51st European Marine Biology Symposium, 26-30 September 2016, Rhodes, Greece

Mapping ecological features for the conservation of marine biodiversity in the Aegean Sea: the MARISCA project

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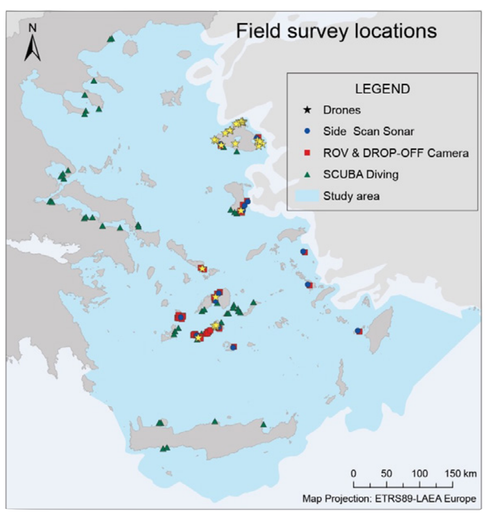
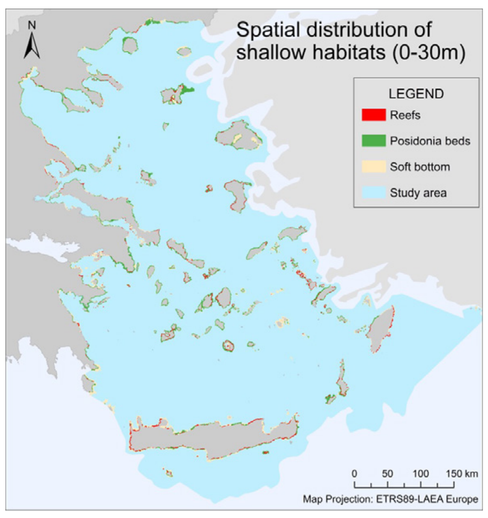
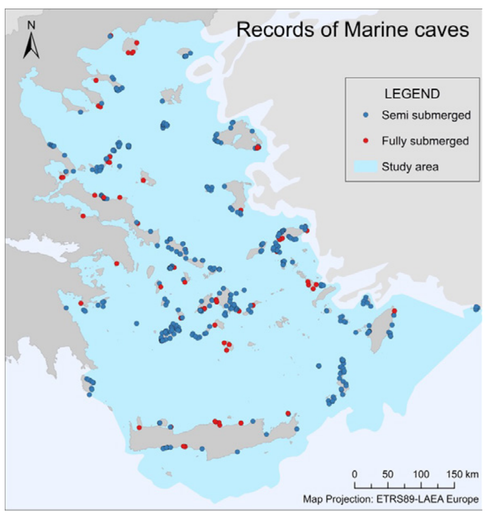
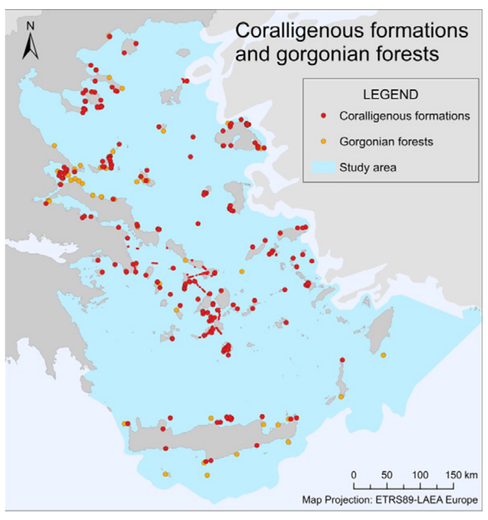
Scope

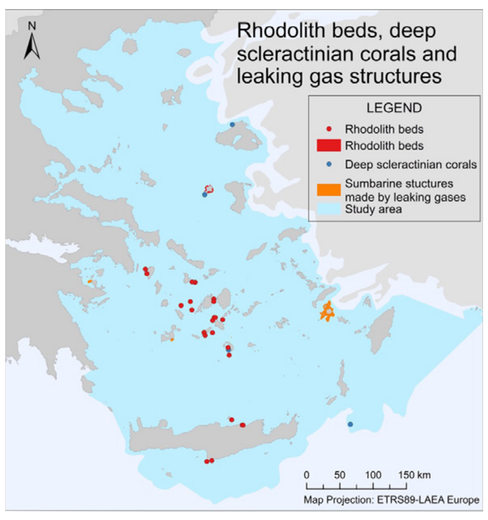
According to the Aichi Biodiverity Target 11 set by the Convention on Biological Diversity, states are committed to protect 10% of marine coastal areas by 2020. In line with this, the ultimate goal of the MARISCA project is to propose a network of Marine Protected Areas (MPAs) for the conservation of all important and vulnerable habitats and species in the Aegean Sea. To this end, systematic conservation planning and marine spatial planning are currently considered as the most appropriate tools. However, their application requires a detailed knowledge on the distribution of habitats and species, information that is overall lacking in the Aegean Sea. For this reason, a primary objective of MARISCA is the mapping of protected habitats and species, in order to set conservation priorities.

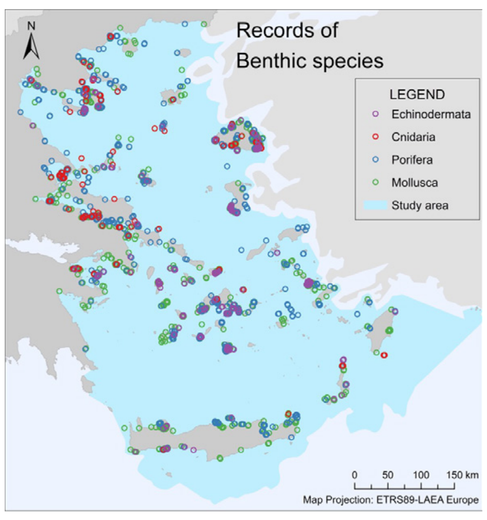


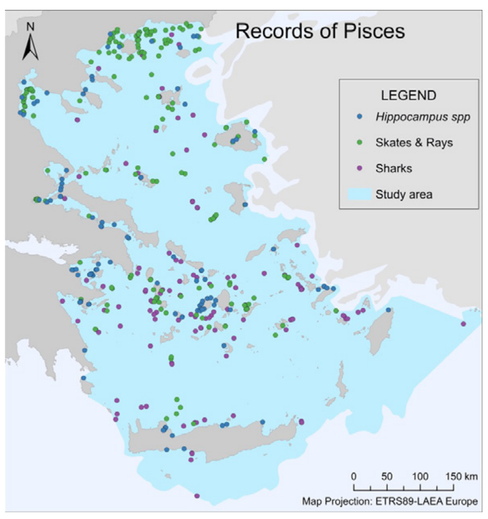


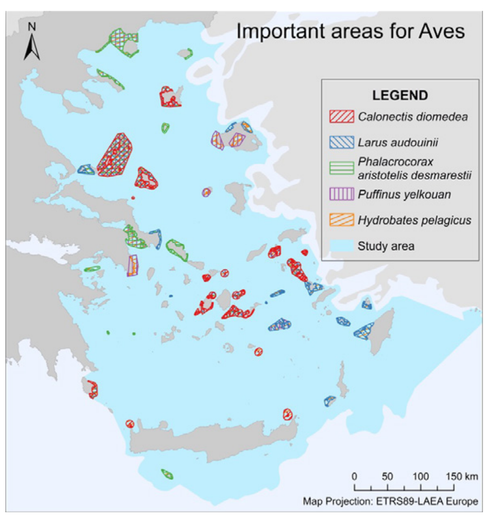


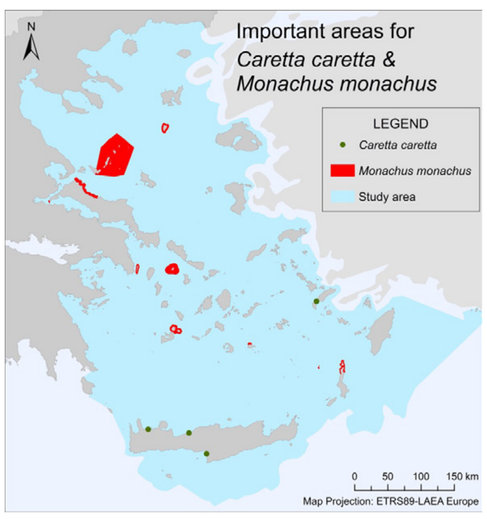












Methods

The study area covers the Greek extent of the Aegean Sea and international waters. A list of target ecological features was created including all marine habitats and species encountered in the Aegean Sea, and which are under strict protection according to the major applying international directives and conventions.

Past and present distribution of the ecological features was extracted from scientific peer-reviewed and grey literature, on-line databases, unpublished datasets provided by academic institutions and NGOs, questionnaires and interviews with stakeholders, and the processing of medium scale satellite images for the depiction of the main shallow-water habitat types (i.e. soft bottoms, *Posidonia* beds, reefs).

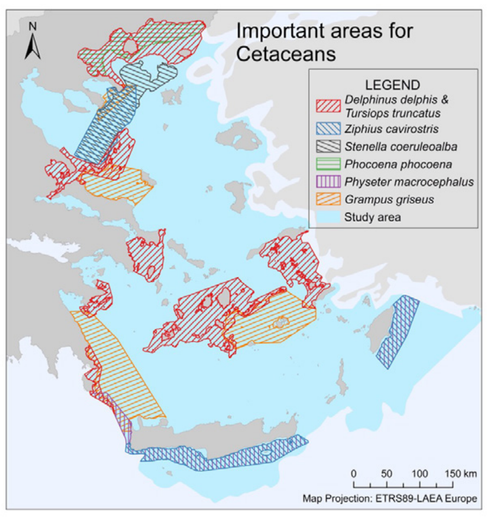
New data were collected through fieldwork sampling performed in 2016 at selected sites, in order to validate and update existing records, and explore understudied areas.

Scientific tools applied during fieldwork

- Underwater visual surveys by SCUBA diving
- Aerial photography
- High resolution side scan sonar
- Hydrographic sonar with satellite positioning system
- Remotely Operated Vehicle (ROV)
- Receiving system of underwater photography/video (drop camera)

Results

The final database includes a total of 24,955 records, corresponding to 60 species and 9 habitat types. Of these records, 81.5% correspond to data obtained through satellite telemetry, 8.4% grey literature and past projects, 4% interviews and questionnaires, 3.4% scientific literature, 2.2% new records during fieldwork, and 0.5% online databases and social media. Herein we present a summary of the resulting distribution and habitat coverage maps.



Outlook

The distribution maps of ecological features provided through this work represent the most comprehensive and updated inventory of protected marine habitats and species in the Aegean Sea.

Future steps will focus on combining this ecological information with equivalent distribution maps of human activities, on-going pressures, and existing spatial management measures.

This spatial information will be used along with cost estimates of human activities in the study area, in order to propose an MPA network based on the principles of a systematic conservation planning approach.

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Acknowledgements: We are grateful to all anonymous observers, divers and diving centers for providing valuable information. The programme is co-funded in 85% by the EEA GRANTS, 2009-2014, and 15% by the Public Investments Programme (PIP) of the Hellenic Republic.

MARISCA project info in a snap:

- Budget: € 390.000
- Partners: UAegean, HCMR, IMR
- Duration: 01/12/2015 – 31/12/2016
- Coordinator: Stelios Katsanevakis - UAegean