

# HABITAT MAPPING



Classification of Professor Luiz Saldanha  
Marine Park habitats

BIOMARES  
Program  
Task period:  
2007-2010

## INTRODUCTION

The EUNIS system is a habitat classification system developed by the European Topic Center for Nature Protection and Biodiversity (ETC./NPB in Paris) for the European Environment Agency (EEA) and European Environmental Information Observation Network (EIONET). This type of classification makes it possible to uniformly classify terrestrial habitats, freshwater habitats and marine habitats across Europe.

With this classification system, it is possible to obtain combined information of some key variables of habitats: bathymetry, type of substrate, sediment size, light intensity, wave energy and currents on the seabed, composition of the benthic macrofauna with respect to species and its abundance.

## OBJECTIVE

To classify and map the benthic habitats of Professor Luiz Saldanha Marine Park according to the EUNIS classification system.

## METHODS

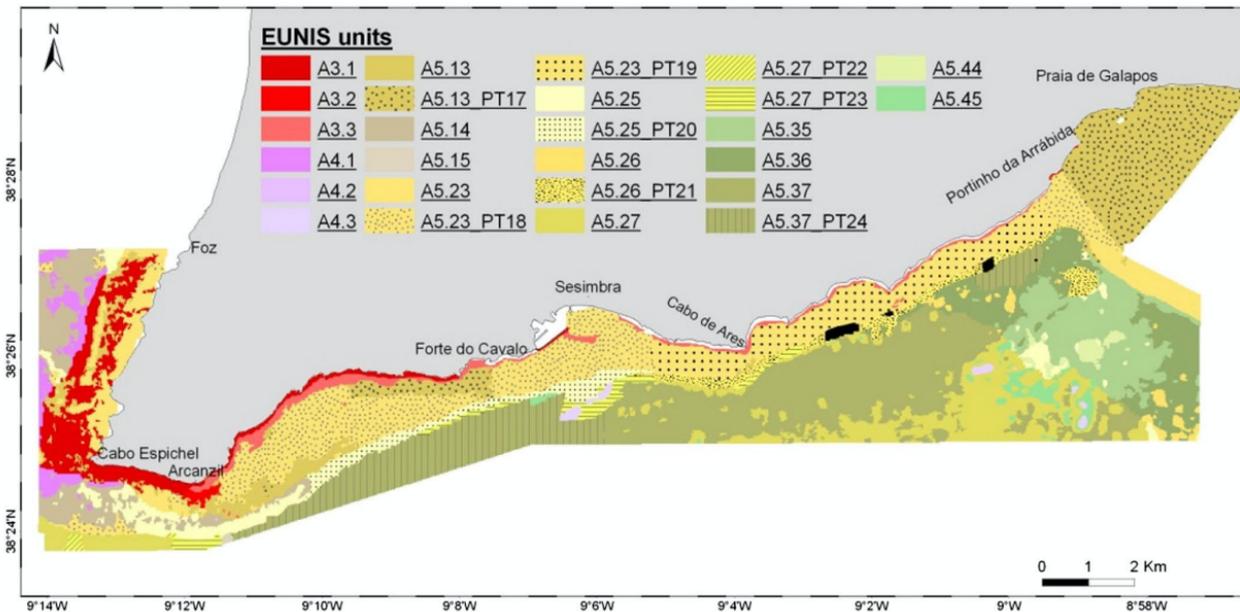
The study covered the entire Marine Park and an adjacent offshore area located east of Sesimbra up to 100 meters deep.

- A Furuno FCV-620 single beam echosounder (50 kHz, 0.6 kW) and the RoxAnn seabed discriminator system (AGDS) were used for this study. The transects were spaced approximately 150 meters apart and their orientation was mostly north-south and parallel to the coast.
- A sidescan sonar (Starfish 450 F, 450 kHz) was also used in areas with complex morphology, up to 40 meters deep, in transects totaling 261 km.
- Underwater filming was performed at 82 stations using a video camera (Kongsberg-Maritime OE1324 monochrome). These black and white images were mostly used as complementary information to validate the information collected by AGDS.
- Sediment samples for particle sizing and characterization of the benthic macrofauna were collected using a Smith-McIntyre dredge (0.1m<sup>2</sup>), in 137 predefined locations according to the bathymetry, in transects perpendicular to the coast.
- Information about light intensity, ripple and currents was also collected.
- The collected data and samples were processed, analyzed and combined.

## MAIN RESULTS

This work allowed the elaboration of a map of medium scale habitats where 26 distinct sub-coastal habitats are broken down. (Figure 1)

Eight of the identified habitats did not match the current classifications, which makes them potential new habitats to be submitted to EUNIS.



**Figure 1. Marine habitats map (EUNIS classification) of the Professor Luiz Saldanha Marine Park (Henriques V., et al (2014))**

EUNIS habitats identified in the study area (SW Portugal), including new habitat types with codes, suggested names, areas and correspondence with SIMPROF groups.

Level	EUNIS code	Unit designation	SIMPROF groups	Area (km <sup>2</sup> )
3	A3.1	Atlantic and Mediterranean high energy infralittoral rock		4.215
3	A3.2	Atlantic and Mediterranean moderate energy infralittoral rock		0.199
3	A3.3	Atlantic and Mediterranean low energy infralittoral rock		1.763
3	A4.1	Atlantic and Mediterranean high energy circalittoral rock		1.472
3	A4.2	Atlantic and Mediterranean moderate energy circalittoral rock		0.003
3	A4.3	Atlantic and Mediterranean low energy circalittoral rock		0.348
4	A5.13	Infralittoral coarse sediment		2.321
5	A5.13_PT17 <sup>(1)</sup>	[ <i>Erylia castanea</i> ] beds in infralittoral coarse sand	B-J	8.808
4	A5.14	Circalittoral coarse sediment		3.514
4	A5.15	Deep circalittoral coarse sediment		0.042
4	A5.23	Infralittoral sand <sup>(2)</sup>		3.613
5	A5.23_PT18 <sup>(1)</sup>	Faunal communities in mobile clean sand <sup>(3)</sup>	R	10.284
5	A5.23_PT19 <sup>(1)</sup>	Infralittoral sand with peracarid crustaceans and bivalves	N; O	5.296
4	A5.25	Circalittoral sand <sup>(2)</sup>		2.412
5	A5.25_PT20 <sup>(1)</sup>	Circalittoral sand with polychaetes [ <i>Aponuphis bilineata</i> ] and bivalves [ <i>Moerella donacina</i> ]	L	1.671
4	A5.26	Circalittoral muddy sand		0.677
5	A5.26_PT21 <sup>(1)</sup>	Circalittoral muddy sand with peracarid and decapod crustaceans, polychaetes, ophiurids and bivalves	M; P	2.020
4	A5.27	Deep circalittoral sand		7.578
5	A5.27_PT22 <sup>(1)</sup>	[ <i>Nephtys hombergii</i> ] and [ <i>Laevicardium crassum</i> ] in deep circalittoral muddy sand	Q	0.139
5	A5.27_PT23 <sup>(1)</sup>	Deep circalittoral muddy sand with polychaetes [ <i>Panthalis oerstedii</i> ] and [ <i>Owenia fusiformis</i> ] <sup>(3)</sup>	K	1.089
4	A5.35	Circalittoral sandy mud		5.206
4	A5.36	Circalittoral mud		4.909
4	A5.37	Deep circalittoral mud		12.959
5	A5.37_PT24 <sup>(1)</sup>	Deep circalittoral sandy mud with [ <i>Maldane glebifex</i> ]	A	6.736
4	A5.44	Circalittoral mixed sediments		0.557
4	A5.45	Deep circalittoral mixed sediments		0.971

(1) New unit; (2) Suggested new designation; (3) Update of names suggested in Monteiro et al. (2013).

**Table 1. Marine habitats map labels (EUNIS classification)** (Adapted Henriques V., et al (2014))

Task implementation: 2007-2010

This task sheet was last updated: October 2020

## REFERENCES

Henriques, V., et al., Benthic habitat mapping in a Portuguese Marine Protected Area using EUNIS: An integrated approach, J. Sea Res. (2014), <http://dx.doi.org/10.1016/j.seares.2014.10.007>

