearwaters (*Calonectris diomedea*) regularly forage in the Southern Waters of Gibraltar during its breeding season, with other species, such as Gannets (*Sula bassana*) and Sandwich Terns (*Thalasseus sandvicensis*), utilising the nutrient-rich waters during the Winter season. Many of the seabirds recorded within the Southern Waters are listed under the EU Birds Directive and are therefore afforded high levels of conservation protection.

## 6. Conservation Objectives

General conservation objectives for the Southern Waters of Gibraltar SAC/SPA are:

- Maintain and restore the site's specific ecological functions, biodiversity and natural dynamics;
- Maintain and/or restore at *Favourable Conservation Status* habitat types 1170 (Reefs) and 8330 (Submerged or partially submerged sea caves) together with their characteristic and endangered ecological communities and species;
- Maintain and/or restore *Favourable Conservation Status* for those species with a significant presence in the Southern Waters of Gibraltar listed under Annex II and Annex IV of the Habitats Directive, including their natural habitats, specifically *Tursiops truncatus*, *Delphinus delphis*, *Stenella coeruleoalba*, *Caretta caretta* and *Patella ferruginea*.
- Maintain and/or restore *Favourable Conservation Status* for species listed under Annex I of the Birds Directive which are resident and breeding in the Southern Waters of Gibraltar, notably *Phalacrocorax aristotelis desmarestii*.
- Help maintain and/or restore *Favourable Conservation Status* for regularly occurring migratory birds listed under Annex I of the Birds Directive, including but not limited to, *Puffinus mauretanicus*, *Larus audouinii*, *Sterna sandvicensis*, *Phalacrocorax carbo sinesis* and *Calonectris diomedea* and *Calonectris borealis*.

More specific conservation objectives for the different interest features found in the Southern Waters of Gibraltar, which includes Annex IV species with a

significant presence, are provided in the preceding sub-sections. These will be refined as our understanding of the different interest features continues to improve as a result of the ongoing Monitoring Programmes carried out in compliance with the Water Framework, Marine Strategy Framework and Habitats Directives.

## **6.1. Reefs**

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Three main types or sub-classes of reef habitat can presently be distinguished within the Southern Waters of Gibraltar SAC/SPA namely:

- i) Reefs in the form of midlittoral rocky habitat along the coastline of the Southern Waters;
- ii) Reefs in the form of infralittoral rocky outcrops;
- iii) Reefs in the form of deep water (100m+) rocky outcrops. There are currently limited data available for this habitat sub-class.

The typical reef assemblages found in each sub-class are considered separately for the purposes of establishing specific and measurable Conservation Objectives.

Specific Conservation Objectives for reefs:

1. Ensure that the characteristic morpho- and hydro-dynamic attributes of reefs in the Southern Waters, shaped by tidal currents and the inflow of Atlantic (less saline) surface water, are maintained;
2. Ensure that chemical and physico-chemical water quality is classified as *Good* and does not exceed the relevant Environmental Quality Standards stipulated under the Water Framework Directive for Coastal waters;
3. Maintain the existing physical area and structure of reef habitats in the Southern Waters, subject to natural processes, ensuring there is no reduction in reef extent or alteration to reef structures.

- This is currently estimated to be 5.7km<sup>2</sup>. Reference should be made to the latest high-resolution bathymetrical data available to determine reef habitat extent.

4. (a) Maintain and restore, where relevant, the typical communities and sensitive species found in midlittoral, infralittoral and deep water rocky reefs associated with *Good Environmental Conditions*, as well as;

(b) Ensure that the natural distribution patterns and population dynamics of typical communities and sensitive species associated with *Good Environmental Conditions* are not affected with specific reference, but not limited to:

i. Midlittoral rocky reef assemblages/indicator species such as **Macroalgae:** *Cystoseira tamariscifolia*, *Lithophyllum byssoides*, *Fucus spiralis*, *Gelidium corneum* and *Halopteris filicina*; **Molluscs:** *Dendropoma petraeum* *Lithophaga lithophaga*, *Charonia lampas lampas*, *Patella ferruginea* and *Cymbula safiana*;

ii. Infralittoral rocky reef assemblages/indicator species such as **Cnidarians/Anthozoans:** Facies of Gorgonians; (*Paramuricea clavata* “forests”, *Eunicella singularis* ‘forests’); Mixed facies of Gorgonians (*Eunicella* spp, *P. clavata*, *Ellisella paraplexauroides*, *Leptogorgia* spp); Facies of *Astroides calcycularis*; *Dendrophyllia ramea*, *Leptopsammia pruvoti* and *Parazoanthus axinella*. **Bryozoans:** *Myriapora truncata* **Sponges:** *Spongia agaricina*, *Crambe crambe*. **Ascidians:** *Aplidium conicum*, *Aplidium elegans*. **Macroalgae:** Class *Phaeophyceae*. **Molluscs:** *Lithophaga lithophaga* and *Charonia lampas lampas*. **Echinoderms:** *Centrostephanus longispinus*, *Ophidiaster ophidianus*. **Fishes:** *Apogon imberbis*, *Anthias anthias*, *Epinephelus marginatus*, *Thalassoma Pavo* and *Phycis phycis*. **Crustaceans:** *Maja squinado*, *Homarus gammarus* and *Palinurus elephas*.

- iii. Deep water rocky reef assemblages/indicator species such as *Dendrophyllia cornigera*, Black corals (*Antipatharia spp.*), *Ellisella paraplexauroides*, *Paramuricea clavata*, *Centrostephanus longispinus*, *Gracilechinus acutus*, etc.

## **6.2. Submerged or partially submerged sea caves**

This habitat type is divided into two sub-classes for the purposes of establishing the necessary Conservation Objectives. Most of the objectives are similar to those for reefs given that both habitat types are closely associated. Sub-classes include:

- i) Completely submerged sea caves. There are currently limited data available for this habitat sub-class;
- ii) Partially submerged sea caves along the coastline.

Specific conservation objectives for both sub-classes are as follows:

1. Ensure that the characteristic morpho- and hydro-dynamic attributes of sea caves in the Southern Waters, shaped by tidal currents and the inflow of Atlantic (less saline) surface water, are maintained;
2. Ensure that chemical and physico-chemical water quality is classified as *Good* and does not exceed the relevant Environmental Quality Standards stipulated under the Water Framework Directive for Coastal waters;
3. Maintain the existing physical area and structure of submerged and partially submerged sea cave habitats in the Southern Waters, subject to natural processes, ensuring there is no reduction in cave extent or alteration to cave structures.

4. (a) Maintain and restore, where relevant, the typical communities and sensitive species found in (i) submerged and (ii) partially submerged sea caves associated with *Good Environmental Conditions*, as well as;

(b) Ensure that the natural distribution patterns and population dynamics of typical communities and sensitive species associated with *Good Environmental Conditions* are not affected with specific reference, but not limited to:

i. **Macroalgae:** *Lithophyllum spp.* **Cnidarians/Anthozoans:** Facies of Gorgonians; (*Paramuricea clavata* “forests”, *Eunicella singularis* ‘forests’); Mixed facies of Gorgonians (*Eunicella spp.*, *P. clavata*, *Ellisella paraplexauroides*, *Leptogorgia spp.*); Facies of *Astroides calcycularis*; *Leptopsammia pruvoti*, *Dendrophyllia ramea*, *Parazoanthus axinellae*. **Crinozoa:** *Antedon mediterranea* **Sponges:** *Halyclona mediterranea*, *Petrosia ficiformis*, *Clathrina coriacea*, *Axinella damicornis*, *Ircinia spp.* and *Chondrosia reniformis*. **Ascidians:** *Pseudistoma oscurum*, *Polycitor adriaticum*, *Stolonica socialis*, *Ciona intestinalis*, *Phallusia fumigata*, *Aplidium elegans* and *Didemnum spp.* **Molluscs:** *Lithophaga lithophaga*, **Fish:** *Epinephelus marginatus*, *Apogon imberbis*, *Phycis Phycis* and *Sciaena umbra* **Crustaceans:** *Palinurus elephas*, *Homarus gammarus* and *Scyllarides latus*. **Polychaeta:** *Filigrana implexa*.

ii. In the case of partially submerged sea caves, the breeding or roosting (where applicable) numbers of the following bird and bat species must also be maintained at *Favourable Conservation Status* subject to natural processes:

- Mediterranean Shag (*Phalacrocorax aristotelis desmarestii*);
- Crag Martins (*Ptyonoprogne rupestris*);
- Pallid Swifts (*Apus pallidus*);
- European Free-tailed Bats (*Tadaroda teniotis*).

### **6.3. Bottlenose Dolphin (*Tursiops truncatus*) and Annex IV listed Cetaceans that are regularly present.**

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The Conservation Objectives described below should be interpreted in consideration of the following characteristics and boundaries which may affect performance targets:

- Bottlenose Dolphins, along with some of their prey, are highly mobile species and will not be exclusively dependent on the Southern Waters SAC/SPA;
- British Gibraltar Territorial Waters currently extend out to 3nm and are subjected to transboundary influences.

The following specific Conservation Objectives for Bottlenose Dolphins can currently be formulated for the Southern Waters, including adjacent and inter-related sites within British Gibraltar Territorial Waters, based on latest data available. These specific objectives are also applicable to Annex IV Cetacean species with a significant presence in the Southern Waters SAC/SPA namely the Common Dolphin (*Delphinus delphis*) and Striped Dolphin (*Stenella coeruleoalba*).

1. Maintain the quantitative status of the Bottlenose Dolphin (i.e. absolute abundance, distribution and population structure within and outside the Southern Waters SAC/SPA), taking into account natural population dynamics and supporting natural population trends, to ensure that:
  - i. The species is maintaining itself on a long-term basis as a viable component of its natural habitats and;
  - ii. The species range is neither being reduced nor is likely to be reduced for the foreseeable future.
2. Maintain the ecological quality (i.e. structure and function) and extent of



feeding habitat and migration areas for Bottlenose Dolphins;

3. Ensure that contaminant levels associated with human activity found in coastal water and/or Bottlenose dolphin tissue samples are reduced or maintained below levels that may cause physiological damage, immune or reproductive system suppression;
4. Maintain or restore the spatial and temporal distribution patterns, age-class distribution and population densities of prey species for Bottlenose Dolphins taking into account natural fluctuations (e.g. *Conger conger*, *Octopus vulgaris*, *Pagellus bograveo*, *Loligo vulgaris*, *Trachurus spp.* *Cepola macrophthlana*, *Cheilopogon heterurus*, *Belone belone*, etc.);
5. Ensure that contamination levels of potential prey species resident in the Southern Waters are reduced or maintained below concentrations that are potentially harmful to their physiological health;
6. Ensure that disturbance by human activity is below levels that have a significant impact on feeding and migratory patterns, reproductive success, physiological health and/or long-term trends in behaviour.

#### **6.4. Loggerhead turtle (*Caretta caretta*)**

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Given that Loggerhead turtles recorded within the Southern Waters SAC/SPA are predominantly feeding and/or migrating, these objectives should be considered in the context that British Gibraltar Territorial Waters are an important feeding and migration corridor for the species rather than a nesting location at present.

The following specific Conservation Objectives for Loggerhead turtles (*Caretta caretta*) can currently be formulated for the Southern Waters SAC/SPA, including adjacent and inter-related sites within British Gibraltar Territorial Waters based on latest data available:

1. Maintain the quantitative status of the Loggerhead turtle (i.e. absolute abundance, distribution and population structure within and outside the Southern Waters SAC/SPA), taking into account natural population dynamics and supporting natural population trends, to ensure that:
  - i. The species is maintaining itself on a long-term basis as a viable component of its natural habitats and;
  - ii. The species range is neither being reduced nor is likely to be reduced for the foreseeable future.
2. Maintain the ecological quality (i.e. structure and function) and extent of feeding habitat and migration areas for Loggerhead turtles;
3. Ensure that contaminant levels associated with human activity found in coastal water are reduced or maintained below levels that may cause physiological damage, immune or reproductive system suppression;
4. Maintain or restore the spatial and temporal distribution patterns and population densities of prey species for Loggerhead turtles taking into account natural fluctuations;
5. Ensure that contamination levels of potential prey species resident in the Southern Waters are reduced or maintained below concentrations that are potentially harmful to their physiological health;
6. Ensure that disturbance by human activity is below levels that have a significant impact on feeding and migratory patterns, physiological health and/or long-term trends in behaviour.

## **6.5. Mediterranean Ribbed Limpet (*Patella ferruginea*)**

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1. Maintain and improve the genetic diversity and quantitative status of *Patella ferruginea* within and outside the Southern Waters SAC/SPA (i.e. absolute abundance, distribution and population structure), taking into account natural population dynamics, connectivity and supporting natural population trends, to ensure that:
  - i. The species is maintaining itself on a long-term basis as a viable component of its natural habitats and;
  - ii. The species range is neither being reduced nor is likely to be reduced for the foreseeable future.
2. Maintain and improve the ecological quality (i.e. structure and function) and extent of intertidal habitat for *Patella ferruginea*. Particular attention should be drawn to any new developments within and outside of the Southern Waters SAC/SPA to ensure that newly created artificial habitats are both suitable for *P. ferruginea* and adequately protected to increase survival rates;
3. Ensure that contaminant levels associated with human activity found in coastal water and/or *Patella spp.* tissue samples are reduced or maintained below levels that may cause physiological damage, immune or reproductive system suppression.