



PROJECTO CETACEOSMADEIRA II

IDENTIFICAÇÃO DE ÁREAS MARINHAS CRÍTICAS PARA O GOLFINHO-ROAZ E VIGILÂNCIA DOS ESTATUDOS DE CONSERVAÇÃO DOS CETÁCEOS NO ARQUIPÉLAGO DA MADEIRA

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After-LIFE Conservation Plan

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LIST OF ABBREVIATIONS

MWM – Madeira Whale Museum

IUCN - International Union for the Conservation of Nature

CMII – Project CETACEOSMADEIRA II

EEZ – Exclusive Economic Zone

SCIp –Site of Community Importance proposal

PREFACE

The present document it is product of LIFE+ Nature project CETACEOSMADEIRA II (LIFE07 NAT/P/000646), and it was prepared to address EU LIFE+ Program requirements.

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1. INTRODUCTION

1.1. Background on the status of cetaceans in Madeira Archipelago

Systematic scientific studies to provide information on the ecology, threats and conservation status of the cetaceans' populations in the Madeira Archipelago started only in this century through the first CETACEOSMADEIRA project (LIFE 99NAT/P/6432 - 2000 to 2004). After that project the Scientific Research Unit of the MWM developed other projects, namely, the MACETUS (FEDER/INTERREG IIIB MAC/4.2/M10 - 2004 to 2005), the GOLFINICHO (FCT POCI/BIA-BDE/61009 - 2005 to 2006), and the EMECETUS (FEDER/INTERREG IIIB 05/MAC/4.2/M10 - 2006 to 2008). Before these ecological studies, the scientific knowledge on the cetaceans occurring in the Madeira Archipelago was mainly resumed to the identification of new species, with 14 species known to these waters by 1998.

During the last decade much more knowledge was acquired on the ecology of cetaceans in the Madeira Archipelago. Actually, we know (1) that the number of species occurring in these waters doubled, (2) that some species use Madeiran waters as a passage during their migration, others are only sighted occasionally, others seasonally and others year-round, (3) that some species share a common population with the neighbouring archipelagos of the Canaries and the Azores, and (4) that some species use these waters for feeding, birthing, calving, resting and socializing.

Furthermore, an assessment of the identified and the potential anthropogenic threats towards the cetaceans was also made during the CETACEOSMADEIRA project. Eight threats listed with identified impacts and nine listed with potential impacts were described, but only commercial and recreational whale-watching vessels needed immediate monitoring and management measures. Indeed, a characterization of the whale-watching activity and an evaluation of its impact were made in Madeira. The industry started opportunistically during mid-90's, and in 2007 the fleet was composed of 10 boats operating bi-daily trips year-round, mainly along the south of the island of Madeira, with short-term effects on delphinids (such changes in speed) recorded. Most of the fleet followed a voluntary code of conduct proposed by the MWM in 2003, and the activity became legally regulated recently in 2013 (by the Dec. Leg. Regional 15/2013/M, 14 de Maio).

Finally, the conservation statuses for some of the species of cetaceans occurring in the Madeira Archipelago were defined in 2004 as the result of Project CETACEOSMADEIRA, following the IUCN criteria, and published in 2005. It was based mainly on data from surveys and on personnel expertise gained during the above mentioned project, but still data was lacking for most species. Thus, the assess for most species was 'Not Applicable' or 'Data Deficient' , 'Vulnerable' for one species and 'Least Concern' for the four most abundant species, namely, the bottlenose dolphin (*Tursiops truncatus*), the short-finned pilot whale (*Globicephala macrorhynchus*), the common dolphin (*Delphinus delphis*) and the Atlantic-spotted dolphin (*Stenella frontalis*).

Nevertheless, until 2009, the scientific knowledge obtained was the result of data collected in the coastal waters (mainly from <20 km) of the Madeira, Desertas and Porto Santo Islands and therefore the assessment of the conservation status of the cetaceans' species was based only on data from the inshore waters. There were preliminary evidences of the existence of resident groups of bottlenose dolphins and short-finned pilot whales. Moreover, the bottlenose dolphin is a species listed in the Annex II of the Habitats Directive, and for which Sites of Community Importance (SCI) should be designated by the National States to integrate the Natura 2000 network, in important areas for the species. Finally, the whalewatching industry increased in the the last decade without management measures aiming at the industry sustainability and the cetaceans' conservation. Background scientific knowledge and management tools (e.g. spatial planning, carrying capacity) were needed. Therefore, these conservation-related issues were proposed in Project CETACEOSMADEIRA II to European Funding (LIFE+ Program).

1.2. Overview of the project history

The project CMII (LIFE+07 NAT/P/000646 - 2009 to 2013) was carried out by the MWM, and intended to answer the following questions related to the conservation of cetaceans in the Madeira Archipelago:

- Objective 1) Are there important areas for the bottlenose dolphin in Madeira waters? Should these areas be designated as SCI and to be part of Natura 2000 Network?
- Objective 2) Should areas and operation limits be established for the activity in order to contribute to its sustainability and for the conservation of cetaceans? If so, which areas and respective carrying capacity?
- Objective 3) What are the conservation status of the cetacean species on the offshore waters of the Madeira EEZ? Are they exposed to threats due to human activities? If so, which ones and with what impact? Are tuna fishing vessels the most appropriate and/or efficient means for collecting biological information to assess the conservation status of cetaceans in the offshore waters?

At the beginning of the project, protocols for data collection at sea were prepared in order to define the appropriate scientific methodologies as well as their data analysis. To answer the questions of Objectives 1) and 2) visual systematic nautical surveys, visual random nautical surveys and opportunistic trips on board whale-watching boats were carried out, and for the questions of Objective 3) opportunistic trips took place on board tuna fishing vessels.

The project used the MWM research vessels *Ziphius* and *Roaz* that were acquired by the Machico Town Hall during the previous projects co-financed by the Life-Nature Program and by the FEDER/INTERREG IIIB, respectively. Systematic and random nautical visual surveys were performed in the inshore waters (<20 km) of the Madeira, Desertas and Porto Santo Islands, which were combined with nautical surveys data (up to 40 km off the coast) collected during previous projects in order to provide a more robust analyses. The sighting data of cetaceans (distance and angle of the animals to vessel, species, group size, number or calves, behaviour,

etc.) together with the sampling effort and the environmental conditions (collected *in situ* and from remote sensing) were analysed with the program Distance and with the spatial modelling technique. That allowed to estimate abundance, species local distribution and to identify critical habitat areas for each species.

To help answering the questions of Objective 2), collaboration protocols with some local whale-watching operators were established in order to allow the observers of the MWM to collect information related with that industry at sea. Information included the sightings of cetaceans, the behaviours' of the whale-watching boats during sightings, and the boats' routes to evaluate the distribution patterns of the fleet. Additionally, an assessment of the cetaceans' availability vs. the vessels pressure/presence in the main whale-watching area (off Funchal) was carried out using simultaneously observers on board the whale-watching vessels and on lookout posts on land.

Another technique that provided important results was photo-identification. Attempts to photograph all sighted animals from close distance with lenses were made by the research team during nautical surveys in *Ziphius* and in *Roaz* as well as in whale-watching boats, and by experienced touristic operators. Photographs taken during the last decade by the MWM research team were also used, and all naturally marked animals from all species were catalogued and went to a sorting and matching process. For some species, this helped assessing short and long-term site fidelity, residency patterns, population and social structure, and movements, and allowed estimating vital population parameters such as survival and abundance. Results for bottlenose dolphin were used to help answering the questions of Objective 1) and results for the remaining species helped answering the questions of Objective 2).

Finally, to help answering the questions of Objective 3), four observers from the MWM used tuna fishing vessels as platforms of opportunity during three fishing seasons to collect data in the Madeira offshore waters (within the whole Madeira EEZ). The data refers to cetaceans' ecological parameters (such as species sighted, group size, or behaviour) in relation to sampling effort and vessels' courses, and to the impact of human activities on cetaceans and the marine environment (such as marine traffic, interactions between cetaceans and fisheries, and litter). Complementary AIS data helped assessing traffic.

1.3. Assessment of the situation at the end of the project

In 2013, at the end of the project, the knowledge about the population ecology of the (most common) species of cetaceans, about the anthropogenic threats, and about the conservation status of the cetaceans in the Madeira EEZ improved substantially. That allowed answering to the project CMII objectives, overall, as described below.

1.3.1 Site of Community Importance for the bottlenose dolphin

From the nautical surveys' and photo-identification data analysis, we know that on average about 500 bottlenose dolphins use the coastal waters of Madeira, of which 25% are considered island-associated animals. There are, however, variations throughout the year, with a larger number of sightings occurring in summer and autumn. Most bottlenose dolphins are mainly passing by, possibly moving between the Azores, Madeira, Canary Islands, offshore waters of mainland Portugal and other locations. All these resident and transient bottlenose dolphins are thus part of a large population that uses the pelagic waters of the North Atlantic Ocean, thus acknowledging the geographical importance of the Madeiran waters in the wider context of the ocean basin.

The bottlenose dolphins were observed in all coastal waters around the islands of the archipelago up to -2000m deep. However, the results of the data analysis shows a preference for certain areas, namely the sea at North of Ponta de São Lourenço, the channel between Madeira and the Desert Islands, the southeast of Madeira as well as the south of Porto Santo; all with depths shallower than -1000m. The bottlenose dolphins are known to use these waters for socializing, resting, feeding and breeding. The species is within the cetaceans potentially most vulnerable to human activity in the Madeira archipelago due to its very coastal distribution, especially the resident animals that depend heavily on the waters of Madeira and the quality of its habitat to live.

The MWM previous projects identified the whale-watching, the behaviour of recreational vessels with cetaceans, the navy sonars and the litter at sea, especially plastics, as the human factors with greater impact on cetaceans in the Madeira Archipelago. The preferred distribution of the bottlenose dolphin partially overlaps with the south and southeast of Madeira, the area of higher human activity at sea, including marine traffic, mainly from recreational vessels. This is also one of the most observed species by the whale-watching boats, not only because it is able to be seen throughout the year, but also for being one of the most common species.

The results of the CMII project and previous projects revealed that fishing activity, an activity traditionally with a big impact on cetaceans, does not have a relevant impact on bottlenose dolphins in Madeira, due to the artisanal characteristics and small-scale of the coastal fishing fleet and to the selective fishing gears used. The two most influential fleets in the Region, the scabbard and the tuna fishing fleets, carry out their main activity further offshore where the possibilities of interaction with the bottlenose dolphins are smaller. Nevertheless, mackerel fishery is carried out in coastal waters, and few interactions cases have been recorded, although with unknown impacts.

The creation of a SCI for bottlenose dolphin in Madeira is completely justifiable, considering the importance of these waters for this species. The proposed area for the SCI comprises all coastal waters around Madeira, Desertas and Porto Santo Islands between the coast and the -2500 m bathymetry, with a total area of 5 560

km². This area comprises all important habitats for bottlenose dolphin in the archipelago where the species develop critical activities, including feeding, resting, socializing and breeding. The experience of other SCIs, namely in the United Kingdom, created for highly mobile species such as the bottlenose dolphin, have demonstrated that these areas should be broad enough not only to comprise the critical habitats identified at the time of its creation, but also to accommodate natural fluctuations in their area of distribution. The designation of a SCI for bottlenose dolphins in Madeira will largely contribute to the interconnectivity and ecological coherence of Natura 2000 Network in what concerns marine areas for the bottlenose dolphin in the Northeast Atlantic, thus bridging the gap between the Azores, the Canaries and the Iberian Peninsula where SCI for this species already exist or are proposed.

Considering all this, the SCIp comprising all coastal waters around the Madeira, Desertas and Porto Santo Islands, between the coast and the 2500 m bathymetry, was presented to Madeira Regional Government at the beginning of 2014, with a positive feedback. With the presentation of the final supporting documents by the end of 2014, there is the expectation that steps to implement the SCIp will soon follow.

1.3.2 Areas of operation for whale-watching and its carrying capacity

A characterization of the whale-watching industry revealed that more than a dozen boats perform bi-daily trips in the south of Madeira Island (mainly from Funchal harbour), with an average of 1.4 encounters (with cetaceans) per trip, and each encounter with a mean duration of 25 min and 3 vessels. Eighty six per cent of the cetaceans observed by the whale-watching vessels are based on the five most abundant species. Those included the bottlenose dolphin, the short-finned pilot whale, the common dolphin, the Atlantic spotted dolphin and the Bryde's whale *Balaenoptera edeni*.

The project CMII showed that those five most abundant species rely on the waters of Madeira to perform various activities crucial to their survival, such as feeding, resting, socializing, reproduction, breeding and calving. However, their spatio-temporal distribution in these waters varies according to each species. While the bottlenose dolphin is known to be present year-round preferentially in shallower waters in the east of Madeira and south of Porto Santo (see section above), the short-finned pilot whale occurs preferentially in deeper waters in a core area in the southeast area of Madeira. During the project it was also known that this latter species demonstrate a large degree of variability in site fidelity, including resident, regular visitor and transient whales, that they may not be genetically isolated, that less than 150 whales are island-associated, and that these whales have a high survival rate within the range of other long-living mammals. On the other hand, the remaining three species display only a seasonal presence, with the common dolphin being present especially in winter and spring and the other two species in summer and autumn, and present a more patchy distribution across whole the archipelago. Even though, the common dolphin shows some preferences by the extremes of islands, and the Atlantic spotted dolphin by the south coast of Madeira Island.

These five most common species are therefore more vulnerable to the pressure caused by the whale-watching activities, especially the local groups, which may suffer serious consequences if the activity is not conducted within certain limits. One way of minimizing the activity impact on cetaceans is through a proper conduct in the observation of the animals. Another one, also very important, is the definition of areas of operation which take into consideration the distribution of the different target species and the establishment of maximum limits on the activity - carrying capacity - within those areas.

Therefore, in order to achieve a balance between the touristic and socioeconomic interests related to the activity and the conservation of cetacean species in the archipelago of Madeira as well as the welfare of the animals observed, the project CMII proposed 3 options with distinct number of areas of operation for the whale-watching boats, each with different carrying capacity. The definition of these areas considered the present pattern of operation of whale-watching boats, the location of the harbours of the boats and the spatial distribution of the activity's main target species. The carrying capacity for each area was established taking into account the estimated number of cetaceans groups present in each of the operation areas and the importance of those areas for the species' crucial activities. The carrying capacity was thus defined by two parameters; the maximum number of boats authorized to operate in an area and the maximum number of daily trips to be made by each boat, and used the area associated with the Funchal harbour as a reference area.

With this set of measures we expect to contribute for the conservation of cetaceans and the quality and sustainability of whale-watching in Madeira archipelago. The definition of areas of operation and its carrying capacity, and awareness of the whale-watching operators for quality of the encounters, will certainly help to keep the pressure on cetaceans within acceptable limits while enabling some growth in the activity. The areas of operation and the respective carrying capacity has already been implemented by the Madeira Government, through the Ordinance of the Environment and Natural Resources Regional Department (Portaria 46/2014, of 22 April), based on the proposal resulting from CMII Project.

1.3.3 Conservation status of cetaceans in offshore waters

The surveillance of the conservation status of the cetaceans in the offshore waters of the Madeira EEZ allowed the identification of 11 species, being the common dolphin the most frequent. No substantial differences exist in the cetaceans' encounter rates when compared with the inshore waters, although some species like the bottlenose dolphin are rarely observed. Concerning the anthropogenic activities, three with potential impacts to cetaceans were considered during the CMII, namely, the marine traffic, the interactions between cetaceans and fisheries, and litter, and their findings are described here.

Various types of marine traffic are known to use the offshore waters of Madeira EEZ such as tuna fishing vessels, scabbard fish fishing vessels, cruise and cargo ships, sailboats and yachts. Yet, marine traffic is considered low, especially when compared with other areas such as the Strait of Gibraltar. The risk of collision with cetaceans is expected to be reduced due to the low level of traffic and due to the absence (or

very few records) of high speed (>25 kt) vessels navigating in these waters. However, there is a potential area of conflict in the inshore waters of Madeira (south of Madeira; channels between Madeira and Desertas and between Madeira and Porto Santo; South of Porto Santo) where there is a higher boat traffic coinciding with high density areas of cetaceans. The assessment of this risk is important to understand the boat traffic potential impact in the SCIP. Possible ship strikes are hard to record due to the oceanic nature of the area, with possibly most of carcasses sinking or being taken to high seas before they are detected or strand.

The assessment of the interactions with the tuna fisheries also reveals a low level of impact to the cetaceans. The low rate of interactions and the absence of by-catch are quite positive and demonstrate the selectiveness of the fishing gear used by the Madeira tuna fishing fleet and the very low impact on cetaceans. Besides the fishermen' initial complain about short-finned pilot whales disturbing their fishery, no interaction was recorded with this species by the observers of the MWM during the CMII. In contrast, the common dolphin was the species with greater presence and interference with the fisheries. However, there are some fisheries which have not been monitored, namely the scabbard fish fisheries and fisheries carried out beyond the 100 nautical miles from shore by non-local fleets. While the scabbard fish fisheries it is expected to have a low impact due to the very selective nature of the fishing gear (deep sea long lining), nothing can be said regarding possible impacts of non-local fleets.

Concerning the assessment of litter, plastic is the most common type of litter, representing about 65% of total found. Although, impact of litter on cetaceans may be expected to be low given the large size of the study area and the low rate of litter found at sea, it is very hard to assess that impact because litter may be problematic to cetaceans not only killing and impairing them directly (e.g. ingestion; body constrains) but also affecting the animals at the physiological level through the still largely unknown impact of micro plastics. It is the difficult to gather solid data on plastic impacts on cetaceans because most carcasses may sink or be taken to high seas before they are detected or strand. Nevertheless, several events involving cetaceans or other marine animals with persistent litter, especially plastics, have been recorded over the years by the MWM. This is more evident in the waters near the coast where more aggregations of litter are observed, some of them of local origin. It is important to highlight that persistent litter takes years, decades, even centuries to degrade, and their cumulative effect is a risk to marine life.

The limitations imposed by using platforms of opportunity did not allow collecting all necessary data for estimating population demographic parameters. Yet, the information collected during the project CMII in the offshore waters of the Madeira EEZ suggests a high cetacean diversity and reasonable abundance, and a low impact by the human activities in those waters.

1.3.4 SWOT analysis

In order to assess the current situation regarding cetaceans' conservation in Madeira a SWOT analysis is presented in table 1.

Table 1. Outline of SWOT analysis of the long-term conservation needs for cetaceans in Madeira; ww – whale-watching.

<p>Strengths</p> <ul style="list-style-type: none"> • Robust scientific knowledge for the area • Area of high importance for several cetacean species • Overall conservation status of low concern • Experienced research team • Existence of necessary infrastructures/equipment • Member State responsibility in creating SCI • Good public awareness on cetaceans • Good relationship with ww-operators and fishermen • Experienced governmental entity in maintaining protected areas 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Fragmentation of the research team at the end of project • Proposed actions dependent on the government approval • Platforms of opportunity dependent on the good relationship with ww-operators and fishermen • Logistical challenges in monitoring marine areas, especially in the offshore waters
<p>Opportunities</p> <ul style="list-style-type: none"> • Interest of ww-operators in healthy populations • Nature’s importance as development factor • Funding opportunities through EU/Regional programs • Political will for a ‘green’ Madeira external image 	<p>Threats</p> <ul style="list-style-type: none"> • Conflict of interest with ww-operators association • Increase in the level of disturbance of anthropogenic threats (e.g. marine traffic, litter, ww-operators, interaction with fishery)’ • Possibility of abandonment of the protected areas policy agenda

2. LONG-TERM CONSERVATION NEEDS

The creation of the SCIp constitutes an important instrument to insure a favourable conservation status of the bottlenose dolphin in Madeira waters. One of the most important related aspects is monitoring the relevant parameters of the target species, together with the implementation of a management plan to address specific conservation issues, through conservation measures and monitoring the impact of human activities.

The major conservation issue identified in previous years for Madeira waters was the whalewatching impact on cetaceans, already addressed through specific legislation and through the establishment of exclusion zones, areas of operation and respective carrying capacity, as a result of CMII project (objective 2). With these measures it is expected that the activity impacts may be kept at tolerable levels. However monitoring actions and further research is needed to understand the real contribution of these measures for the sustainability of the activity be minimizing impacts on the activity target species, especially on what concerns long term impacts at the management units (resident groups with calves).

With the establishment of a SCIp for the bottlenose dolphin in Madeira coastal waters, arises the opportunity to develop and adaptative management procedure for the WW activity, synchronised with the 6 year SCI assessment and reporting cycle. In this cycle the WW operation levels may be established based on the SCI management plan objectives, having as reference the respective long term conservation objectives. This way the research and monitoring actions may be also used to assess the sustainability levels of the WW activity according with the management plan, and new levels established based on that assessment.

Other cetaceans' conservation concerns persist, namely: the problem of litter at sea which is ocean wide problem with non-quantified impacts on cetaceans; potential problem with marine traffic at a specific corridor in coastal waters of Madeira; unknown impact of non-monitored fishing fleets; and also the growing problem of underwater acoustic impacts of which nothing is known for Madeira waters.

Thus, one of the major needs for the long-term conservation of the cetaceans on the coastal waters of Madeira is the continuation/evolution of a permanent monitoring plan. The plan was initially proposed to the Madeira Regional Government in 2004 as an output of the CETACEOSMADEIRA project. That plan, the Document H 'Plano de Monitorização Permanente dos Cetáceos no Arquipélago da Madeira' of the aforementioned project, was initiated in 2007 and continued throughout 2012, thus complementing surveys and data collected from other conservation projects (see 1.1). The monitoring plan covers the waters (<20 km from the coasts) of Madeira, Desertas and Porto Santo Islands, surveying the area proposed for the SCI, the whale-watching operation areas and the exclusion zone. The document will soon be updated/revised based on the knowledge and experience gained in the meantime. One of the important aspects is to maintain the methodological temporal consistency in order to be able to compare and monitor the species ecological and population parameters over time.

On what concerns the conservation of cetaceans in the offshore waters, the data collected during the project CMII was limited because of the use of tuna fishing vessels as research platforms of opportunity. Some limitations included: (1) sightings identification sometimes only possible to higher taxonomic levels than the species, in many cases due to the impossibility of approaching the observed groups; (2) not covering other types of fisheries with potential impacts to the cetaceans carried out in the Madeira EEZ; (3) non-homogeneous geographical coverage of the area; (4) limited seasonal coverage. As a result, the suggested low impact on cetaceans of human activities in the offshore waters of Madeira Archipelago should be interpreted with some caution. Therefore, one of the needs for the long-term conservation of the cetaceans using the offshore waters of Madeira is the implementation of a plan to study and monitor the cetaceans' conservation status in those waters with a more robust approach. The substantially larger area and offshore condition, brings bigger logistical challenges and so a different plan should be developed.

The experience acquired during the project CMII can be used to improve field methodologies in order to obtain relevant quantitative data regarding the biological parameters of the most important species. Although the use of platforms of opportunity, such as the tuna fishing vessels used in CMII, are known to bring limitations to the data collection and consequently to the data analysis, they can provide a less cost way to collect data, with costs being mainly associated with the observers salaries. Another option is to use dedicated research platforms, such as oceanographic vessels, which will certainly allow collecting more robust data but are substantially more expensive. A cost-effective suggestion, which seems to provide a good balance between science and costs, is the creation of a long-term program to allow at least four observers to embark in tuna fishing vessels during all season every year. Further thought and consideration

of other approaches taken else were will allow us to work on a feasible strategy using acceptable methodologies to address this issue.

3. FINANCIAL SUPPORT

The above mentioned initiatives and needs will be presented to the Madeira Regional Government by the MWM after the conclusion of the project CMII, and a list of priorities will be set in order to implement them with in the logistic and budgetary constraints. The financial responsibility for implementing/developing those actions is of the Madeira Regional Government. Notwithstanding its responsibility, the MWM and governmental institution with responsibilities in the conservations issues addressed here, will also submit proposals for European, national and regional funding programs within its scope. The estimated costs to implement the measures proposed above are presented in table 2.

Table 2. Estimated costs associated with the yearly implementation of the measures/initiatives suggested in the section long term conservation needs. These measures are planned for 6 year cycles, although some need a continuous effort to collect data during the whole cycle and other do not.

Measure	Estimated costs (6 year cycle)	Estimated costs/year on average	comments
Monitoring plan – systematic surveys of inshore waters	198 000€	33 000€	Generates data (abundance and distribution estimates; monitoring human activities) useful and necessary for the management of the SCIp/SAC on bottlenose dolphins and cetaceans as well as for the management of the whalewatching activity. Effort – 5 years of surveys and one year for final analysis and reporting;
Monitoring plan – photo-id /mark-recapture	120 000€	30 000€	Generates data (population abundance estimates; movements, social structure of target species) useful and necessary for the management of the SCIp/SAC on bottlenose dolphins and cetaceans as well as for the management of the whalewatching activity; Effort – 3 years of surveys and one year for final analysis and reporting;
Monitoring plan – land observations and boarding whalewatching boats	75 000€	15 000€	Generates data (cetacean distribution; interactions between cetaceans and ww boats; availability of cetaceans; short-term impact of the activity on animals; monitoring boats behaviour) useful and necessary for the management of the whalewatching activity. Effort – 5 years of field work and 6 months final analysis and reporting;
Observer on platforms of opportunity (tuna fishing vessels)	240 000 €	40 000 €	Collects data to help assess the conservation statuses of cetaceans in Madeira offshore waters; 5 years of field work and 6 months final analysis and reporting;
Dedicated surveys in offshore waters	600 000€	100 000€	Alternative approach to observers on platforms of opportunity to collect data to assess the conservation statuses of cetaceans in Madeira offshore waters; – 4 years of field work and 1 year final analysis and reporting;