

<b>Action A.3</b>	Boat-Based Observations - Closing the Knowledge Gaps
<i>Description (what, how, where and when):</i> (max. 10.000 characters)	

Through this action, an assessment of the Conservation Status of the bottlenose dolphin (*Tursiops truncatus*), Common dolphins (*Delphinus delphis*) and Loggerhead turtles (*Caretta caretta*) and their foraging, migration and reproduction habitats in waters around Malta will be carried out. Based on the EC Document "Guidelines for the establishment of the Natura 2000 network in the marine environment", particularly Sections 4.3 and 4.4 which deal specifically with locating and assessing Annex II species and the rationale for the selection of sites for these species, and using examples presented in Appendix 4 this assessment will include a study of abundance, distribution and use of the habitat and their relation with the environmental and anthropic parameters that could affect them, as well as their level of residence and home range in the different areas.

An analysis of the oceanographic and anthropic parameters which are more likely to affect populations of dolphins will also be included. In addition, model-based estimates of abundance in coastal and offshore Maltese waters will be developed in order to provide a baseline for the follow-up of this action with a monitoring plan designed to analyse trends in conservation status.

The sampling procedures to be used in this action are based on those developed by the Spanish research group ALNITAK in the context of its "Alboran Sea cetacean, seabird and sea turtle monitoring programme" (1990-2012) and LIFE projects LIFE02NAT/E/8610 and LIFE07NAT/E/000732. This will allow comparative analysis and enhance NATURA 2000 networking.

The first part of this action will involve the processing of the data compilation of Action A1 in order to design the boat-based surveys and adjust timing and methodology. The visual and acoustic surveys will cover the entire project area, focusing on the locations identified through the maps described in Action A.2.

A grid of transects will be designed for the purposes of this action. The survey will cover these transects with a double look-out post for the visual survey and towing an acoustic array to detect and record cetacean clicks and whistles. The survey will be conducted with adequate sea state conditions with a maximum seastate of 3 (Douglas sea state scale).

The presence of cetaceans and turtles will be recorded, and sampling stations will be set to take oceanographic data such as sea surface temperature, salinity, depth and other anthropic data such as the maritime traffic, fisheries, etc. For the oceanographic data and in order to have a better picture of the oceanographic characteristics, satellite images of sea surface temperatures and chlorophyll concentrations from the satellites will be used.

The visual survey will provide information on the abundance and the distribution of cetaceans and marine turtles, whereas the acoustic data will be used to complement detection of cetaceans which are not spotted by the visual survey. This, together with the use of the double sighting platform should allow us to obtain the detectability function for the visual survey data analysis. The acoustic surveying has the additional benefit of detecting other species of cetaceans such as sperm-whales or beaked whales, which spend only very short periods at the surface and are therefore not easily observable through the visual survey.

Observers will combine unassisted vision with the use of 7x50mm binoculars. An angle marker and reticule will be used on each side of the platform to obtain the exact angle and distance of cetacean and sea turtle sighting. The general direction the animal is swimming towards will also be taken. The towed acoustic array will consist of two BENTHOS AQ4 elements in an oil-filled tube connected to the ship with a 200m Kevlar cable. The data generated by this hydrophone will be logged automatically into the laptop computers using the IFAW, LOGGER and PAMGUARD softwares.

When cetaceans are sighted, the vessel will approach them, following standard procedures and protocols for a correct approach that reduces harassment and disturbance. Such a close encounter will enable specific data on species, number of individuals, calves, behaviour, etc. to be collected. If possible and if seen of interest, the survey transect will be interrupted to obtain photo identification data using the RHIB.

Photo-Identification is a useful method to assess the level of residence of these populations in the areas considered. The process consists of taking pictures and identifying specific individuals using natural marks (scratches, notches, pigmentations, shapes, etc.) and cataloguing them to further compare them and determine which individuals have been "re-captured" where and when. The term "re-capture" is used when an individual that had been identified in a previous sighting is re-sighted. In this manner it is possible to determine whether specific animals use a specific area all year round (resident) or not (non-resident). Photo-identification is a very powerful tool for long-term monitoring programmes. In the context of this project however, while the development of photo-id catalogues and establishment of data collection and analysis protocols are expected, it is highly unlikely that there will be sufficient data for the application of mark recapture analysis.

...Text continues in Annex I

*Reasons why this action is necessary:* (max. 2.000 characters)

This action is necessary since it is the main data-collection effort of the project. The boat-based observations carried out by the Associated Beneficiary and the volunteers will contribute significantly to closing the current knowledge gaps regarding the conservation status and any important migratory routes of the species in question. The information collected from this action will continue to feed into Action A.2, serving to obtain a clearer picture of the areas in Maltese territorial waters which merit protection as SCIs.

The creation of Marine Protected Areas is nowadays considered as one of the best solutions to guarantee the regeneration of the marine ecosystems exposed to an important exploitation, as is the case of the Mediterranean Sea, and thus promote the conservation of its biodiversity. In order to assure the efficiency of these protected areas in the regeneration of the marine ecosystem, it is essential that their designation is adequate, resulting from a detailed analysis which takes into account both ecological and socio-economic aspects, as well as their follow up to make sure of their suitability in time, since the marine ecosystem is very dynamic.

In this marine environment, the spatial distribution of the species can be determined by two type of factors: fixed, such as the topography or physiography of the sea bed, and changeable such as the temperature, salinity, chlorophyll concentrations, etc. Therefore, for the identification of important conservation areas and follow up of their suitability, it is crucial to investigate the relative importance of those fixed and variable environmental parameters. At the same time, it is necessary to examine whether the distribution of the dolphins and turtles with regard to these parameters, fixed and variable, is in turn affected by the different needs of the individuals or groups in accordance to their social organization or their behaviour status at the time (feeding, migration, etc.).

*Beneficiary responsible for implementation:*

KAI

*Expected results (quantitative information when possible):* (max. 2.000 characters)

On an annual basis, the observations will result in detailed maps of sightings and superimposed over maps of other biotic and abiotic factors. These maps will eventually lead to the final result of the project - detailed maps of the sites to be proposed as pSCIs for these species.

It is expected that this action will result in the designation of at least one potential Natura 2000 Site for both species.

The action should also provide vital baseline data on abundance, distribution and habitat use, not only for the design of Natura 2000 sites but also for the future monitoring programmes in the framework of the Habitat Directive that will need to analyse trends in conservation status of species and habitats.

*Cost estimation (verify consistency with F forms):* (max. 2.000 characters)

Personnel Costs:

1 Captain 180 days at €200 per day = €36,000  
1 Technician 50 days at €196 per day = €9,800  
4 Technician 180 days at €130 per day = €93,600  
1 Sailor/Cook 180 days at €100 per day = €18,000

Total Personnel Costs = €157,400

Travel and Subsistence

42 trips Spain/Malta/Spain per year (7 crew replacements per year) = €17,424

Equipment

Video Camera

1 GOPRO set – GOPRO RACE (Includes 2 cameras and housings for 3D recording, fixations, memory cards and waterproof case) + lighting for underwater from Kanau SL = € 2,400

Cameras

1 CANON REFLEX EOS 7D + CANON ZOOM LENS = €1,600

Binoculars

FUJINON MARINE With Reticle 4 units at €500 per unit = €2,000

PCs

2 laptops at €1000 each = €2,000

Auxiliary Fast Boat

1 ASTEC V-520 PRO 5 METRE RHIB at €10,064 + HONDA  
BF90DK 90 HP OUTBOARD ENGINE at €5,800 EURO = €16,000

Total Equipment Costs = €24,000

Consumables:

Food for boat based observations

Estimated at €100/day x 30 days x 3 months x 2 years. These calculations are based on experience of surveys conducted in LIFE projects on vessels developing identical methodologies = €18,000

Fuel for boat based observations

Estimated at €4000 a month x 3 months x 2 years These calculations are based on experience of surveys conducted in LIFE projects on vessels developing identical methodologies. = €24,000

Port Costs for boat based observations

Estimated at €33/day x 30 days x 3 months x 2 years These calculations are based on experience of surveys conducted in LIFE projects on vessels developing identical methodologies. = €6,000

Total Consumables = €48,000

External Assistance

Chartering of Survey Vessel €1,350/day x 30 x 3 months x 2 years = €243,000

Total €489,824

*Pictures (If you wish to add a table or a picture, save it as an image file and upload it)*

