

# ***Benthic Habitat Research for Marine Natura 2000 Site Designation***

LIFE12 NAT/MT/000845

**Report of 2<sup>nd</sup> expedition - Fundación Oceana**



OCEANA / Enrique Talledo © LIFE BaHAR for N2K

**OCEANA**



**MALTA**

**Action A3: Marine Habitat Surveys**

October 2016

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**Corrigendum (August 2022):** References to Inshore Areas B and D (2016 surveys) have been corrected in Figure 1, Figure 2, Figure 3 and Annex I.

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## 1. INTRODUCTION

Natura 2000 is the centrepiece of the Habitats Directive, and thus of EU nature and biodiversity policy. It is intended to conserve particular habitats and species, with the aim that it should function as a network of sites. In order to comply with this European policy, Malta has already identified 5 Sites of Community Importance (SCIs) for inclusion in the Natura 2000 Network as Special Areas of Conservation (SAC). These SCIs in Malta are located mostly around the coast of the Maltese Islands, covering roughly an area of 190.79 km<sup>2</sup> and mainly intended to protect *Posidonia oceanica* beds (1120). Other key habitats and species listed in Annexes I and II of the Habitats Directive are underrepresented in Maltese sites, as identified through the last EU Biogeographical Seminar held in 2010. A lack of data impeded further designation efforts, because of the complex, costly, and resource-intensive nature of carrying out of the marine research required. In 2016, Malta has identified 3 areas as pSCIs for Annex II species and 8 areas as SPAs<sup>1</sup>, through the LIFE+ Migrate and LIFE+ Malta Seabird projects respectively.

The Project LIFE BaHAR for N2K - Life+ Benthic Habitat Research for Marine Natura 2000 Site Designation is coordinated by the Environment and Resources Authority (ERA), in partnership with Fundación Oceana, the Ministry for Sustainable Development, Environment and Climate Change (MSDEC) & Ministry for Sustainable Development, Environment and Climate Change, Department of Fisheries and Aquaculture (MSDEC-DFA) and the University of Malta - Department of Biology (UoM-DoB). It is intended to explore Maltese waters, identifying Annex I marine habitats listed in the Habitats Directive, primarily: 'Reefs' (1170), 'Submerged and partially submerged caves' (8330), and 'Sandbanks which are slightly covered by sea water all the time' (1110).

Under the **Action A3: Marine Habitat Surveys**, led by Fundación Oceana, a number of coastal and offshore areas were pre-selected, based on available data and expert knowledge<sup>2</sup>, to be surveyed during two at-sea expeditions, during 2015 and 2016. This report describes the study area, objective, methodology, and preliminary results from the ROV and SCUBA dives realized in the 2<sup>nd</sup> expedition, which was carried out from 26<sup>th</sup> of May to 31<sup>st</sup> of July 2016 in Maltese waters, after a 1<sup>st</sup> expedition carried out in 2015<sup>3</sup>. The areas to be surveyed during 2<sup>nd</sup> expedition in 2016 were selected following the

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<sup>1</sup> Two of the identified areas are both pSCIs and SPAs

<sup>2</sup> Ministry for Sustainable Development, the Environment and Climate Change – Department of Fisheries and Agriculture (2015). Activity Report 2014. Deliverable: Action A1 – Desktop Data Collection; Borg J.A., Evans J., Knittweis L., Schembri P.J. (2015). Report on the first analysis following the first data collection exercise carried out through Action A1. Action A2: Data Analysis and Interpretation. LIFE BaHAR for N2K (LIFE12 NAT/MT/000845).

Borg J.A., Evans J., Knittweis L., Schembri P.J. (2016). Report on the second analysis following the first surveying phase carried out through Action A3. Action A2: Data Analysis and Interpretation. LIFE BaHAR for N2K (LIFE12 NAT/MT/000845).

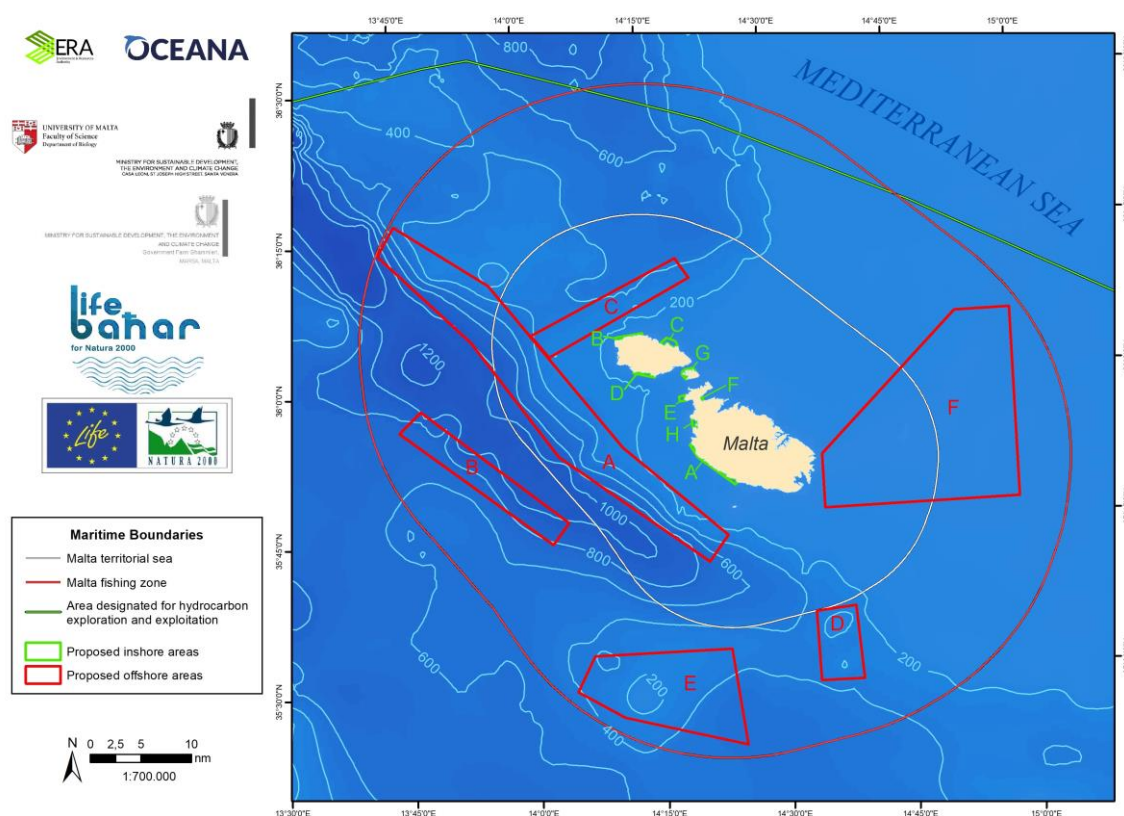
<sup>3</sup> Oceana (2015). Campaign report. Action A3: Marine Habitat Surveys. Benthic Habitat Research for Marine Natura 2000 Site Designation. LIFE BaHAR12 NAT/MT/000845.

outcomes of 1<sup>st</sup> expedition, redefining the limits of areas surveyed in 2015 by focusing efforts on specific areas where key information was still required.

## 2. PRELIMINARY DESCRIPTION OF THE STUDY AREA

According to the analysis of the data collected during 1<sup>st</sup> expedition in 2015, made by UoM - DoB and as recommended at the second report under Action A2<sup>4</sup>, the limits and number of surveying areas at 1<sup>st</sup> expedition in 2015, were redefined for the 2<sup>nd</sup> expedition<sup>5</sup>. In this sense, fourteen areas were recommended to be surveyed in the 2016 expedition, six of them located at offshore waters and eight at inshore waters. The offshore areas occupy a surface of 2404.70 km<sup>2</sup>, while the inshore areas cover a surface of 15.49 km<sup>2</sup>; all areas are within the 25 NM Fisheries Management Zone. Figure 1 shows the distribution of the 2016 sampling areas, and two tables specifying the geographical coordinates of their boundaries can be found in Annex I.

Figure 1. Sampling areas recommended at 2016 expedition



<sup>4</sup> Borg, J. A., Evans, J., Knittweis, L., Schembri, P. J. (2015). Report on the second analysis following the first surveying phase carried out through Action A3. ACTION A2: Data Analysis and Interpretation. LIFE BaHAR for N2K (LIFE12 NAT/MT/000845). University of Malta, Faculty of Science, Department of Biology.

<sup>5</sup> Borg J.A., Evans J., Knittweis L., Schembri P.J. (2016). Report on the second analysis following the first surveying phase carried out through Action A3. Action A2: Data Analysis and Interpretation. LIFE BaHAR for N2K (LIFE12 NAT/MT/000845).

### 3. OBJECTIVE

LIFE BaHAR for N2K will enable Malta to conserve important habitats, comply with EU Directives and international commitments, and establish a coherent network of marine protected areas by 2018. The benefits from this protection will contribute to the overarching goals of several EU directives, including the Habitats and Birds Directives (92/43/CEE and 79/409/CEE) and the Marine Strategy Framework Directive (2008/56/CE), as well as the EU Biodiversity Strategy for 2020 and other multilateral environmental agreements to which Malta is signatory.

Therefore, the main aim of this project is to **survey, identify and evaluate the most valuable habitats in Maltese waters with the preliminary objective of identifying and designating new marine SCIs (or extend the sites already identified) for their protection**. Thus, the habitats that will be further investigated within the scope of the project are the aforementioned ones which are listed in Annex I of the Habitats Directive:

- *Sandbanks which are slightly covered by sea water all the time* (1110)
- *Reefs* (1170)
- *Submerged and partially submerged sea caves* (8330)

### 4. METHODOLOGY

The second expedition undertaken as part of Action A3 within the framework of the LIFE BaHAR Project was carried out, like the 1<sup>st</sup> expedition, on board the vessel *Oceana Ranger*, a Ketch catamaran with up to fourteen crew members. From the end of May to the end of July 2016, underwater video footage was recorded from 112 transects along the Maltese seabed, down to a maximum depth of approx. 1000 m, and by 30 scuba dives along Malta's inshore waters.

For image recording at offshore areas, a Saab Seaeye Falcon DR ROV was used, equipped with a High Definition Video (HDV) camera of 480 TVL with Minimum Scene Illumination 2.0 LUX (F1.4), Pick Up Device ½" CCD, Image Sensor, and spherical ½ of 3.8 mm and wide-angle lenses. During ROV transects, *Oceana Ranger* sailed at an average speed of 0.2 knots, filming both in HD and low resolution, and simultaneously recording position, depth, course and time. Considering the average speed and the wide angle of the camera (i.e., it was able to film transects of ca. 1.5 meters width), the ROV allowed the observation of around 650 m<sup>2</sup> (±6 m<sup>2</sup>) per hour of seabed.

The areas designated for cave and sandbank identification were surveyed by a professional team of four scuba divers, two of them equipped with underwater photo and video cameras and of two of them as security divers. Compared to 2015, the number of scuba dives has increased from 12 to 30, because of the need of completely survey all the eight proposed inshore areas. The use of scooters has resulted in completion of



close to 100% of the proposed inshore areas, by increasing distances covered at every dive.

Most of the taxonomic identification of observed species was done visually, as it was selected to be the most suitable method according to the characteristics of the project. Samples of key habitat-forming species were also collected (by means of the robotic arm of the ROV and directly by SCUBA divers) for detailed analyses to confirm preliminary identification. A total of 84 samples were collected by these means which will be analyzed by specialized taxonomists.

## **5. DESCRIPTION OF THE SURVEYED AREA**

All fourteen recommended areas have been surveyed during the 2016 expedition, of which six were in offshore waters and eight were in inshore waters. Throughout the 67 days of the expedition, 112 ROV transects were conducted offshore and 30 scuba dives in inshore waters. ROV transects are represented in Figure 2. Information about ROV positions and depths can be found in Annex II and the initial and final positions of the scuba transects are outlined in Annex III.

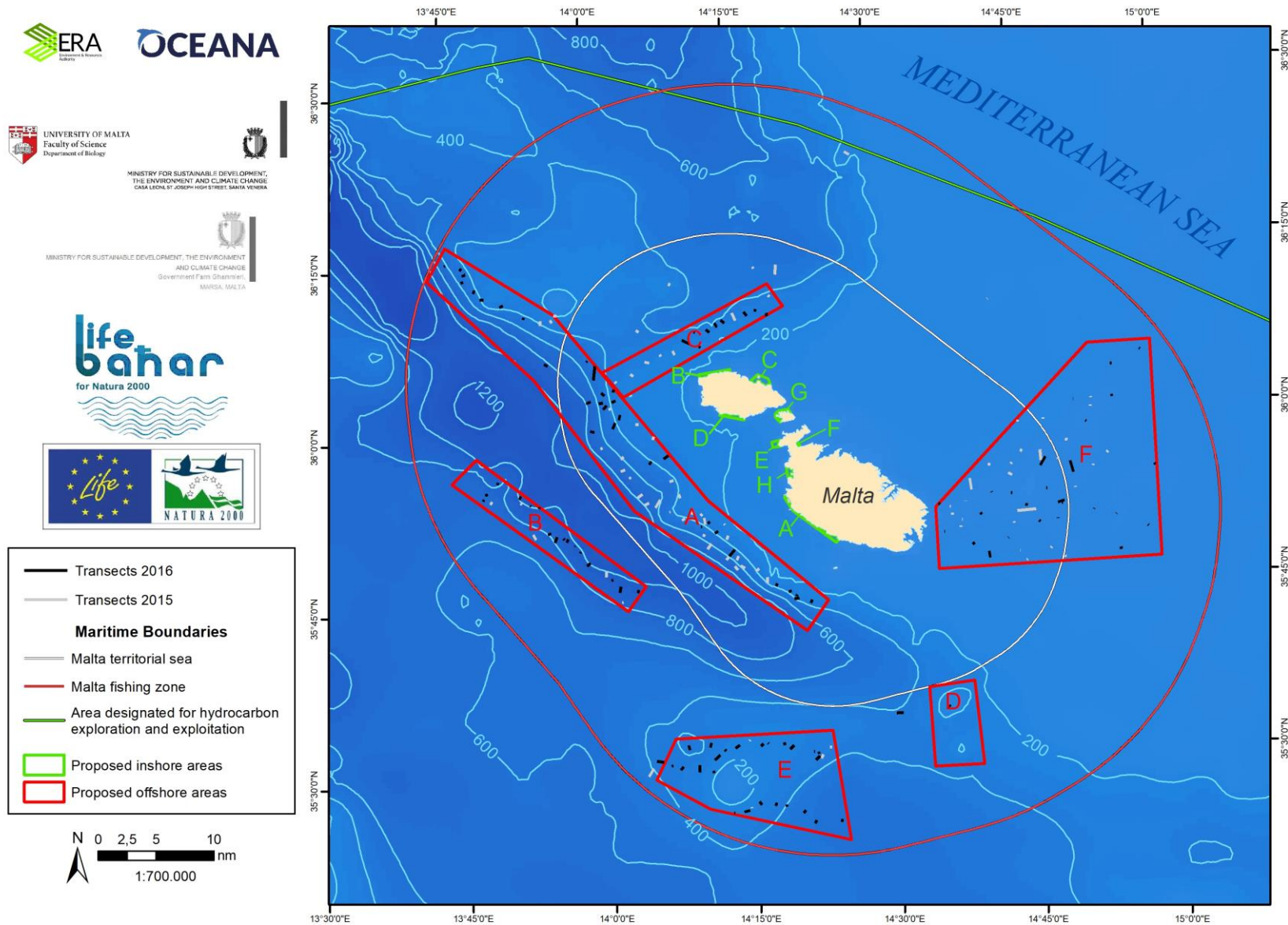
### Offshore areas

In 2015, reefs at polygons, now named A, B, C and E were documented. As a result, this year new surveys have been carried out in these areas. The objective behind these surveys was to complete information about these known reefs and to collect new information in those parts of the polygons still not surveyed. Area D has also been surveyed due to possibility of raised plateau/seamount, but the presence of any type of reef could not be proven, as no elevations were documented. Finally, Area F was widely surveyed with the objective of documenting the different habitats present, not only reefs but maërl among others. The team also compiled sound data on rhodolith beds and coralligenous concretions present.

### Inshore areas

All eight recommended inshore areas were surveyed by means of scuba diving. At Areas F, G and H, snorkeling transects were also done, together with scuba dives, in order to survey very shallow sea beds, and in some cases almost reaching the surface. Together with the findings from first expedition in 2015, we have been able to confirm the presence of several marine caves in these areas (exact number to be determined after having analyzed all SCUBA videos from 2016 expedition), and documented sandy elevations that might have the potential to be considered sandbanks once the data has been fully analyzed (to be done over the next few months).

Figure 2. ROV transects in 2016 expedition





## 6. PRELIMINARY RESULTS

Presented below are the main preliminary findings from the 2016 expedition. Based on a first approach from 112 ROV transects and 30 scuba dives, the team has compiled approximately:

- 200 hours of ROV footage
- 2,900 screenshots from ROV transects
- 1,500 scuba videos
- 1,500 scuba pictures

### Main habitats targeted

- *Sandbanks which are slightly covered by sea water all the time* (1110)  
In order to document areas where sandbanks could be present, five out of a total of 30 scuba dives were carried out along the Maltese coast, in sandy inshore areas C, F, G and H. At three of these areas (inshore F, G and H) sandy elevations were documented and measured. Data collected is being analyzed to determine if these features are to be considered sandbanks, according to the Interpretation Manual of European Union Habitats<sup>6</sup> and the relevant conclusions of the EU Marine Biogeographic Seminar<sup>7</sup>. No sandbanks were found during the two surveys carried out at inshore area C, but other interesting habitats such as a *Posidonia oceanica* meadow were documented.



Diver surveying sandy features. OCEANA/ Carlos Minguell © LIFE BaHAR for N2K

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<sup>6</sup> European Commission DG Environment (2013). Interpretation Manual of European Union Habitats. Eur 28. Nature ENV B.3.

<sup>7</sup> Borg, J.A., Knittweis, L. & Schembri, P.J. (2013) Compilation of an interpretation manual for marine habitats within the 25 NM Fisheries Management Zone around the Republic of Malta. [MEPA tender reference: T2/2013]. MEPA, Malta; 218pp

- *Reefs (1170)*

New areas showing a presence of habitat type *Reef* have been documented at offshore areas A, B, C, E and F. The areas surveyed in Area D were mostly muddy bottoms and no elevations at the bottom were registered by the catamaran sounder. Other habitats of interest have also been documented, such as muddy and detritic bottoms with important communities of cnidarians, sponges and other invertebrates and fish living on them.

- At area A, 32 ROV transects were carried out, compiling new information on rocky areas with high biodiversity, including areas dominated by reef-forming species as white corals (*Madrepora oculata* and *Lophelia pertusa*), black corals (mainly *Leiopathes glaberrima*), gorgonians (mainly *Callogorgia verticillata*) dead coral framework (dead *Dendrophyllia* sp., dead *Madrepora oculata*), sponge reefs (several species), dead sponge reefs (new areas with dead lithistid, in some parts with medium-sized black coral colonies living on them), dead giant oysters (*Neopycnodonte zibrowii*), relevant barnacle aggregations (cf. *Pachylasma giganteum*), among others yet to be determined.
  - At area B, 17 transects were carried out. Rocky outcrops with live anthozoans are the most relevant findings from this area. Additionally, it is worth noting new sightings of Pennatulacea *Protoptilum carpenteri* and of living *Dendrophyllia cornigera* colonies.
  - At area C, a total of 9 transects were undertaken, where new areas with dead lithistid reefs were discovered and documented, among areas with muddy bottoms.
  - At area D, no elevations were found, but detritic bottoms were documented along one transect, with relevant species documented as the rays *Dipturus oxyrinchus* and *Raja* cf. *clavata* and the eel cf. *Synaphobrancus kaupii*.
  - At area E, a total of 25 new transects were carried out, documenting relevant habitats such as extensive dead coral framework and impressive white coral reefs at several parts of this polygon. Throughout these surveys, several sightings of a new Asteroidea species for the Mediterranean Sea were registered and a sample was also taken in order to confirm the species in question.
  - At area F, from five work days and 27 transects carried out, several coralligenous concretions were found and documented, among rhodolith beds and green algae communities. In some areas, these coralligenous concretions rise more than two meters high from the surrounding sea bottom, with several coral species and other invertebrates also present, so these areas will also have to be taken into account with other types of reefs found during this expedition.
- *Submerged and partially submerged sea caves (8330)*
- Up to 53 emergent and fully submerged marine caves of different shapes and sizes were found in inshore areas A, B, D and E. All the caves found, together with the sandy areas surveys, are shown at Figure 3.

Dozens of species, mainly invertebrates, have been documented with sightings of protected species such as *Charonia lampas* and *Astroides calycularis* or rare species like *Neomaja goltziana*. Detailed descriptions of the caves and crevices have been made by the divers.

Several findings of deep-sea caves during offshore surveys, i.e. a big cave found in polygon A at 438m depth, will be added to the four deep-sea caves found during the 2015 expedition. The exact number and type of features will be determined following a new review of all the compiled ROV footage.



Divers surveying a submerged marine cave. OCEANA/ Carlos Minguell © LIFE BaHAR for N2K

### Other findings of interest

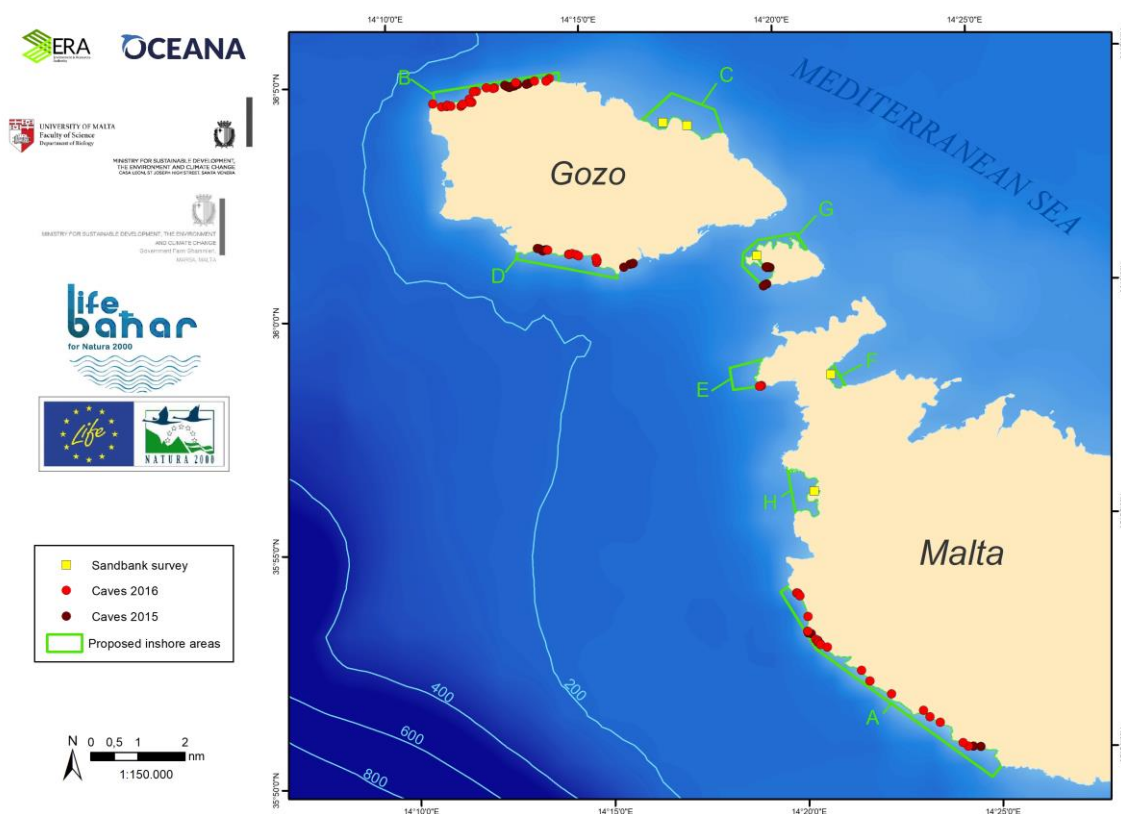
During the surveys on the 2016 expedition, apart from the targeted habitats, other habitats of interest were also documented. All the information compiled on these habitats will be analyzed and taken into account. Amongst these habitats there were:

- Rhodolith beds at offshore Area F
- Dead oyster bottom (cf. *Neopycnodonte cochlear*) found on the East side of offshore polygon F
- *Centrostephanus longispinus* highly abundant at offshore Area F
- *Isidella elongata* gardens at offshore polygons B and E
- *Funiculina quadrangularis* forest with impressive density of colonies at offshore Area E
- *Kophobelemnon stelliferum* communities at offshore Areas A , B and E

- Dead brachiopods bottom (species undetermined) at West side of offshore polygon A
- Aggregations of dead (fossilized?) shells of cf *Acesta excavata* at offshore Area B

As in 2015, lines and other fishing gear were found heavily entangled on rocks and the sessile species growing on them, mainly corals. This is the main threat we have documented in the offshore waters, while in inshore areas, litter is commonly present both floating on the surface and lying on the sea floor.

**Figure 3. Caves documented and sandbanks surveys at inshore areas**



## ANNEX I

**Geographical coordinates (WGS84 datum) indicating the boundaries of the inshore areas selected for surveying during the 2nd Action A3 expedition. Area letters correspond to those shown in Figure 1.**

OFFSHORE AREAS	Latitude	Longitude
A	36° 16,860' N	13° 44,898' E
	36° 10,578' N	13° 56,058' E
	35° 53,754' N	14° 11,454' E
	35° 44,490' N	14° 23,646' E
	35° 41,928' N	14° 21,270' E
	35° 53,148' N	14° 03,660' E
	36° 04,956' N	13° 53,712' E
	36° 14,022' N	13° 42,816' E
B	35° 58,290' N	13° 47,292' E
	35° 46,536' N	14° 04,536' E
	35° 44,430' N	14° 02,556' E
	35° 56,256' N	13° 44,616' E
C	36° 12,360' N	14° 18,756' E
	36° 10,362' N	14° 20,316' E
	36° 03,126' N	14° 03,060' E
	36° 05,364' N	14° 00,942' E
D	35° 36,750' N	14° 38,544' E
	35° 29,418' N	14° 39,108' E
	35° 29,454' N	14° 33,966' E
	35° 36,420' N	14° 33,780' E
E	35° 33,072' N	14° 06,924' E
	35° 33,114' N	14° 23,394' E
	35° 23,472' N	14° 24,756' E
	35° 26,796' N	14° 10,206' E
	35° 29,610' N	14° 04,734' E
F	35° 52,074' N	14° 35,382' E
	35° 46,662' N	14° 35,412' E
	35° 46,704' N	14° 58,896' E
	36° 05,604' N	14° 58,890' E
	36° 05,598' N	14° 52,236' E

INSHORE AREAS	Latitude	Longitude
A	35° 53,794' N	14° 19,727' E
	35° 53,678' N	14° 19,521' E
	35° 52,415' N	14° 20,359' E
	35° 49,472' N	14° 24,748' E
	35° 49,699' N	14° 24,996' E
B	36° 04,469' N	14° 11,199' E
	36° 04,775' N	14° 11,168' E
	36° 05,052' N	14° 14,435' E
	36° 04,852' N	14° 14,442' E
C	36° 03,927' N	14° 16,516' E
	36° 04,480' N	14° 17,339' E
	36° 04,073' N	14° 18,431' E
	36° 03,541' N	14° 18,615' E
D	36° 01,285' N	14° 13,159' E
	36° 01,111' N	14° 13,119' E
	36° 00,583' N	14° 15,694' E
	36° 00,698' N	14° 15,695' E
E	35° 58,683' N	14° 19,399' E
	35° 58,530' N	14° 18,492' E
	35° 58,057' N	14° 18,556' E
	35° 58,119' N	14° 19,396' E
F	35° 58,508' N	14° 21,139' E
	35° 58,013' N	14° 21,457' E
G	36° 00,237' N	14° 19,459' E
	36° 00,695' N	14° 18,947' E
	36° 00,964' N	14° 18,980' E
	36° 01,228' N	14° 19,380' E
	36° 01,332' N	14° 20,380' E
	36° 00,948' N	14° 20,645' E
H	35° 56,298' N	14° 19,847' E
	35° 55,335' N	14° 20,005' E



## ANNEX II

### Data on ROV sampling transects during 2016 expedition

N	Date	ROV	Ini Lat N	Ini Lon E	End Lat N	End Lon E	Z ini (m)
1	27-may-16	C01	36 07,8350	14 09,4838	36 07,4778	14 10,3100	372
2	27-may-16	C02	36 07,2109	14 11,2779	36 07,1190	14 11,4320	218
3	28-may-16	A01	35 57,1250	14 05,4638	35 57,4348	14 05,7206	437
4	31-may-16	A02	35 57,5523	14 06,9887	35 57,8460	14 07,5240	350
5	31-may-16	A03	36 00,4006	14 01,7875	36 00,9496	14 02,0651	683
6	31-may-16	A04	36 01,6339	14 02,6400	36 01,1480	14 02,4945	256
7	1-jun-16	C03	36 09,4314	14 13,7081	36 09,1096	14 14,0573	370
8	2-jun-16	D01	35 34,7144	14 35,7014	35 34,5832	14 35,8456	377
9	2-jun-16	D02	35 34,2844	14 30,8710	35 34,2923	14 30,1721	484
10	3-jun-16	E01	35 26,9490	14 15,5947	35 27,2393	14 15,3566	446
11	3-jun-16	E02	35 26,6540	14 18,2063	35 26,8515	14 18,1455	534
12	3-jun-16	E03	35 31,5048	14 11,4872	35 31,0754	14 10,8726	493
13	4-jun-16	E04	35 30,7085	14 09,2627	35 30,0763	14 09,2786	421
14	4-jun-16	E05	35 32,4839	14 08,2188	35 32,0600	14 08,3591	424
15	5-jun-16	C04	36 08,3810	14 12,4660	36 08,6493	14 12,0919	235
16	5-jun-16	C05	36 08,4840	14 10,7800	36 08,4558	14 10,9329	238
17	5-jun-16	C06	36 10,1404	14 17,2658	36 10,0527	14 17,5231	324
18	5-jun-16	C07	36 09,8023	14 18,5597	36 09,5255	14 18,5910	328
19	7-jun-16	A05	35 46,2073	14 18,3414	35 45,9478	14 18,2144	248
20	7-jun-16	A06	35 45,1326	14 20,3682	35 44,9847	14 20,2685	309
21	7-jun-16	A07	35 44,5970	14 21,9402	35 44,3363	14 21,7604	305
22	8-jun-16	A08	36 11,6447	13 50,8050	36 11,4840	13 50,4094	272
23	8-jun-16	A09	36 12,2371	13 48,7768	36 12,2662	13 48,3821	439
24	9-jun-16	A10	36 14,5501	13 46,8216	36 14,5143	13 46,8919	277
25	9-jun-16	A11	36 14,4664	13 46,9418	36 14,4000	13 46,5550	319
26	18-jun-16	B01	35 50,7330	13 55,1541	35 51,2512	13 55,4454	545
27	18-jun-16	B02	35 50,9582	13 56,1736	35 51,0844	13 56,0870	640
28	18-jun-16	B03	35 51,4740	13 54,4880	35 51,5779	13 54,8235	580
29	21-jun-16	A12	35 49,3353	14 14,0485	35 48,7779	14 13,4363	286
30	21-jun-16	A13	35 45,4868	14 19,8119	35 45,3980	14 19,4698	327
31	21-jun-16	A14	35 44,7961	14 20,5745	35 44,7598	14 20,0202	410
32	22-jun-16	A15	35 51,0361	14 12,3715	35 50,8485	14 12,0304	426
33	22-jun-16	A16	35 51,4819	14 10,6874	35 51,4962	14 10,5846	637
34	22-jun-16	A17	35 51,8984	14 11,3501	35 51,6961	14 11,5164	374
35	23-jun-16	A18	36 02,5004	14 01,2682	36 02,1383	14 00,8712	252
36	24-jun-16	E06	35 31,3720	14 21,3890	35 31,3643	14 21,2996	363
37	24-jun-16	E07	35 31,2964	14 21,7746	35 31,1262	14 21,8485	245
38	25-jun-16	E08	35 30,9409	14 21,9196	35 30,6048	14 21,4972	552
39	25-jun-16	E09	35 32,0219	14 19,2775	35 31,6708	14 18,8319	370
40	25-jun-16	E10	35 32,1831	14 18,4229	35 32,1593	14 18,1157	260
41	26-jun-16	E11	35 32,2554	14 13,5858	35 31,9961	14 13,1121	394
42	26-jun-16	E12	35 32,2632	14 16,6312	35 32,3222	14 16,5425	239
43	29-jun-16	F01	35 49,0255	14 42,8917	35 49,0113	14 42,8682	100
44	29-jun-16	F02	35 51,3458	14 40,0444	35 51,1873	14 40,1922	71
45	30-jun-16	F03	35 47,9431	14 40,7584	35 47,3584	14 40,8264	105
46	30-jun-16	F04	35 50,3478	14 46,1588	35 50,2681	14 46,3363	81
47	30-jun-16	F05	35 51,9006	14 45,0012	35 51,6913	14 44,8964	64
48	30-jun-16	F06	35 53,1538	14 47,2181	35 53,1455	14 47,1164	62

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49	30-jun-16	F07	35 53,1247	14 41,3172	35 53,0633	14 41,3799	70
50	30-jun-16	F08	35 52,3703	14 35,6896	35 52,3020	14 35,8472	70
51	1-jul-16	F09	35 47,3830	14 51,3405	35 47,3835	14 51,3614	91
52	1-jul-16	F10	35 47,6261	14 54,6367	35 47,3902	14 54,6726	93
53	1-jul-16	F11	35 50,5894	14 54,3755	35 50,5411	14 54,3225	93
54	1-jul-16	F12	35 51,8447	14 48,2519	35 52,0061	14 48,9553	77
55	1-jul-16	F13	35 52,9318	14 43,3580	35 52,9255	14 43,4981	65
56	2-jul-16	A19	36 03,7091	14 02,1779	36 03,7408	14 01,8686	236
57	2-jul-16	A20	36 03,3452	14 01,0640	36 03,6187	14 00,7595	274
58	3-jul-16	A21	36 02,7253	14 00,8803	36 02,6939	14 00,4322	283
59	3-jul-16	A22	36 02,8715	14 02,2193	36 02,7311	14 01,7999	236
60	4-jul-16	E13	36 30,7934	14 06,5283	35 30,7407	14 06,3397	456
61	4-jul-16	E14	35 31,1195	14 05,5773	35 31,2447	14 04,8207	460
62	5-jul-16	E15	35 30,6360	14 07,6150	35 30,3562	14 07,3006	431
63	5-jul-16	E16	35 31,9606	14 11,9917	35 31,8192	14 12,1468	325
64	6-jul-16	B04	35 45,9815	14 03,6770	35 46,2791	14 03,7670	873
65	6-jul-16	B05	35 47,2135	14 00,9430	35 47,2656	14 01,1210	750
66	7-jul-16	F14	36 00,7454	14 50,4667	36 00,7726	14 50,4214	116
67	7-jul-16	F15	36 03,6587	14 54,7256	36 03,6782	14 54,5200	109
68	7-jul-16	F16	36 04,7645	14 57,7776	36 04,8310	14 57,6966	98
69	7-jul-16	F17	36 00,7630	14 54,5471	36 00,9725	14 54,5235	87
70	7-jul-16	F18	35 58,7413	14 51,7362	35 58,8307	14 51,5986	80
71	7-jul-16	F19	35 54,3917	14 50,0720	35 55,3928	14 49,7848	60
72	7-jul-16	F20	35 55,1492	14 46,6021	35 55,8906	14 47,2150	62
73	8-jul-16	F21	35 54,7341	14 58,6281	35 54,5685	14 58,7517	88
74	8-jul-16	F22	35 49,3394	14 57,6893	35 49,4004	14 57,6088	96
75	8-jul-16	F23	35 51,1246	14 52,0674	35 51,0505	14 52,0412	88
76	8-jul-16	F24	35 51,7932	14 48,6983	35 51,7330	14 44,7955	86
77	8-jul-16	F25	35 50,5232	14 48,1583	35 50,4597	14 48,1599	84
78	8-jul-16	F26	35 48,6265	14 30,0625	35 48,7524	14 39,3154	107
79	8-jul-16	F27	35 49,8858	14 36,1595	35 49,9034	14 36,2298	91
80	9-jul-16	A23	36 00,1852	13 59,8735	36 00,3038	13 59,3739	748
81	10-jul-16	A24	36 05,9894	14 00,2098	36 04,7358	14 00,0028	556
82	10-jul-16	A25	36 02,8969	13 59,6200	36 02,7506	13 59,0918	581
83	11-jul-16	B06	35 46,0885	14 01,7509	35 46,6298	14 01,9124	750
84	11-jul-16	B07	35 48,5575	13 58,4519	35 48,8082	13 58,7998	696
85	11-jul-16	B08	35 50,7145	13 56,4228	35 50,9948	13 56,5699	635
86	12-jul-16	B09	35 49,7109	13 57,7781	35 49,8660	13 57,8571	752
87	12-jul-16	B10	35 50,3394	13 57,2395	35 50,4030	13 57,2718	705
88	12-jul-16	B11	35 53,7656	13 53,6756	35 53,9452	13 53,7251	655
89	12-jul-16	B12	35 55,1096	13 48,2446	35 55,3314	13 48,1197	540
90	13-jul-16	B13	35 56,1276	13 49,8361	-	-	-
91	13-jul-16	B14	35 54,8140	13 47,9060	35 54,6489	13 47,7892	466
92	18-jul-16	A26	36 06,4598	13 59,4125	36 06,3468	13 59,3518	570
93	18-jul-16	A27	36 06,1777	13 55,2337	36 06,3275	13 54,8564	736
94	19-jul-16	E17	35 26,7808	14 17,0368	35 27,0544	14 17,1735	551
95	19-jul-16	E18	35 26,3793	14 12,7445	35 26,3614	14 12,6217	550
96	20-jul-16	E19	35 26,0332	14 19,9419	35 26,2921	14 20,1616	908
97	20-jul-16	E20	35 25,0613	14 23,8741	35 25,3326	14 23,9532	550
98	20-jul-16	E21	35 25,3483	14 21,2272	35 25,0572	14 21,0887	573
99	20-jul-16	E22	35 26,5041	14 14,3447	35 26,4205	14 13,7249	520
100	21-jul-16	E23	35 29,9300	14 10,7825	35 30,1414	14 10,6810	650
101	21-jul-16	E24	35 32,2839	14 16,0875	35 32,0789	14 15,7894	240
102	21-jul-16	E25	35 32,5920	14 10,6302	35 32,1711	14 10,4977	394

*Report of 2<sup>nd</sup> expedition. Action A3: Marine Habitats Surveys.*

<b>103</b>	23-jul-16	B15	35 54,6775	13 51,5939	35 54,9392	13 51,7977	807
<b>104</b>	23-jul-16	B16	35 54,0099	13 52,8267	35 54,0926	13 52,7369	815
<b>105</b>	24-jul-16	B17	35 56,0551	13 49,3878	35 56,2494	13 49,4556	775
<b>106</b>	28-jul-16	A28	36 10,5328	13 52,9047	36 10,3428	13 52,8181	390
<b>107</b>	28-jul-16	A29	36 13,1087	13 47,8299	36 12,8153	13 47,6935	738
<b>108</b>	29-jul-16	A30	36 13,7077	13 46,5948	36 13,9555	13 46,4913	620
<b>109</b>	29-jul-16	A31	36 15,3609	13 44,8648	36 15,2966	13 44,7301	720
<b>110</b>	29-jul-16	A32	36 15,0651	13 46,5741	36 14,8425	13 46,3320	340
<b>111</b>	31-jul-16	C08	36 09,6651	14 16,4789	36 10,0353	14 16,1465	248
<b>112</b>	31-jul-16	C09	36 08,8077	14 13,2625	36 09,1917	14 13,0180	238

## ANNEX III

### Data on SCUBA surveys during 2016 expedition

N	Date	Dive	Area	Lat ini N	Lon ini E	Lat end N	Lon end E
1	26-may-16	SC01	iF	35 58,274	14 21,095	35 58,274	14 21,095
2	28-may-16	SC02	iH	35 55,793	14 20,517	35 55,793	14 20,517
3	29-may-16	SC03	iG	36 00,897	14 19,332	36 00,897	14 19,332
4	01-jun-16	SC04	iD01	36 01,148	14 14,473	36 01,106	14 14,730
5	06-jun-16	SC05	iA01	35 52,803	14 20,150	35 52,599	14 20,415
6	06-jun-16	SC06	iA02	35 52,599	14 20,415	35 52,242	14 20,821
7	11-jun-16	SC07	iB01	36 04,801	14 12,988	36 04,788	14 12,612
8	12-jun-16	SC08	iD02	36 00,681	14 15,695	36 01,035	14 15,177
9	12-jun-16	SC09	iB02	36 04,844	14 14,444	36 04,910	14 13,866
10	15-jun-16	SC10	iC01	36 03,861	14 17,072	36 03,861	14 17,072
11	15-jun-16	SC11	iC02	36 03,773	14 17,701	36 03,773	14 17,701
12	17-jun-16	SC12	iB03	36 04,923	14 13,873	36 04,881	14 13,322
13	17-jun-16	SC13	iB04	36 04,788	14 12,612	36 04,743	14 12,202
14	20-jun-16	SC14	iD03	36 01,035	14 15,177	36 01,106	14 14,730
15	20-jun-16	SC15	iD04	36 01,268	14 13,917	36 01,203	14 14,097
16	27-jun-16	SC16	iB02bis	36 04,879	14 14,110	36 04,879	14 14,110
17	02-jul-16	SC17	iB05	36 04,523	14 11,147	36 04,451	14 11,508
18	09-jul-16	SC18	iE01	35 58,529	14 19,211	35 58,529	14 19,211
19	14-jul-16	SC19	iD05	36 01,229	14 13,174	36 01,251	14 13,773
20	17-jul-16	SC20	iA03	36 50,142	14 24,296	35 50,329	14 23,728
21	22-jul-16	SC21	iA04	35 53,794	14 19,727	35 53,119	14 20,196
22	22-jul-16	SC22	iA05	35 52,094	14 21,080	35 51,773	14 21,510
23	23-jul-16	SC23	iB06	36 04,697	14 12,160	36 04,515	14 11,980
24	24-jul-16	SC24	iA06	35 50,349	14 23,372	36 50,823	14 23,210
25	25-jul-16	SC25	iA07	35 50,823	14 23,210	35 51,040	14 22,562
26	27-jul-16	SC26	iA08	35 51,089	14 22,587	35 51,360	14 22,252
27	27-jul-16	SC27	iA09	35 51,746	14 21,573	35 51,566	14 21,763
28	27-jul-16	SC28	iE02	35 58,105	14 19,278	35 58,119	14 19,189
29	30-jul-16	SC29	iB07	36 04,482	14 11,519	36 04,474	14 11,686
30	30-jul-16	SC30	iB08	36 04,474	14 11,686	36 04,480	14 11,921