

Marine Mammals

1.1 Introduction

This report aims at fulfilling the requirements of the EU Marine Strategy Framework Directive (MSFD) in terms of Article 8 (1) and associated Annex III, in describing the population and assessing the status of marine mammals (or cetaceans) occurring in Malta based on existing data to date.

Published literature^{1,2,3} indicates that scientific research on cetaceans in Malta was launched in 1996-97 with the onset of marine and aerial surveys conducted year round. Nevertheless, published information with respect to cetacean distribution and abundance in Malta is very limited. As a consequence, this report is mainly based on cetacean sightings reported by Non-Governmental Organisations, as well as the general public. This data was supplemented by scientific data from published literature (when available) in an attempt to provide a wider overview of current knowledge on the local populations of cetaceans to the extent possible.

The information available, however, limits the extent to which cetacean populations can be assessed in terms of the criteria and indicators stipulated by the MSFD Commission Decision 2010/477/EU.

1.1.1 General Description – Mediterranean Region

Twenty one species of cetaceans have been recorded in the Mediterranean region in various degrees of abundance⁴. Eight species are represented by resident populations⁵, while the rest of the recorded species occur occasionally and/or are stragglers represented by vagrant individuals from the North Atlantic or Red Sea populations. Table 1 lists the species recorded in the Mediterranean region with some notes on their occurrence and highlighting those species of which presence in Malta has been confirmed.

¹ Vella, A. 1998. Cetacean Surveys around the Maltese Islands & Malta's sea-user cetacean questionnaire study. In: Evans, P.G.H & Parsons, E.C.M. (eds) Proceedings of the twelfth annual conference of the European Cetacean Society, Monaco, 20-24 January 1998. *European Research on Cetaceans*. **12**: 66-73

² Vella, A. 2000. Cetacean Research and Conservation around the Maltese Islands. In: *Monitoring and conservation of Birds, Mammals and sea turtles of the Mediterranean and Black Seas*. Yesou, P., Sultana, J. & Beaubrum, P. (eds) Proceedings of the 5th MEDMARAVIS Symposium, Gozo, Malta, 29 September-30 October 1998. Environment Protection Department, Malta.

³ Vella, A. 2000. Cetacean Conservation Research and Action around the Maltese Islands (Central and Southern Mediterranean Sea). In: Topfer, K. (ed). *ACCOBAMS Bulletin* Issue No 3. pp 24-26

⁴ Notarbartolo di Sciara 2002a. Cetacean species occurring in the Mediterranean and Black Seas. In: Notarbartolo di Sciara, G. (Ed.), *Cetaceans of the Mediterranean and Black Seas: state of knowledge and conservation strategies*. A report to the ACCOBAMS Secretariat, Monaco, February 2002. Section 3, 17 p.

⁵ Notarbartolo di Sciara, G. 2002. Cetacean species occurring in the Mediterranean and Black Seas. In: G. Notarbartolo di Sciara (Ed.), *Cetaceans of the Mediterranean and Black Seas: state of knowledge and conservation strategies*. A report to the ACCOBAMS Secretariat, Monaco, February 2002. Section 3, 17 p.

Conservation efforts at a regional scale generally concentrate on the eight regularly occurring species listed below:

- Fin whale (*Balaenoptera physalus*);
- Sperm whale (*Physeter macrocephalus*);
- Cuvier's beaked whale (*Ziphius cavirostris*);
- Long-finned pilot whale (*Globicephala melas*);
- Risso's dolphin (*Grampus griseus*);
- Common bottlenose dolphin (*Tursiops truncatus*);
- Striped dolphin (*Stenella coeruleoalba*);
- Short-beaked common dolphin (*Delphinus delphis*)

In particular, the sperm whale, the common bottlenose dolphin and the short-beaked common dolphin have been singled out as "priority species" by ACCOBAMS⁶, in view of special concerns with respect to their conservation status⁷.

⁶ ACCOBAMS refers to the 'Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic area'.

⁷ A fourth species, the harbour porpoise *Phocoena phocoena*, constitutes a population found in the Black Sea, sporadically occurring in the Northern Aegean Sea, and is thus not being listed for the purposes of this report.

Table 1: Cetacean species occurring, or known to have occurred, in the Mediterranean Sea, as adapted from Notarbartolo di Sciara (2002)⁸ and Notarbartolo di Sciara (2002)⁹.

Scientific name	English name	Maltese name	Notes
<i>Balaenoptera acutorostrata</i>	Minke whale	Balienu ta' geddumha ppuntat	Occurs occasionally in the Mediterranean Sea.
<i>Balaenoptera borealis</i>	Sei whale	Balienu tan-nofsinar	Very rare occurrences in the Mediterranean Sea.
<i>Balaenoptera physalus</i>	Fin whale	Balienu mbaċċa	Confirmed in Malta.
<i>Delphinus delphis</i>	Short-beaked common dolphin	Delfin komuni	Confirmed in Malta.
<i>Eubalaena glacialis</i>	North Atlantic right whale		Very rare, historical reports from the Mediterranean Sea
<i>Globicephala melas</i>	Long-finned pilot whale	Balienu sewda	Confirmed in Malta.
<i>Grampus griseus</i>	Risso's dolphin	Delfin griż	Confirmed in Malta.
<i>Hyperoodon ampullatus</i>	Northern bottlenose whale		A few sightings reported in the Alborán Sea
<i>Kogia sima</i>	Dwarf sperm whale	Balienu mniehra ċatt	One individual found stranded in the Mediterranean (coast of Tuscany, Italy)
<i>Megaptera novaeangliae</i>	Humpback whale	Balienu tal-ġwienah kbar	Very rare occurrences in the Mediterranean Sea.
<i>Mesoplodon bidens</i>	Sowerby's beaked whale	Balienu ta' Sowerby	Possible rare occurrences in the Mediterranean Sea.
<i>Mesoplodon densirostris</i>	Blainville's beaked whale	Balienu ta' Blainville	Very rare occurrences in the Mediterranean Sea.
<i>Orcinus orca</i>	Killer whale	Orka	Occurs occasionally in the Mediterranean Sea. Possible, unconfirmed sighting from Malta.
<i>Phocoena phocoena</i>	Harbour porpoise	Delfin iswed; delfin bla geddum	Occurrences in the Northern Aegean Sea reported. Uncertain historical records of this species in Malta include: Gulia (1859 ¹⁰ ;1890 ¹¹) describes this species as being quite frequent in Maltese ports; Despott (1921) ¹² describes a black whale stranded at Birzebbugia in July 1913.
<i>Physeter macrocephalus</i>	Sperm whale	Gabdoll	Confirmed in Malta.
<i>Pseudorca crassidens</i>	False killer whale	Pseudorka	Occurs occasionally in the Mediterranean Sea. Recorded once in Malta by Lanfranco (1969) ¹³ who recounts of a specimen taken in July 1955 and sold as bait the day after
<i>Sousa plumbea</i>	Indian humpback dolphin	Delfin tal-Baħar l-Aħmar	Known to stray occasionally into the Mediterranean from the Red Sea.
<i>Stenella coeruleoalba</i>	Striped dolphin	Stenella	Confirmed in Malta.
<i>Steno bredanensis</i>	Rough-toothed dolphin	Delfin tat-tikki	Occasional in the Mediterranean Sea; pod of c. 160 specimens sighted in waters adjacent to Malta ¹⁴ .
<i>Tursiops truncatus</i>	Common bottlenose dolphin	Delfin geddumu qasir	Confirmed in Malta
<i>Ziphius cavirostris</i>	Cuvier's beaked whale	Balienu ta' Kuvjer	Confirmed in Malta, through at least 2 strandings.

⁸ Notarbartolo di Sciara, G. 2002. Cetacean species occurring in the Mediterranean and Black Seas. In: Notarbartolo di Sciara, G. (Ed.), Cetaceans of the Mediterranean and Black Seas: state of knowledge and conservation strategies. A report to the ACCOBAMS Secretariat, Monaco, February 2002. Section 3, 17 p.

⁹ Notarbartolo di Sciara, G. 2002. Action Plan for the Conservation of Cetaceans in Maltese Waters – report praprede as Consultant to RAC/SPA (Contract n° 41/02) under the SAP/BIO framework, in cooperation with the Malta Environment and Planning Authority, Malta.

¹⁰ Gulia, G. 1859 *Repertorio di Storia Naturale*. Valletta.

¹¹ Gulia, G. 1890. "Elenco dei Mammiferi Maltesi". *Il Naturalista Maltese* (1):1:223

¹² Despott, G. 1921. *Dizzjunarju Enciklopediku*

¹³ Lanfranco, G. 1969. *Maltese Mammals in the Central Mediterranean*. Progress Press Co., Ltd., St. Paul's Str., Valletta.

¹⁴ Watkins W.A., Tyack P., Moore K.E. & Notarbartolo di Sciara, G. 1987. *Steno bredanensis* in the Mediterranean Sea. *Marine Mammal Science* 3(1):78-82.

1.1.2 General Description – National

All eight cetacean species regularly occurring in the Mediterranean region have also been recorded in the waters surrounding the Maltese Islands. Historic records of other species exist¹⁵ including records of the killer whale, (*Orcinus orca*)¹⁶, the false killer whale (*Pseudorca crassidens*)^{17,18} and the rough-toothed dolphin (*Steno bredanensis*)¹⁹. The occurrence of such a relatively high number of cetacean species in the marine waters surrounding the Maltese Islands could be partly attributed to the location of the archipelago in the centre of the Mediterranean, with Malta constituting part of the channel connecting the western and the eastern Mediterranean basins.

The MSFD Commission Staff Working Paper²⁰ defines four functional groups pertaining to marine mammals to be assessed for the purposes of the MSFD Initial Assessment, only two which are relevant to Malta: ‘Toothed Whales’ and ‘Baleen Whales’. The other two functional groups (Seals and Ice-Associated mammals) are not relevant, also in view of the fact that only historic and a single ‘dubious’ record of the monk seal (*Monachus monachus*) ‘near’ Malta exists.

The only species belonging to the ‘Baleen Whales’, the fin whale (*Balaenoptera physalus*), is only sporadically recorded in Malta. For this reason, the ‘Baleen whales’ functional group will not be considered any further in this report.

Species belonging to the ‘Toothed Whales’ functional group which have been recorded in Malta include the delphinids, the sperm whale (*Physeter macrocephalus*) and the Cuvier’s beaked whale (*Ziphius cavirostris*). Sightings and/or records of the sperm whale and Cuvier’s beaked whale in Malta are very rare, the latter to date only recorded through strandings. The same applies to the long-finned pilot whale (*Globicephala melas*) for which only a few records exist²¹.

The rare or infrequent records of such species in Malta could be attributed to their association with pelagic waters overlying deep slopes, which habitat types are generally located in offshore marine waters on which very limited knowledge or data is currently

¹⁵ Baldacchino A.E. & Schembri P.J. 2002. Amfibji, Rettili, u Mammiferi fil-Gżejjer Maltin. Publikazzjonijiet Indipendenza, Malta

¹⁶ Notarbartolo di Sciara, G. 1987. Killer whale, *Orcinus orca*, in the Mediterranean Sea. *Marine Mammal Science* **3**(4):356 - 360.

¹⁷ This species is considered a visitor in the Mediterranean as indicated in Notarbartolo di Sciara, G. & Barkun A., Jr. 2010 *Conserving Whales, dolphins and porpoises in the Mediterranean and Black Seas: an ACCOBAMS Status Report*, 2010. ACCOBAMS Monaco 212 p.

¹⁸ Lanfranco G., 1969, *Maltese Mammals in the Central Mediterranean*. Progress Press Co., Ltd., St. Paul’s Str., Valletta.

¹⁹ Watkins W.A.; Tyack P.; Moore K.E. & Notarbartolo di Sciara G. 1987. *Steno bredanensis* in the Mediterranean Sea. *Marine Mammal Science* **3**(1):78-82.

²⁰ European Commission 2011. Commission Staff Working Paper: Relationship between the initial assessment of marine waters and the criteria for good environmental status. SEC(2011)1255 final.

²¹ Di Sciara, G. & Barkun, A. 2010 indicate the distribution of *Globicephala melas* within the Western Mediterranean and contiguous Atlantic area, therefore this species may not be a regular species for the Central Mediterranean area

available. The beaked whales in particular show a marked preference for waters overlying submarine canyons. Based on the currently available data, these species are considered to be occasional or stragglers in Malta and are thus not considered to be representative of the 'Toothed Whales' functional group.

Risso's dolphin (*Grampus griseus*) is not as rare as the above-mentioned cetacean species and is in fact considered a regular species throughout the Mediterranean²². However, available records of the Risso's dolphin are not substantial enough to indicate resident populations in Malta.

Within this context, the 'Toothed Whales' functional group for Malta is deemed to be represented by the striped dolphin (*Stenella coeruleoalba*), the common dolphin (*Delphinus delphis*) and the bottlenose dolphin (*Tursiops truncatus*). These three species are relatively frequently reported in Malta and records available suggest that the presence of resident populations is highly likely.

This report will thus focus on a description of these three species and attempts the assessment of status of the 'Toothed Whales' Functional groups on the basis of the data available to date on these species.

The main and most recent data sets used in compiling this report pertain to sightings of these three species as collected by BirdLife Malta in 2007/2008 and 2012 as part of the EU LIFE Yelkouan Shearwater Project²³ and the EU LIFE+ Malta Seabird Project²⁴ respectively. Both datasets were collected systematically through observations from boat trips following specific transects perpendicular to the Maltese coast following the standard European Seabirds at Sea methodology (ESAS), a widely used census system for logging observations of seabirds and other animals at sea. Whereas the EU LIFE Yelkouan Shearwater Project had focussed on the area within 7NM of the Maltese coastline, the EU LIFE+ Malta Seabird Project has undergone transects within 25 nautical miles around the Maltese Islands.

This data provides some insight on the distribution and relative abundance of the species in question. No data is currently available with respect to population demographic characteristics, hence population condition.

²² Di Sciara, G. & Barkun A., Jr. 2010 Conserving Whales, dolphins and porpoises in the Mediterranean and Black Seas: an ACCOBAMS Status Report, 2010. ACCOBAMS Monaco 212 p.

²³ <http://www.lifeshhearwaterproject.org.mt>

²⁴ <http://www.birdlifemalta.org/Content/LIFEPROJECTS/maltaseabirdproject/1115/>

1.2 Relevant Legislation and/or Management Activities

Malta is committed to the conservation of cetaceans both nationally and internationally. This section outlines the main legislative tools or policies which include provisions targeted at protecting and/or conserving cetaceans and their habitats, and are thus of relevance to the implementation of the MSFD with regards to marine mammals.

Table 2 lists cetacean species as included in regional/international conventions.

1.2.1 EU legislation

EU Habitats Directive (92/43/EEC)

The Habitats Directive is the main European legislation targeting the conservation and protection of species of community interest listed in its annexes. It is also the main European legal framework for designating protected areas of European importance in the marine environment.

All species of cetaceans are listed in Annex IV of the Directive as strictly protected species. Such protection is also extended to cover their derivatives within all EU Member States. Member states need to take all the requisite measures to maintain the population of these species at a Favourable Conservation Status (FCS) and as specified in Article 12 deliberate disturbance of these species, 'particularly during the period of breeding, rearing, hibernation and migration' as well as the 'destruction and deterioration of breeding sites or resting places' are prohibited .

The bottlenose dolphin (*Tursiops truncatus*) is also included in Annex II of this Directive. The latter Annex lists species whose conservation requires the designation of Special Areas of Conservation (SACs), which would eventually form part of the Natura 2000 European Network of protected sites.

The EU Biodiversity Strategy 2020 aims at ensuring the successful implementation of the Habitats Directive and calls for the fulfilment of this Directive with a view to halt deterioration of the status of all species and habitats covered by the EU Nature legislation and to achieve a significant improvement of their status by 2020.

Malta transposed the Habitats Directive (92/43/EEC) into local legislation through Legal Notice 311 of 2006 (as amended).

Council Regulation (EC) 1967 of 2006, concerning management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea

Council Regulation (EC) 1967 of 2006 calls for sustainable exploitation of fishery resources in the Mediterranean Sea. Article 3 of this regulation crossrefers to the Habitats Directive (92/43/EEC) and prohibits deliberate catching, retention on board, transshipment or landing of protected species listed in Annex IV of the Habitats Directive.

Fishermen however may be authorised to land protected species subject to the provision that the retention on board, transshipment or landing of such incidentally caught specimens is necessary to secure assistance for the recovery of the individual animals, and provided that the competent national authorities concerned have been duly informed in advance.

1.2.2 Regional conventions and/or other international agreements.

Convention on Biological Diversity

The Convention on Biological Diversity (CBD) is a United Nations Environment Programme (UNEP) administered multilateral environment agreement targeted at the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising from the utilisation of genetic resources. The Convention calls on contracting parties to conserve biological diversity by establishing a system of protected areas or areas subject to special management measures targeted at the management of biological resources, protection of ecosystems, maintenance of viable populations of species and recovery of threatened species.

The CBD has also recently called for the identification of ecologically or biologically significant areas (EBSAs) in marine areas beyond national jurisdiction, based on scientific criteria as contained in Annex I to CBD Decision IX/20.

The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention)

The Council of Europe's Bern Convention, which covers most of the natural heritage of the European continent and extends to some States in Africa, aims at the conservation of European wild flora and fauna and their natural habitats, with a particular focus on the protection of endangered natural habitats and species, including migratory species, while promoting European co-operation in this field. The European Community is also a Contracting Party to the Bern Convention.

All cetacean species recorded in the Mediterranean are listed in Appendix II of the Bern Convention. Similar provisions as per the EU Habitats Directive apply, also in terms of a network of protected areas which in the case of the Bern convention is referred to as the Emerald Network. The latter is made up of 'Areas of Special Conservation Interest' (ASCIs).

The Convention on Migratory Species – CMS- The Bonn Convention

The Convention on the Conservation of Migratory Species of Wild Animals (also known as CMS or Bonn Convention) aims to conserve terrestrial, aquatic and avian migratory species throughout their range. It is an intergovernmental treaty, concluded under the

auspices of the United Nations Environment Programme, concerned with the conservation of wildlife and habitats on a global scale.

Migratory species threatened with extinction throughout all or a significant proportion of their range, are listed on **Appendix I** of the Convention. Parties should strive towards strictly protecting these species, conserving or restoring areas where they thrive, mitigating obstacles to migration and controlling other factors that might endanger them. The common dolphin and the fin whale, both recorded from Malta, are included in Appendix I.

Migratory species with an unfavourable conservation status that need or would significantly benefit from international co-operation organised by tailored agreements are listed in **Appendix II** of the Convention. For this reason, the Convention encourages the Range States to conclude global or regional Agreements. Appendix II lists 44 cetacean species.

In 2001, an Agreement on the Conservation of Cetaceans in the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS) entered into force under the auspices of the Bonn Convention on migratory species. This constitutes a cooperative tool for the conservation of marine biodiversity in the Mediterranean and Black Seas, and provides specialised attention to cetacean conservation in the region. It aims at reducing threats to cetaceans in the Mediterranean and Black Sea waters and at improving knowledge of these animals. ACCOBAMS is the first agreement binding countries in these subregions and enabling them to work together on a matter of general interest.

The Convention for the Protection of the Mediterranean Sea against Pollution (Barcelona Convention) and the Protocol for Specially Protected Areas and Biodiversity in the Mediterranean (SPA & Biodiversity Protocol)

Malta, as all the Mediterranean countries, is Party to the Barcelona Convention and to the Protocol concerning Specially Protected Areas and Biological Diversity (SPA and Biodiversity protocol) in the Mediterranean (Barcelona, 1995). Amongst other matters, the Barcelona Convention targets the protection of Mediterranean cetaceans (Genoa Declaration, September 1985). Mediterranean species of cetaceans are listed as endangered or threatened species in Annex II of the SPA and Biodiversity protocol. This protocol stipulates the need to establish protected areas [SPAs - Specially Protected Areas and SPAMIs - Specially Protected Areas of Mediterranean Importance] and to undertake actions to protect and where possible restore, these areas. SPAMIs can also be designated in high seas and between parties.

The Regional Centre for Specially Protected Areas (RAC/SPA) has issued a series of action plans and guidelines targeted at the implementation of the SPA and Biodiversity Protocol. Of particular relevance is the 'Action Plan for the Conservation of Cetaceans in the Mediterranean Sea'.

RAC/SPA has also supported a number of conferences and seminars on cetaceans like the Annual European Cetacean Society Conferences, the European Seminars on Marine Mammals: Biology and conservation and the conference on Cetacean Conservation in Southern Mediterranean Countries. Although the action plans and guidelines are not legally binding, they set priorities and activities to be undertaken by the contracting parties. They call for co-ordination of efforts between states of the region to ensure conservation and sustainable management of the concerned species in the Mediterranean.

The Convention on International Trade in Endangered Species of Wild of Flora and Fauna- [CITES]

CITES - the Convention on International Trade in Endangered Species, is an international agreement aimed at preventing international trade from threatening the survival of wild animals and plants, through international co-operation. Levels of exploitation of some animal and plant species are high and the trade in them, together with other factors, such as habitat loss, is capable of heavily depleting their populations and even bringing some species close to extinction.

The Convention establishes an international legal framework setting common procedural mechanisms to be applied by the Contracting Parties. The European Union however, through the issue of Council Regulation 338 of 1997, has established stricter rules. CITES affords varying degrees of protection to more than 30,000 species of animals and plants, whether they are traded as live specimens or their derivatives.

Cetaceans are listed in Appendix 1 of this convention (annex A of the EU Council Regulation) and hence are strictly protected.

Table 2: Cetacean species recorded in Malta as listed in regional/international conventions. All cetacean species are listed in Annex I of the ACCOBAMS Agreement and Annex IV of the EU Habitats Directive.

Scientific name	English/Common Name	Listing in regional /international conventions
<i>Balaenoptera physalus</i>	Fin whale	App II -Bern Convention; App I & II - Bonn Convention; App I CITES; Ann II SPA/BD Protocol (Barcelona Convention)
<i>Delphinus delphis</i>	Short-beaked common dolphin	App I -Bern Convention; App I (Mediterranean) & II (North & Baltic sea, Mediterranean, Eastern Tropical Pacific)- Bonn Convention; App II CITES; Ann II SPA/BD Protocol (Barcelona Convention)
<i>Globicephala melas</i>	Long-finned pilot whale	App I -Bern Convention; App II - Bonn Convention (North & Baltic sea); App II CITES; Ann II SPA/BD Protocol (Barcelona Convention)
<i>Grampus griseus</i>	Risso's dolphin	App I -Bern Convention; App II - Bonn Convention(North & Baltic sea); App II CITES; Ann II SPA/BD Protocol (Barcelona Convention)
<i>Physeter macrocephalus</i>	Sperm whale	App II -Bern Convention; App I & II - Bonn Convention; App I CITES; Ann II SPA/BD Protocol (Barcelona Convention)
<i>Stenella coeruleoalba</i>	Striped dolphin	App I -Bern Convention; App II - Bonn Convention (Eastern Tropical Pacific, Mediterranean); App II CITES; Ann II SPA/BD Protocol (Barcelona Convention)
<i>Tursiops truncatus</i>	Common bottlenose dolphin	App I -Bern Convention; App II - Bonn Convention (North & Baltic sea, Western Mediterranean); App II CITES; Annex II - EU Habitats Directive; Ann II SPA/BD Protocol (Barcelona Convention)
<i>Ziphius cavirostris</i>	Cuvier's beaked whale	App I -Bern Convention; App II CITES; Ann II SPA/BD Protocol (Barcelona Convention)

1.2.3 National legislation

The Marine Mammals Protection Regulations (Legal Notice 203 of 2003) provide protection to the 19 species of cetaceans as listed in Annex I of ACCOBAMS. These regulations state that *“No person shall directly or indirectly pursue, take or attempt to take, maltreat or attempt to maltreat, kill or attempt to kill, possess, sell by any method, buy exchange, import or export any species, or any part or derivative of such species, listed in the schedules of these regulations”*. Furthermore, any marine mammal accidentally caught by fishermen and landed at the fish market has to be released immediately or, if not possible, surrendered immediately to the Director of Fisheries.

1.2.5 Other conservation initiatives

EU Life + Project Migrate (LIFE11 NAT/MT/1070)

This project is currently ongoing and is expected to be completed in 2016. The project will enable studies to be carried out on the status of the population of the bottlenose dolphin and the common dolphin (together with the loggerhead turtle) in Malta.

1.3 Common bottlenose dolphin – *Tursiops truncatus*

1.3.1 Distribution

Tursiops truncatus is a widely distributed species, which in the Mediterranean region is represented by a 'sub-population' genetically differentiated from the population in the Atlantic Ocean²⁵. This species occurs throughout most of the Mediterranean region and appears to be scattered into small units, with significant genetic differences among contiguous populations²⁶. Groups inhabiting smaller areas within the Mediterranean region may thus represent separate subpopulations²⁷. Although it is generally associated with coastal or inshore waters, it occurs in both shallow and deep waters and is occasionally reported in offshore waters deeper than 2000m²⁸. It is generally encountered in small groups composed of less than ten individuals in coastal waters, with a mean size of 35 individuals for offshore groups^{29,30}.

Data pertaining to the distribution of this species in Malta is limited. The currently available data as collected by BirdLife Malta for 2007/2008 and 2012 as part of the EU LIFE Yelkouan Shearwater Project³¹ and the EU LIFE+ Malta Seabird Project³² respectively is shown in Figure 1 and Figure 2. The 2012 data implies that this dolphin is more common off the Northern and Northeastern coasts of Malta and seems to be more common in spring. However these observations would need to be verified through long-term monitoring.

Other published data on past sightings of *Tursiops truncatus* is summarised in Table 3.

²⁵ Bearzi, G., Fortuna, C. & Reeves, R. 2012. *Tursiops truncatus* (Mediterranean subpopulation). In: IUCN 2013. IUCN Red List of Threatened Species. Version 2013.1. <www.iucnredlist.org>.

²⁶ Bearzi, G. & Fortuna, C.M. 2006. Common Bottlenose Dolphin (*Tursiops truncatus*) Mediterranean subpopulation. In: Reeves R.R. & Notarbartolo di Sciara G. (compilers and editors). The status and distribution of cetaceans in the Black Sea and Mediterranean Sea. IUCN Centre for Mediterranean Cooperation, Malaga, Spain.

²⁷ Bearzi, G. & Fortuna, C.M. 2006. Common Bottlenose Dolphin (*Tursiops truncatus*) Mediterranean subpopulation. In: Reeves R.R. & Notarbartolo di Sciara G. (compilers and editors). The status and distribution of cetaceans in the Black Sea and Mediterranean Sea. IUCN Centre for Mediterranean Cooperation, Malaga, Spain.

²⁸ Bearzi, G.; Fortuna, C.M. & Reeves, R.R. 2008. Ecology and Conservation of common bottlenose dolphins *Tursiops truncatus* in the Mediterranean Sea. *Mammal Rev.* **39** (2): 92-123

²⁹ Bearzi, G.; Fortuna, C.M. & Reeves, R.R. 2008. Ecology and Conservation of common bottlenose dolphins *Tursiops truncatus* in the Mediterranean Sea. *Mammal Rev.* **39** (2): 92-123

³⁰ Bearzi, G. & Fortuna, C.M. 2006. Common Bottlenose Dolphin (*Tursiops truncatus*) Mediterranean subpopulation. In: Reeves R.R. & Notarbartolo di Sciara G. (compilers and editors). The status and distribution of cetaceans in the Black Sea and Mediterranean Sea. IUCN Centre for Mediterranean Cooperation, Malaga, Spain.

³¹ <http://www.lifeshhearwaterproject.org.mt>

³² <http://www.birdlifemalta.org/Content/LIFEPROJECTS/maltaseabirdproject/1115/>

Figure 1: Sightings of *Tursiops truncatus* – 2007/2008. Data collected by BirdLife Malta as part of the EU LIFE Yelkouan Shearwater Project

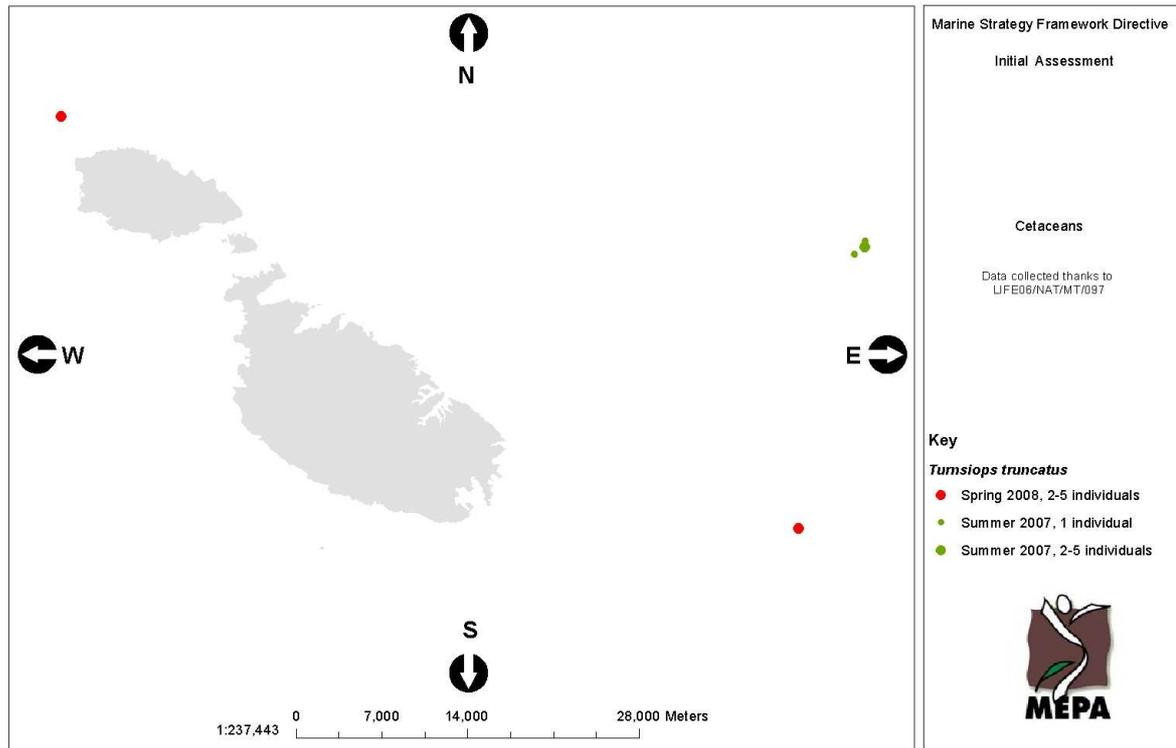


Figure 2: Sightings of *Tursiops truncatus* – 2012. Data collected by BirdLife Malta as part of the EU LIFE+ Malta Seabird Project.

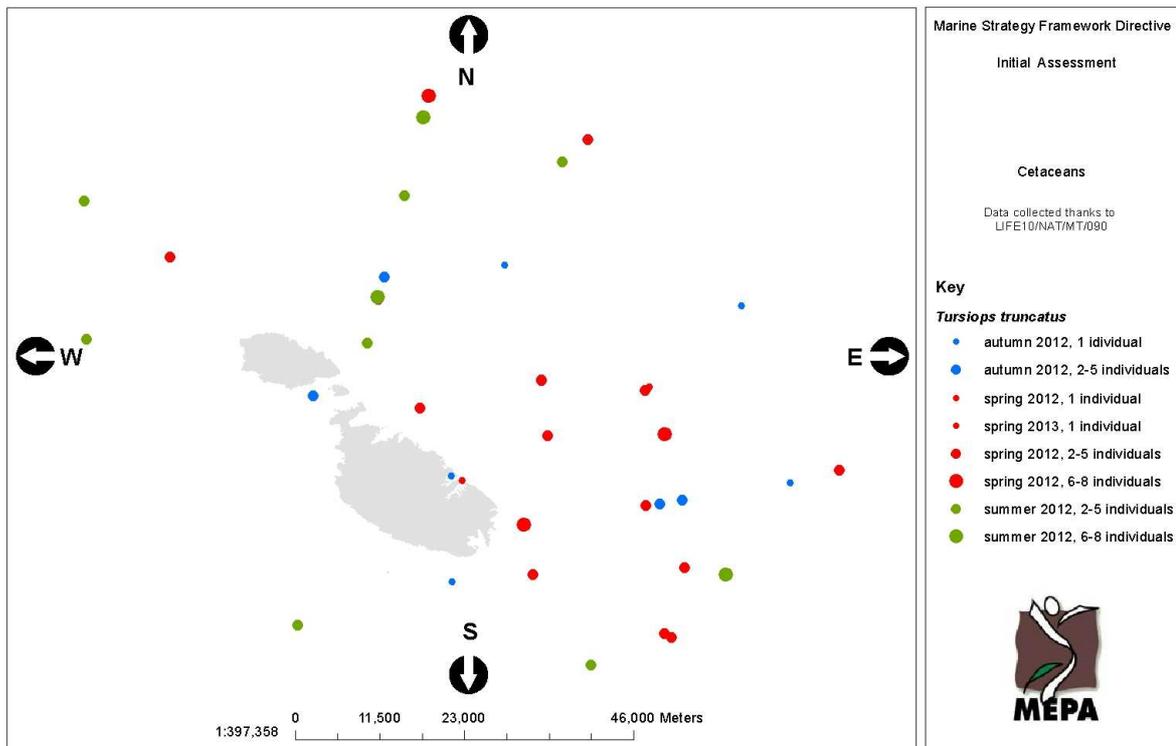


Table 3: Published data on past sightings of *Tursiops truncatus*³³

Date	Number	Observer	Indication of location of sighting
1880	1	Montagu	
1969	1	Guido Lanfranco	
March 1982	1	Society for the Study and Conservation of Nature (NGO)	Dockyard Creek
March 1982	1	Society for the Study and Conservation of Nature (NGO)	Dockyard Creek
August 1982	15	Society for the Study and Conservation of Nature (NGO)	In the vicinity of Capo Passero (Sicily)
July 1984	2	Society for the Study and Conservation of Nature (NGO)	Dwejra (Gozo)
June 1985	1	Society for the Study and Conservation of Nature (NGO)	Qawra
August 1980	30-40 with juveniles	Greenpeace	In the vicinity of Comino
February 1991	3 with juveniles	Greenpeace	2 miles off Notheastern Malta
August 1995	21	Marine Life Care Group (NGO)	Gozo-Comino channel
March 1996	6	Marine Life Care Group (NGO)	Gozo-Comino channel
April 1996	2	Marine Life Care Group (NGO)	In the vicinity of Ponta tal-Munxar (Northeastern Malta)
May 1996	3	Marine Life Care Group (NGO)	Xrobb I-Għaġin
May 1996	3	Marine Life Care Group (NGO)	In the vicinity of Ponta tal-Munxar (Northeastern Malta)
June 1996	2	Marine Life Care Group (NGO)	Off Qbajjar, Marsalforn
August 1996	4	Marine Life Care Group (NGO)	Off Qbajjar, Marsalforn
August 1996	5	Marine Life Care Group (NGO)	Off Qbajjar, Marsalforn
October 1996	6	Marine Life Care Group (NGO)	2km off il-Ponta tal-Munxar (Northeastern Malta)

³³ Baldacchino A. E. & Schembri P.J. 2002. Amfibji, Rettili, u Mammiferi. Sensiela Kullana Kulturali- Pubblikazzjoni Indipendenza- PIN.

1.3.2 Population Size

There is no basin-wide abundance estimate for the Mediterranean bottlenose dolphin, however there are absolute or relative abundance estimates for specific areas within the Mediterranean region³⁴. Based on the current data, the population of the bottlenose dolphin is unlikely to exceed 10,000³⁵. Data from long-term studies in the North Adriatic shows a decline by >50 % over the past 50 years, largely as a consequence of historical killing, followed by habitat degradation and overfishing³⁶.

Vella (1998)³⁷ estimated the number of *Tursiops truncatus* on the basis of 20 random line transects around the Maltese Islands surveyed by boat and by aircraft between June and November 1997. These transects covered a total distance of 2,780km, with a total observation time of 130 hours. Throughout this survey, 9 pods of *Tursiops truncatus* ranging between 2-12 individuals were encountered. Based on the boat surveys the author estimated a density of 0.25 dolphins/km² with a mean school size of 6.1 and a total estimate of 695 dolphins in the surveyed area; on the basis of the aerial surveys a density of 0.1789 individuals/km² was estimated, with a mean school size of 8.3 and a total estimate of 811 dolphins in the same area. The area surveyed is not indicated in the publication, as a result of which the data cannot be extrapolated to reflect abundance at a national scale.

On the basis of the most recent sightings data as collected by BirdLife Malta, a total of 126 individuals have been sighted in 2012 in pods of a maximum 8 individuals. This implies a much lower abundance than that estimated in the above-mentioned publications. However, long-term studies would be required to estimate the population abundance of this species in Malta.

³⁴ Bearzi, G. & Fortuna, C.M. 2006. Common Bottlenose Dolphin (*Tursiops truncatus*) Mediterranean subpopulation. In: Reeves R.R. & Notarbartolo di Sciara G. (compilers and editors). The status and distribution of cetaceans in the Black Sea and Mediterranean Sea. IUCN Centre for Mediterranean Cooperation, Malaga, Spain.

³⁵ Bearzi, G.; Fortuna, C.M. & Reeves, R.R. 2008. Ecology and Conservation of common bottlenose dolphins *Tursiops truncatus* in the Mediterranean Sea. *Mammal Rev.* **39** (2): 92-123

³⁶ Bearzi, G. & Fortuna, C.M. 2006. Common Bottlenose Dolphin (*Tursiops truncatus*) Mediterranean subpopulation. In: Reeves R.R. & Notarbartolo di Sciara G. (compilers and editors). The status and distribution of cetaceans in the Black Sea and Mediterranean Sea. IUCN Centre for Mediterranean Cooperation, Malaga, Spain.

³⁷ Vella, A. 1998. Cetacean Surveys around the Maltese Islands & Maltese sea-user cetacean questionnaire study. In: Evans, P.G.H & Parsons, E.C.M. (eds) Proceedings of the twelfth annual conference of the European Cetacean Society, Monaco, 20-24 January 1998. *European Research on Cetaceans.* **12**: 66-73

1.4 The Common dolphin – *Delphinus delphis*

1.4.1 Distribution

Delphinus delphis is a widely distributed species, which until recently was one of the most common dolphins in the Mediterranean region, where it is deemed to form a distinct subpopulation. Recent genetic studies indicate a significant level of divergence between the Mediterranean and the Atlantic populations, with genetic exchange potentially limited to the Alboran sea populations³⁸.

D. delphis is known to occur in both coastal and offshore waters of the Mediterranean Sea, however the distributional pattern and movements of offshore populations are poorly known³⁹. Coastal populations on the other hand seem to show high site fidelity⁴⁰. This species is typically encountered in groups of 50-70 individuals, with larger groups occasionally recorded⁴¹.

Currently, this species is known to occur abundantly in the Alboran sea, with relatively sparse sightings in other Mediterranean areas. Such sparse sightings are recorded off the coast of Algeria, Sardinia and Corsica, in the South-eastern Tyrrhenian sea, off the island of Ischia, portions of the eastern Ionian Sea, the Strait of Sicily and around Malta⁴². This species seems to have disappeared from the Adriatic Sea, Balearic Sea, the Provençal Basin and the Ligurian Sea⁴³.

At a local scale, sightings data of *Delphinus delphis* collected by BirdLife Malta for 2007/2008 and 2012 as part of the EU LIFE Yelkouan Shearwater Project⁴⁴ and the EU LIFE+ Malta Seabird Project⁴⁵ respectively, imply that sightings of this species in Malta are not infrequent (Figure 3 and Figure 4). While most of the groups sighted ranged between 1-12 individuals, two groups constituting 25 and 30 individuals were reported on two separate occasions in 2012. Vella (1998)⁴⁶ also reported 3 encounters of

³⁸ Bearzi, G. 2003. Assessment Short-beaked Common Dolphin (*Delphinus delphis*) (Mediterranean subpopulation). In: In: Reeves R.R. & Notarbartolo di Sciara G. (compilers and editors). The status and distribution of cetaceans in the Black Sea and Mediterranean Sea. IUCN Centre for Mediterranean Cooperation, Malaga, Spain.

³⁹ Notarbartolo di Sciara, G. 2002. Cetacean species occurring in the Mediterranean and Black Seas. In: Notarbartolo di Sciara, G. (Ed.), Cetaceans of the Mediterranean and Black Seas: state of knowledge and conservation strategies. A report to the ACCOBAMS Secretariat, Monaco, February 2002. Section 3, 17 p.

⁴⁰ Bearzi G. 2003. *Delphinus delphis* (Mediterranean subpopulation). In: IUCN 2013. IUCN Red List of Threatened Species Version 2013.1. <www.iucnredlist.org>

⁴¹ Bearzi, G. 2003. Assessment Short-beaked Common Dolphin (*Delphinus delphis*) (Mediterranean subpopulation). In: In: Reeves R.R. & Notarbartolo di Sciara G. (compilers and editors). The status and distribution of cetaceans in the Black Sea and Mediterranean Sea. IUCN Centre for Mediterranean Cooperation, Malaga, Spain.

⁴² Bearzi (2003), quoting Vella (in press), states that larger groups of this species are observed around Malta.

⁴³ Bearzi, G. 2003. Assessment Short-beaked Common Dolphin (*Delphinus delphis*) (Mediterranean subpopulation). In: In: Reeves R.R. & Notarbartolo di Sciara G. (compilers and editors). The status and distribution of cetaceans in the Black Sea and Mediterranean Sea. IUCN Centre for Mediterranean Cooperation, Malaga, Spain.

⁴⁴ <http://www.lifeshhearwaterproject.org.mt>

⁴⁵ <http://www.birdlifemalta.org/Content/LIFEPROJECTS/maltaseabirdproject/1115/>

⁴⁶ Vella, A. 1998. Cetacean Surveys around the Maltese Islands & Malta's sea-user cetacean questionnaire study. In: Evans, P.G.H & Parsons, E.C.M. (eds) Proceedings of the twelfth annual conference of the European Cetacean Society, Monaco, 20-24 January 1998. *European Research on Cetaceans*. **12**: 66-73

Delphinus delphis, of which group size ranged between 2 – 20 individuals during a survey carried out between June and November 1997. Other published sightings of this species are reproduced in **Table 1**.

The 2007/2008 and 2012 data provide two snapshots of the potential distribution of this species in Malta. This data is too limited to enable elucidation of spatial or seasonal patterns, which would need to be verified through long-term monitoring. However, Vella (2005)⁴⁷, on the basis of research carried out using boats and aircraft in the period between 1997 and 2003, indicates that common dolphins in marine waters surrounding the Maltese Islands show a marked increase in group sizes and abundance during the September-October period. The author also states that the distribution of sightings indicates the preference of this species for deep and offshore waters, except during the summer and autumn months, when these dolphins are found closer to the shore. Vella (2005)⁴⁸ postulates that the Maltese Islands may either be positioned in the middle of the travel path of the common dolphins during these months or may be situated at an important location for the species during the summer/autumn period of the year. Actual sightings recorded during this survey are not available.

⁴⁷ Vella, A. 2005. Common Dolphins (*Delphinus delphis*) status in the Central and Southern Mediterranean around the Maltese Islands. In: Stockin, K.; Vella, A. & Evans P.G.H (eds) Proceedings of the Workshop on Common Dolphins: Current Research, threats and issues held at the European Cetacean Society 18th Annual Conference, Sweden, 2004. *European Cetacean Society Newsletter* 45 (Special Issue): 8-16pp.

⁴⁸ Vella, A. 2005. Common Dolphins (*Delphinus delphis*) status in the Central and Southern Mediterranean around the Maltese Islands. In: Stockin, K.; Vella, A. & Evans P.G.H (eds) Proceedings of the Workshop on Common Dolphins: Current Research, threats and issues held at the European Cetacean Society 18th Annual Conference, Sweden, 2004. *European Cetacean Society Newsletter* 45 (Special Issue): 8-16pp.

Figure 3: Sightings of *Delphinus delphis* - 2007/2008. Data collected by BirdLife Malta as part of the EU LIFE Yelkouan Shearwater Project

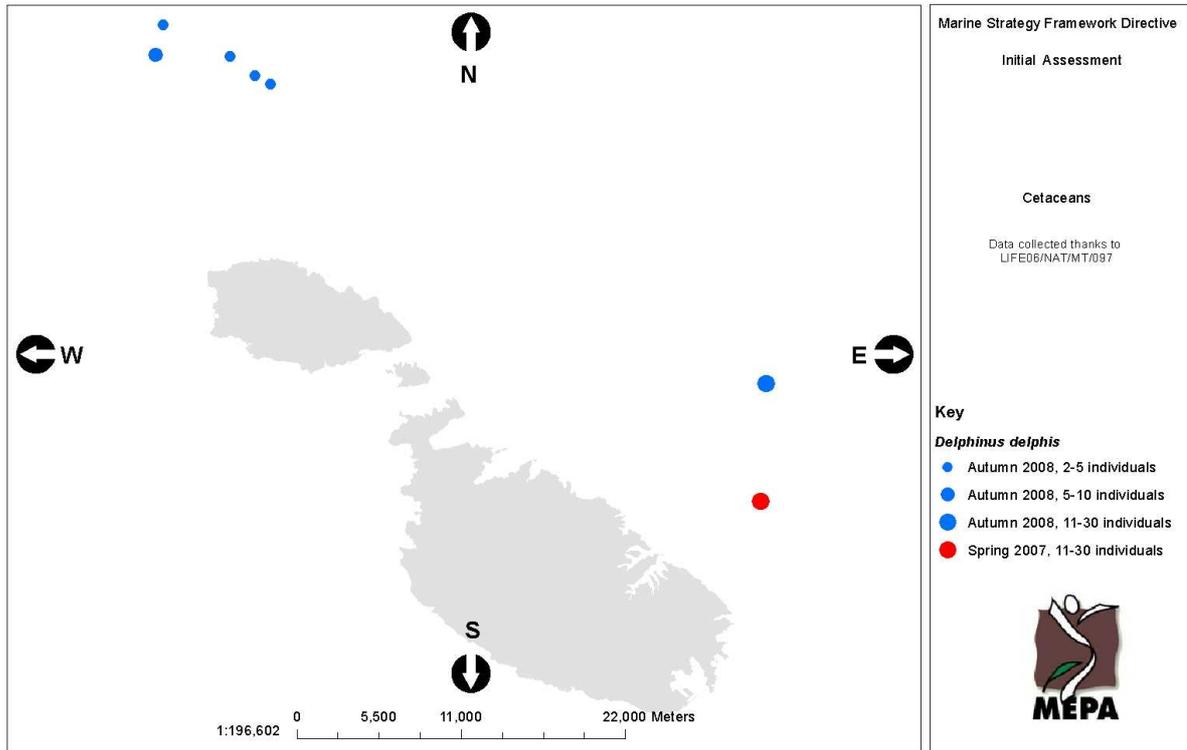


Figure 4: Sightings of *Delphinus delphis* – 2012. Data collected by BirdLife Malta as part of the EU LIFE+ Malta Seabird Project

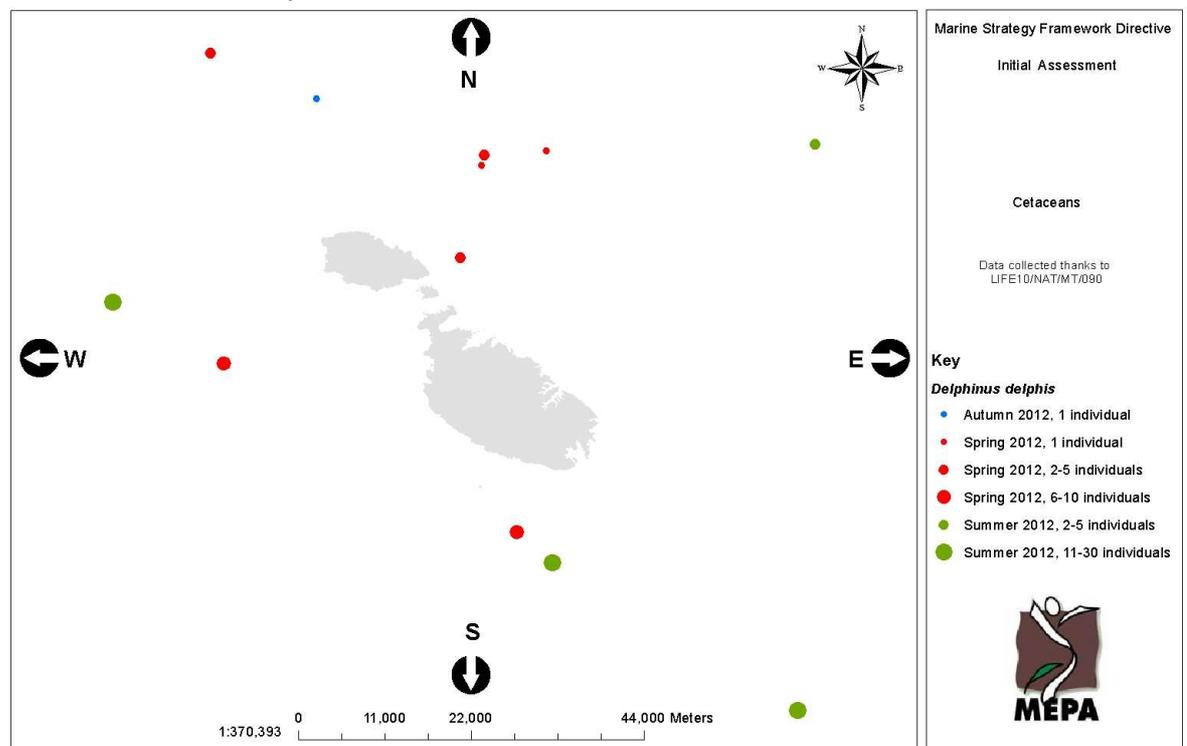


Table 4: Published data on past sightings of *Delphinus delphis*⁴⁹

Date	Number	Observer	Indication of location of sighting
1861	1	Tallack	
1890	1	Gavino Gulia	
1913	1	Gavino Gulia	
1969	1	Guido Lanfranco	
October 1978	1	Society for the Study and Conservation of Nature (NGO)	Marsamxett Harbour
July 1979	1		Dockyard Creek
August 1979	20		Mellieħa Bay
August 1979	1		Malta-Gozo channel
August 1980	1		Marsa menqa
July 1981	1		Off Xghajra
August 1982	4		off Grand Harbour (Northeastern)
August 1982	5		off Grand Harbour (Northeastern)
August 1982	2		Żonqor Point
September 1982	10		off Gordan (Gozo)
April 1983	4+		In the vicinity of Comino
April 1983	approx. 100		off Grand Harbour (Northeastern)
July 1984	pod		off Southeastern Malta
April 1990	1		Greenpeace
May 1990	2-3	Marsamxett Harbour	
June 1990	3	Off Northern Malta	
June 1990	3 with juveniles	off St. Andrews	
June 1990	5-15	off Northwestern malta	
August 1990	approx. 50	1 mile off Filfla	
September 1990	10-20 with juveniles	Malta-Gozo channel	

⁴⁹ Baldacchino A. E. & Schembri P.J. 2002. Amfibji, Rettili, u Mammiferi. Sensiela Kullana Kulturali- Pubblikazzjoni Indipendenza- PIN.

October 1994	pod	Marine Life Care Group (NGO)	Gozo
May 1995	1		In the vicinity of Comino
June 1995	27		In the vicinity of Filfla
June 1996	9		30km off Southwestern Malta (Żurrieq)

1.4.2 Population Size

Delphinus delphis was very widespread and abundant throughout the Mediterranean Sea until the 1960s. However, this species has experienced a major decline in this region during the past 30-40 years⁵⁰. The population of *Delphinus delphis* in the Alboran sea was estimated at 14,736 (individuals) with a density of 0.16 dolphins per km². The low frequency of sightings in other Mediterranean areas precluded further estimations of population size in the Mediterranean region⁵¹.

At a local scale, Vella (2005)⁵² estimated the density of this species in waters surrounding the Maltese Islands. On the basis of surveys carried out between 1997 and 2003 within the surveyed area, whose location and extent was not, however, specified in the publication, the density was estimated at 0.14 dolphins per km² (95% Confidence Interval 0.068-0.0295) with an average group size of 25. The author states that this estimate compares well with the densities and abundance estimates in southern parts of the Mediterranean, quoting the fact that many authors have indeed indicated that this species appears to increase in abundance southwards⁵³.

Based on the sightings data collected by BirdLife, a total of 100 individuals of *Delphinus delphis* were observed during 2012 in waters up to 25 nautical miles from the islands. Group size ranged between 1-30 individuals.

⁵⁰ Bearzi, G. 2003. Assessment Short-beaked Common Dolphin (*Delphinus delphis*) (Mediterranean subpopulation). In: In: Reeves R.R. & Notarbartolo di Sciara G. (compilers and editors). The status and distribution of cetaceans in the Black Sea and Mediterranean Sea. IUCN Centre for Mediterranean Cooperation, Malaga, Spain.

⁵¹ Bearzi, G. 2003. Assessment Short-beaked Common Dolphin (*Delphinus delphis*) (Mediterranean subpopulation). In: In: Reeves R.R. & Notarbartolo di Sciara G. (compilers and editors). The status and distribution of cetaceans in the Black Sea and Mediterranean Sea. IUCN Centre for Mediterranean Cooperation, Malaga, Spain.

⁵² Vella, A. 2005. Common Dolphins (*Delphinus delphis*) status in the Central and Southern Mediterranean around the Maltese Islands. In: Stockin, K.; Vella, A. & Evans P.G.H (eds) Proceedings of the Workshop on Common Dolphins: Current Research, threats and issues held at the European Cetacean Society 18th Annual Conference, Sweden, 2004. *European Cetacean Society Newsletter* 45 (Special Issue): 8-16pp.

⁵³ Vella, A. 2005. Common Dolphins (*Delphinus delphis*) status in the Central and Southern Mediterranean around the Maltese Islands. In: Stockin, K.; Vella, A. & Evans P.G.H (eds) Proceedings of the Workshop on Common Dolphins: Current Research, threats and issues held at the European Cetacean Society 18th Annual Conference, Sweden, 2004. *European Cetacean Society Newsletter* 45 (Special Issue): 8-16pp.

1.5 Striped dolphins - *Stenella coeruleoalba*

1.5.1 Distribution

Stenella coeruleoalba is considered to be the most common pelagic cetacean in the Mediterranean region, occurring in offshore waters from Gibraltar to the Aegean Sea and the Levantine Basin. Densities however vary across western and eastern basins. As for the other two delphinids considered in this report, the Mediterranean population of this species is genetically differentiated from the eastern North Atlantic populations⁵⁴. There also seems to be some genetic differentiation across the Mediterranean region and between inshore and offshore populations. In terms of distribution, this species seems to show preference for highly productive, open waters beyond the continental shelf⁵⁵.

In Malta, this species has been mostly observed offshore, with rare sightings in coastal waters⁵⁶. The currently available sightings data as collected by BirdLife Malta for 2012 as part of the EU LIFE+ Malta Seabird Project⁵⁷ is shown in Figure 5. This data implies that *Stenella coeruleoalba* is more common off the Northern to Southwestern coasts of Malta and seems to be more common in spring. However these observations would need to be verified through long-term monitoring.

Vella (1998)⁵⁸ also reported 3 encounters with groups of *Stenella coeruleoalba* of between 2–15 individuals, during a survey carried out between June and November 1997. However the location of these sightings is not available. Other published data on sightings of this species is summarised in Table 5.

⁵⁴ Aguilar, A. & Gaspari, S. 2012. *Stenella coeruleoalba* (Mediterranean subpopulation) In: IUCN 2013. IUCN Red List of Threatened species. Version 2013 www.iucnredlist.org,

⁵⁵ Aguilar, A. 2006. Striped Dolphin (*Stenella coeruleoalba*) Mediterranean subpopulation. In: Reeves, R. & Notarbartolo di Sciarra, G. (compilers and editors) 2006. The Status and Distribution of Cetaceans in the Black Sea and Mediterranean Sea. IUCN Centre for Mediterranean Cooperation, Malaga, Spain.

⁵⁶ Vella, A. 2007. A desk top study on cetaceans around the Maltese Islands, with reference to ongoing field research and data on cetacean distribution towards assessing the impacts of the proposed development of a marina and touristillage at Hondoq ir-Rummien. Report submitted as part of the Environmental Impact Assessment Process.

⁵⁷ <http://www.birdlifemalta.org/Content/LIFEPROJECTS/maltaseabirdproject/1115/>

⁵⁸ Vella, A. 1998. Cetacean Surveys around the Maltese Islands & Malta's sea-user cetacean questionnaire study. In: Evans, P.G.H & Parsons, E.C.M. (eds) Proceedings of the twelfth annual conference of the European Cetacean Society, Monaco, 20-24 January 1998. *European Research on Cetaceans*. **12**: 66-73

Figure 5: Sightings of *Stenella coeruleoalba* as collated by BirdLife Malta for 2012 as part of the EU LIFE+ Malta Seabird Project

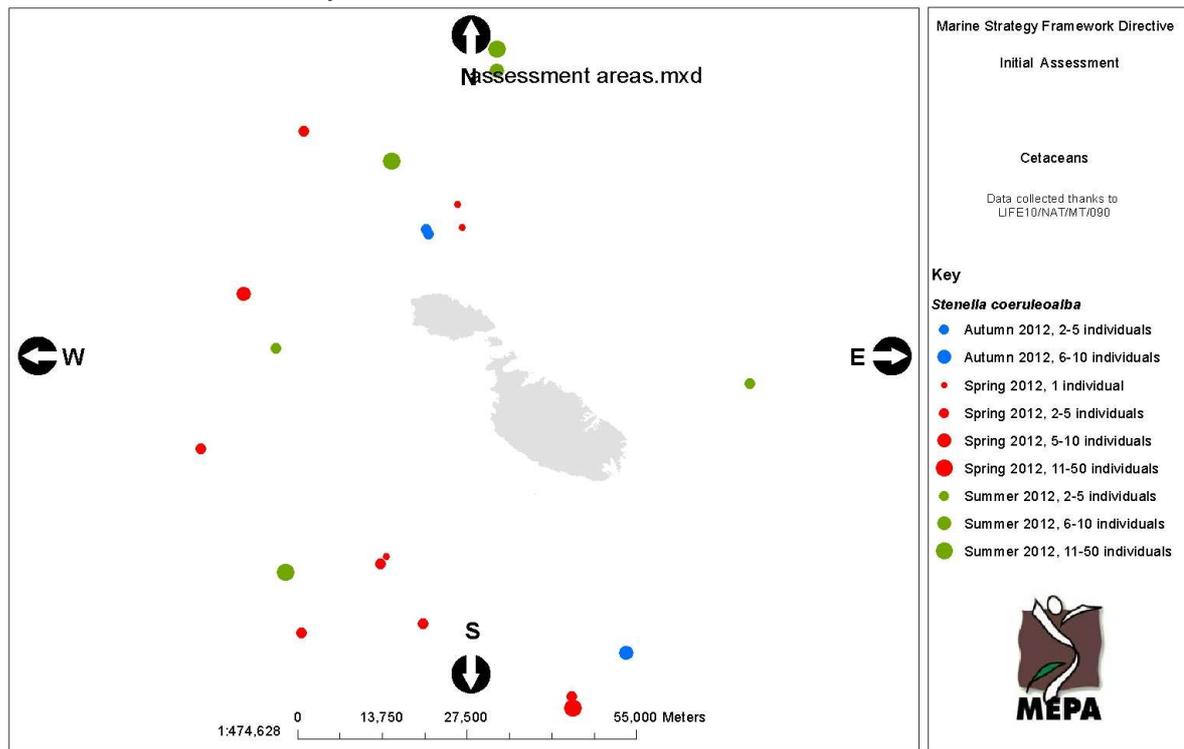


Table 5: Published data on past sightings of *Stenella coeruleoalba*⁵⁹

Date	Number	Observer	Indication of location of sighting
August 1990	8-10	Greenpeace	1 mile off Comino (to the North)
August 1990	2		off St. Andrews (Northern Malta)
August 1990	12 with juveniles		Off il-Ponta tal-Qawra (Northern Malta)

⁵⁹ Baldacchino A. E. & Schembri P.J. 2002. Amfibji, Rettili, u Mammiferi. Sensiela Kullana Kulturali- Pubblikazzjoni Indipendenza- PIN.

1.5.2 Population Size

Stenella coeruleoalba is considered to be the most abundant cetacean in the Mediterranean. In 1990-1992 the Mediterranean population suffered a major decline due to a die-off caused by a morbillivirus infection coupled to contamination by polychlorinated biphenyls (PCBs) and other organochlorine pollutants with potential immunosuppressive effects. A second outbreak of the morbillivirus occurred in 2006-2007, affecting the coast of Spain, France and the Ligurian Sea, however mortality in this case was moderate⁶⁰.

Most population estimates available to date pertain to the period immediately or soon after the 1990-1992 die-off⁶¹. Population size in the western Mediterranean excluding the Tyrrhenian Sea was estimated at 117,880 individuals⁶². Other estimates are available for the Balearic Sea, Gulf of Lions, Ligurian Sea, South Balearic area, Alboran Sea and Central coast of Spain⁶³.

Locally, abundance data for *Stenella coeruleoalba* is lacking. On the basis of the most recent sightings data as collected by BirdLife Malta, a total of 171 individuals have been sighted in 2012 in waters up to 25 nautical miles from the islands, with groups ranging between 1-50 individuals.

1.6 Other species – Risso’s Dolphin – *Grampus griseus*

Grampus griseus is a widely distributed species occurring throughout the Mediterranean Sea with sightings mostly concentrated in the Western basin. In general, Risso’s Dolphin prefers deep offshore waters and continental slope areas. While this species is regularly sighted in the western Mediterranean, no population estimates exist for the species in this region, although it is generally considered scarce⁶⁴.

Sightings of this species in Malta are not frequent. During the 2012 surveys carried out by BirdLife Malta as part of the EU LIFE+ Malta Seabird Project, 6 individuals were encountered in groups of 1-3 individuals.

At this stage, the range and population characteristics of this species in Malta are not known.

⁶⁰ Aguilar, A. & Gaspari, S. 2012. *Stenella coeruleoalba* (Mediterranean subpopulation) In: IUCN 2013. IUCN Red List of Threatened species. Version 2013 www.iucnredlist.org,

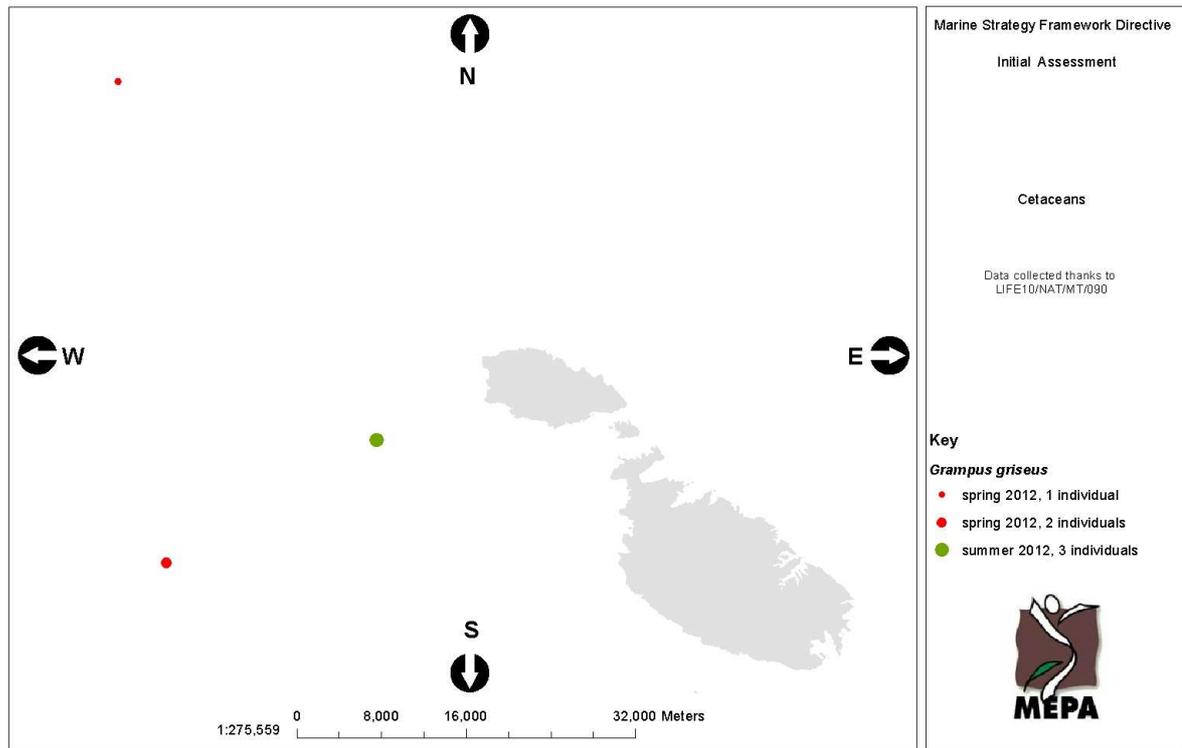
⁶¹ Aguilar, A. & Gaspari, S. 2012. *Stenella coeruleoalba* (Mediterranean subpopulation) In: IUCN 2013. IUCN Red List of Threatened species. Version 2013 www.iucnredlist.org,

⁶² Aguilar, A. 2006. Striped Dolphin (*Stenella coeruleoalba*) Mediterranean subpopulation. In: Reeves, R. & Notarbartolo di Sciarra, G. (compilers and editors) 2006. The Status and Distribution of Cetaceans in the Black Sea and Mediterranean Sea. IUCN Centre for Mediterranean Cooperation, Malaga, Spain.

⁶³ Aguilar, A. & Gaspari, S. 2012. *Stenella coeruleoalba* (Mediterranean subpopulation) In: IUCN 2013. IUCN Red List of Threatened species. Version 2013 www.iucnredlist.org,

⁶⁴ Gaspari, S. & Natoli, A. 2012. *Grampus griseus* (Mediterranean subpopulation). In: IUCN 2013. IUCN Red List of Threatened Species. Version 2013.1. <www.iucnredlist.org>.

Figure 6: Sightings of *Grampus griseus* as collected by BirdLife Malta for 2012 as part of the EU LIFE+ Malta Seabird Project



1.7 Pressures

1.7.1 Pressures and threats - regional level

Pressures on marine mammals can be broadly classified into two categories: (i) pressures resulting in mortality or damage to cetaceans and (ii) pressures leading to habitat degradation or loss of habitat.

A brief description of the main pressures on cetaceans in the Mediterranean region is provided below. These pressures however do not necessarily reflect the threats to cetaceans at a national scale.

Fisheries

Perceived conflicts with fisheries have in the past led to extensive extermination campaigns conducted until the 1960s, mainly targeted at *Tursiops truncatus* and *Delphinus delphis*⁶⁵. *Stenella coeruleoalba* was also subject to intentional killing since it was hunted for use as bait⁶⁶.

Apart from direct persecution, incidental capture in pelagic drift nets constituted a major source of mortality for *Stenella coeruleoalba* and *Delphinus delphis* in the Western Mediterranean until the 1990s. This fishery was halted in 1995, although it may still occur in the Mediterranean^{67,68}.

At present, incidental capture in fishing gear may still constitute a significant pressure on all three delphinids. However, reports of by-catch are sparse and data is not systematically collected, therefore by-catch of the delphinids in the Mediterranean region cannot be quantified at this stage^{69,70}. Incidental catches of *Stenella coeruleoalba* may be significant in pelagic purse-seines, drifting long-lines and gill nets⁷¹. *Tursiops truncatus* is highly susceptible to entanglement with fishing gear mainly due to its

⁶⁵ Bearzi, G. & Fortuna, C.M. 2006. Common Bottlenose Dolphin (*Tursiops truncatus*) Mediterranean subpopulation. In: Reeves R.R. & Notarbartolo di Sciara G. (compilers and editors). The status and distribution of cetaceans in the Black Sea and Mediterranean Sea. IUCN Centre for Mediterranean Cooperation, Malaga, Spain.

⁶⁶ Aguilar, A. 2006. Striped Dolphin (*Stenella coeruleoalba*) Mediterranean subpopulation. In: Reeves, R. & Notarbartolo di Sciara, G. (compilers and editors) 2006. The Status and Distribution of Cetaceans in the Black Sea and Mediterranean Sea. IUCN Centre for Mediterranean Cooperation, Malaga, Spain.

⁶⁷ Aguilar, A. & Gaspari, S. 2012. *Stenella coeruleoalba* (Mediterranean subpopulation) In: IUCN 2013. IUCN Red List of Threatened species. Version 2013.1. <www.iucnredlist.org>

⁶⁸ Bearzi G. 2003. *Delphinus delphis* (Mediterranean subpopulation). In: IUCN 2013. IUCN Red List of Threatened Species Version 2013.1. <www.iucnredlist.org>

⁶⁹ Aguilar, A. 2006. Striped Dolphin (*Stenella coeruleoalba*) Mediterranean subpopulation. In: Reeves, R. & Notarbartolo di Sciara, G. (compilers and editors) 2006. The Status and Distribution of Cetaceans in the Black Sea and Mediterranean Sea. IUCN Centre for Mediterranean Cooperation, Malaga, Spain.

⁷⁰ Bearzi, G.; Fortuna, C. & Reeves, R. 2012. *Tursiops truncatus* (Mediterranean Subpopulation) In: IUCN 2013. IUCN Red List of Threatened species. Version 2013.1. <www.iucnredlist.org>

⁷¹ Aguilar, A. 2006. Striped Dolphin (*Stenella coeruleoalba*) Mediterranean subpopulation. In: Reeves, R. & Notarbartolo di Sciara, G. (compilers and editors) 2006. The Status and Distribution of Cetaceans in the Black Sea and Mediterranean Sea. IUCN Centre for Mediterranean Cooperation, Malaga, Spain.

opportunistic behaviour and predominant coastal occurrence⁷². Bearzi (2003) states that by-catch alone is unlikely to have caused the recorded declines of *Delphinus delphis*, however it may have contributed significantly.

Depletion of fishing resources in the Mediterranean can potentially affect all three delphinids by reducing availability of food for them. Reported prey items for *Tursiops truncatus* include demersal species such as *Merluccius merluccius*, *Conger conger*, *Mullus barbatus*, *Mullus surmuletus*, *Sepia officinalis* and *Octopus vulgaris*⁷³, most of which are commercially exploited species.

Contamination

Habitat degradation as a result of contamination is considered a significant pressure on cetaceans. High levels of polychlorinated biphenyls and organochlorine pollutants, which are associated with immunosuppressive effects, are deemed to have enhanced the spread and lethality of the morbillivirus infection causing the die-off of *Stenella coeruleoalba* reported in 1991-1992⁷⁴. Levels of such contaminants in Mediterranean bottlenose dolphins are very high compared to levels reported from other areas and are a concern due to their potential effects on reproduction and health⁷⁵.

Maritime traffic

Collisions and accidents with vessels can lead to mortality or damage to cetaceans. There is also evidence that disturbance and noise generated by maritime traffic can lead to alterations in behaviour of cetaceans⁷⁶. However knowledge on behavioural disruptions and habitat loss as a result of disturbance from maritime traffic is limited.

Underwater Noise:

In addition to the disturbance caused by underwater noise generated by maritime traffic, impulsive noise generated by other activities such as seismic surveys, dredging, drilling and the use of military and other sonars also constitutes a cause of concern for cetaceans⁷⁷.

⁷² Bearzi, G.; Fortuna, C. & Reeves, R. 2012. *Tursiops truncatus* (Mediterranean Subpopulation) In: IUCN 2013. IUCN Red List of Threatened species. Version 2013.1. <www.iucnredlist.org>

⁷³ Bearzi, G.; Fortuna, C. & Reeves, R. 2012. *Tursiops truncatus* (Mediterranean Subpopulation) In: IUCN 2013. IUCN Red List of Threatened species. Version 2013.1. <www.iucnredlist.org>

⁷⁴ Aguilar, A. 2006. Striped Dolphin (*Stenella coeruleoalba*) Mediterranean subpopulation. In: Reeves, R. & Notarbartolo di Sciara, G. (compilers and editors) 2006. The Status and Distribution of Cetaceans in the Black Sea and Mediterranean Sea. IUCN Centre for Mediterranean Cooperation, Malaga, Spain.

⁷⁵ Bearzi, G. & Fortuna, C.M. 2006. Common Bottlenose Dolphin (*Tursiops truncatus*) Mediterranean subpopulation. In: Reeves R.R. & Notarbartolo di Sciara G. (compilers and editors). The status and distribution of cetaceans in the Black Sea and Mediterranean Sea. IUCN Centre for Mediterranean Cooperation, Malaga, Spain.

⁷⁶ Bearzi, G.; Fortuna, C.M. & Reeves, R.R. 2008. Ecology and Conservation of common bottlenose dolphins *Tursiops truncatus* in the Mediterranean Sea. Mammal Rev. 39 (2): 92-123

⁷⁷ Bearzi, G.; Fortuna, C.M. & Reeves, R.R. 2008. Ecology and Conservation of common bottlenose dolphins *Tursiops truncatus* in the Mediterranean Sea. Mammal Rev. 39 (2): 92-123

Marine Litter:

Ingestion of foreign objects and materials, such as plastic, wood and textiles may result in partial obstruction of the digestive tract leading to mortality or damage to cetaceans.

1.7.2 National threats

Pressures on cetaceans in Malta have not been assessed. However cetaceans in Malta are likely to be exposed to pressures similar to the above-mentioned pressures from fishing, maritime traffic and contamination of the marine environment.

Fishing methods adopted in Malta include pelagic long-lining mostly for bluefin tuna (*Thunnus thynnus*) and broadbill swordfish (*Xiphias gladius*), coastal demersal trawling, "lampara" purse seining, inshore long-lining, trammel nets, driftnets and traps. These fishing methods do not pose a significant threat to cetaceans as far as by-catch is concerned. However, the potential use of large-scale pelagic driftnets in adjacent areas of the Mediterranean region may still affect local populations of cetaceans.

1.8 Assessment of Status

In view of current data limitations, assessment of status of marine mammals was carried out at the level of the 'Toothed Whales' functional group, deemed to be represented by the three delphinids: *Tursiops truncatus*, *Delphinus delphis* and *Stenella coeruleoalba*. Such assessment was based on the following MSFD criteria and indicators:

- Condition of the typical species and communities (1.6.1)
- Relative abundance and/or biomass, as appropriate (1.6.2)

The application of Indicator 1.6.1 mainly refers to the composition of the species within the functional group, while the application of Indicator 1.6.2 is based on the 2012 sightings data collected by BirdLife Malta. Given the lack of long-term data, there is the need to re-affirm the status as defined in this report once further data becomes available.

1.8.1 Assessment Area

The assessment area used for determining status of marine mammals on the basis of the existing data is indicated in Figure 7. This area represents the extent of marine waters for which data on the three dolphin species (*Tursiops truncatus*, *Delphinus delphis* and *Stenella coeruleoalba*) is currently available and hence for which assessment of status was possible. Sightings of cetaceans in 2012 have occurred in practically all the area surveyed (Figure 8).

It must be pointed out however that assessment of such highly mobile species may be more ecologically meaningful if carried out at a regional or subregional scale.

Figure 7: Assessment area used for the purposes of assessment of status of the 'Toothed Whales' functional group.

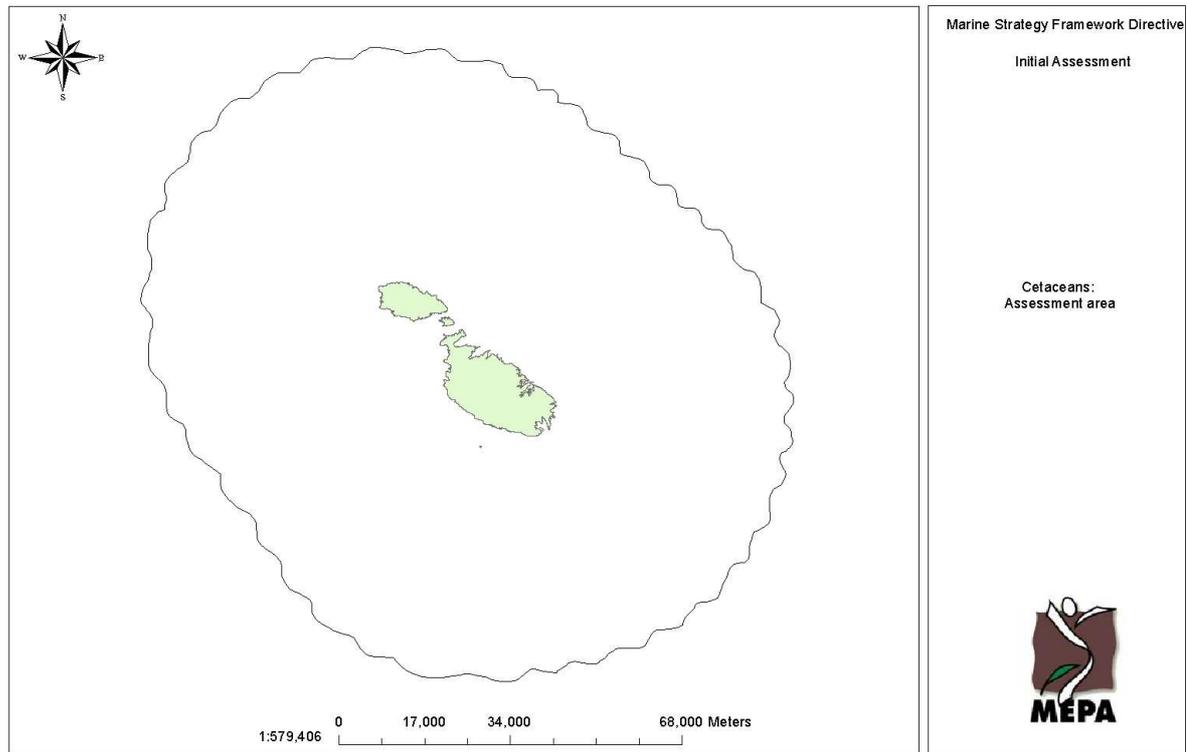
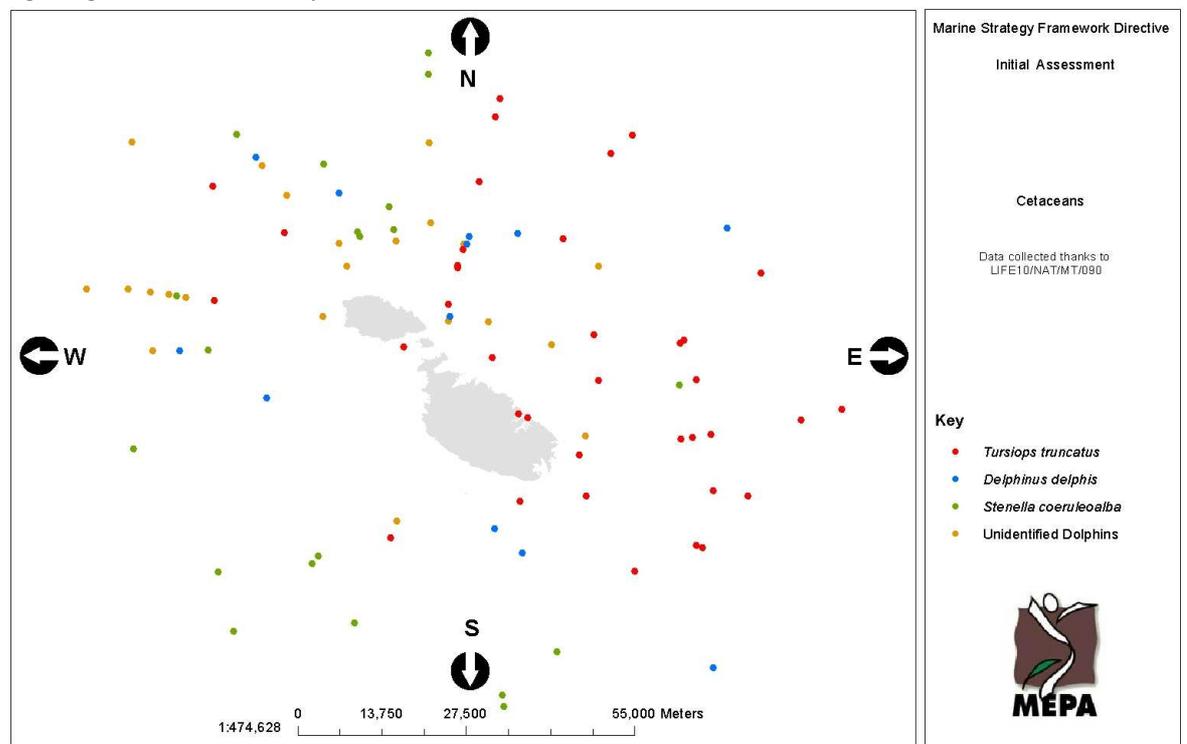


Figure 8: Overall distribution of dolphins within the assessment area, based on the 2012 sightings data collected by BirdLife Malta.



1.8.2 Assessment – species composition

Species belonging to the ‘Toothed Whales’ functional group occurring in Malta reflect the species composition of marine mammals in the Mediterranean region. Eight species of marine mammals are represented by resident populations in the Mediterranean region, all of which are recorded in Malta. With specific reference to ‘Toothed Whales’, sporadic records of *Physeter macrocephalus*, *Ziphius cavirostris* and *Globicephala melas* imply that these species are occasional or stragglers in Malta. Risso’s dolphin (*Grampus griseus*) is not as rare as the above-mentioned cetacean species, however, available records of Risso’s dolphin are not substantial enough to indicate a resident populations in Malta.

Based on all records available, the species composition of marine mammals in the assessment area is deemed to be in line with natural physiographic, geographic and climatic conditions, since it reflects the resident species recorded in the Mediterranean. Considering records during the past century, none of these species have been lost from Malta, and hence the species composition is deemed to be stable.

Status in terms of species composition for the ‘Toothed Whales’ functional group is deemed to be ‘good’.

1.8.3 Assessment – relative abundance

Abundance data for the three delphinid species deemed to represent the ‘Toothed Whales’ functional group in Malta is not available. Nevertheless, sightings data collected in 2012 may provide an indication of ‘relative abundance’ on a ‘snapshot’ basis (Figure 9 and Figure 10). Based on this data set, *Stenella coeruleoalba* is the most abundant species, followed by *Tursiops truncatus* and *Delphinus delphis*. Whilst noting that longer-term data would be necessary to confirm this ranking, the higher abundance of *S. coeruleoalba* in relation to *T. truncatus* reflects reported relative abundances in other central Mediterranean areas. At this stage it was not possible to compare the relative abundance of *Delphinus delphis* with its relative abundance in other Mediterranean areas. Nevertheless, the relative abundances of *S. coeruleoalba* and *T. truncatus* are deemed to be in line with natural physiographic, geographic and climatic conditions of the Mediterranean region.

In view of current data limitations, status in terms of relative abundance is not being defined at this stage.

Figure 9: Abundance of *Tursiops truncatus*, *Delphinus delphis* and *Stenella coeruleoalba*, based on the 2012 sightings data as collected by BirdLife Malta.

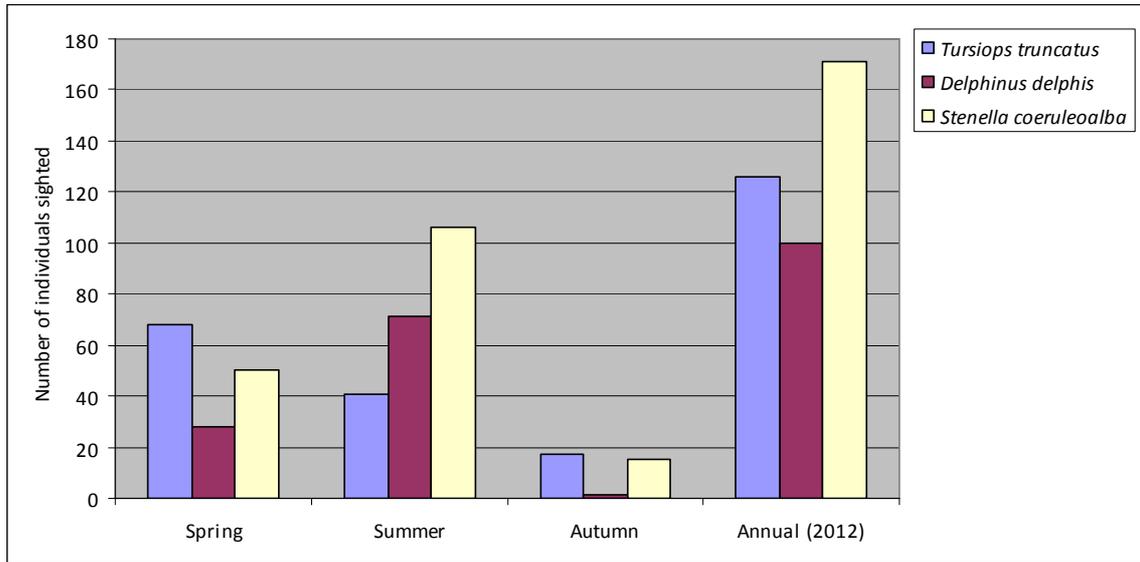
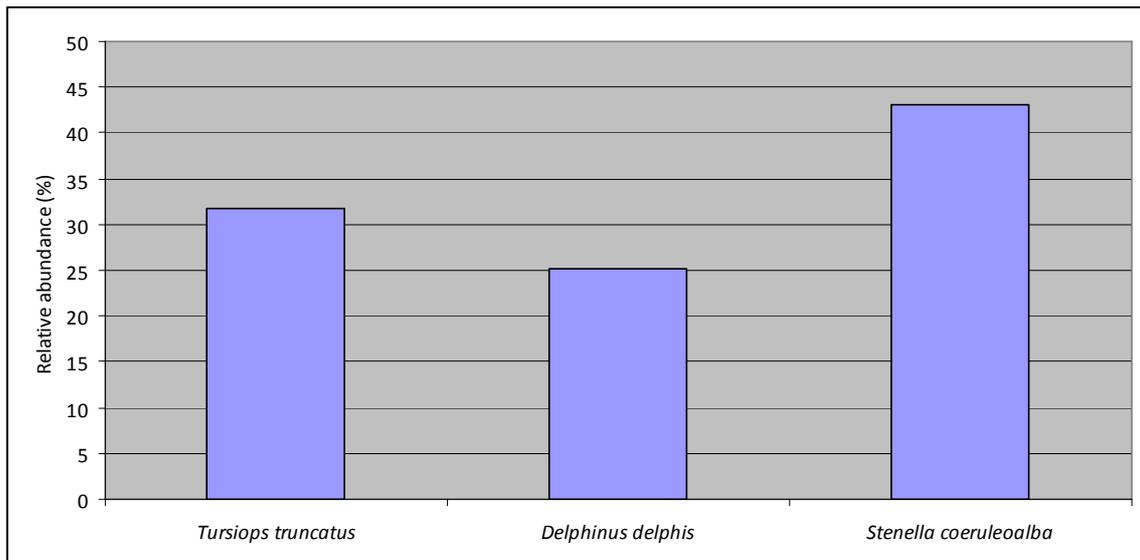


Figure 10: Relative abundance of *Tursiops truncatus*, *Delphinus delphis* and *Stenella coeruleoalba*, based on the 2012 sightings data as collected by BirdLife Malta.



1.9 Data Gaps

There is very limited knowledge on the distribution, abundance and population demographics of the delphinids described in this report. The interactions with anthropogenic activities, hence levels of pressures to which this functional group is exposed, are also poorly known at a local scale.

Such data gaps should be addressed through systematic data collection, also with a view to identify foraging or otherwise important areas for the conservation of these marine mammals and to inform management of human activities which may pose significant threats to these animals.