



# Hellenic Centre for Marine Research

**EU BON study site:**

**Amvrakikos lagoonal complex**

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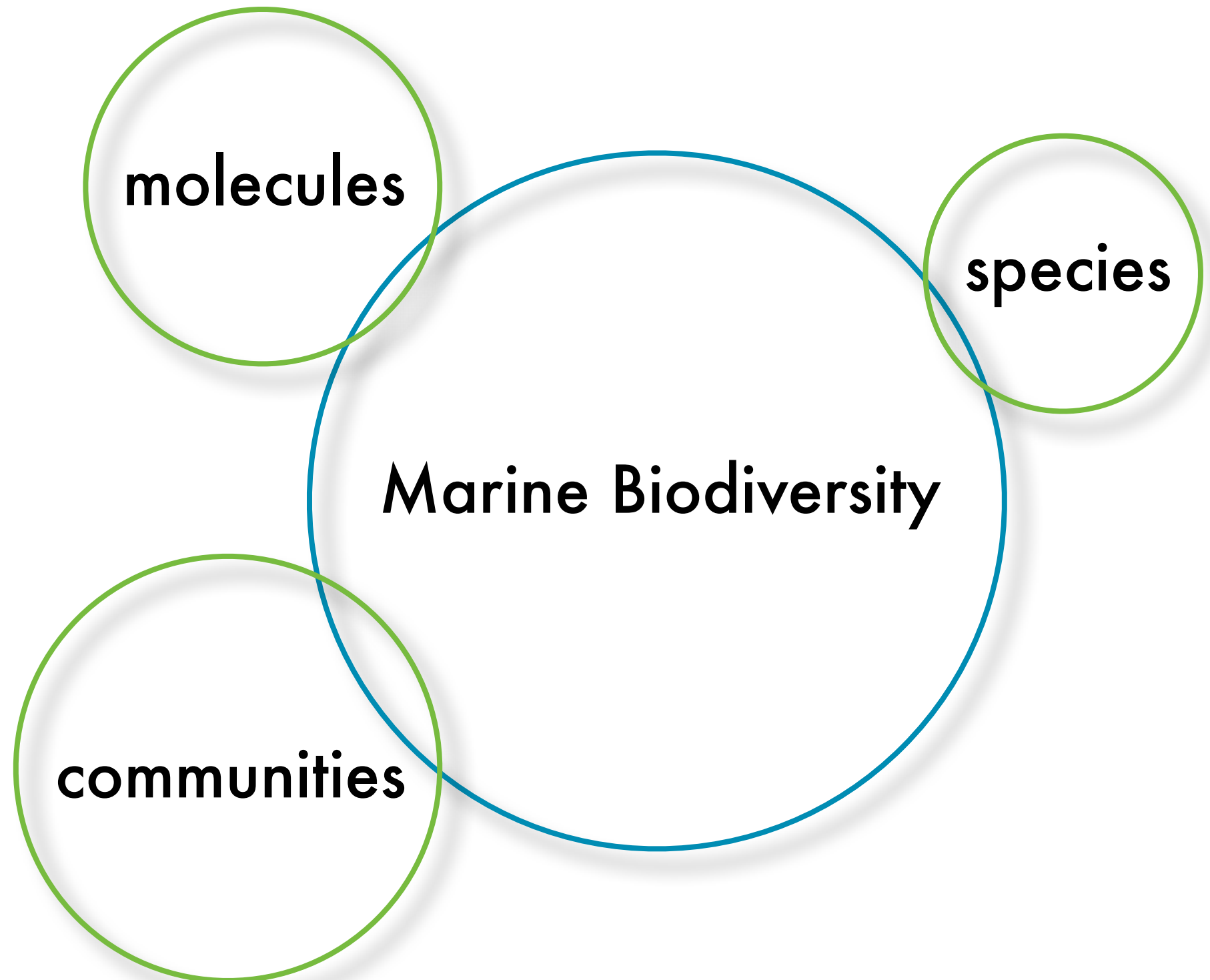
# HCMR Marine Biodiversity Lab

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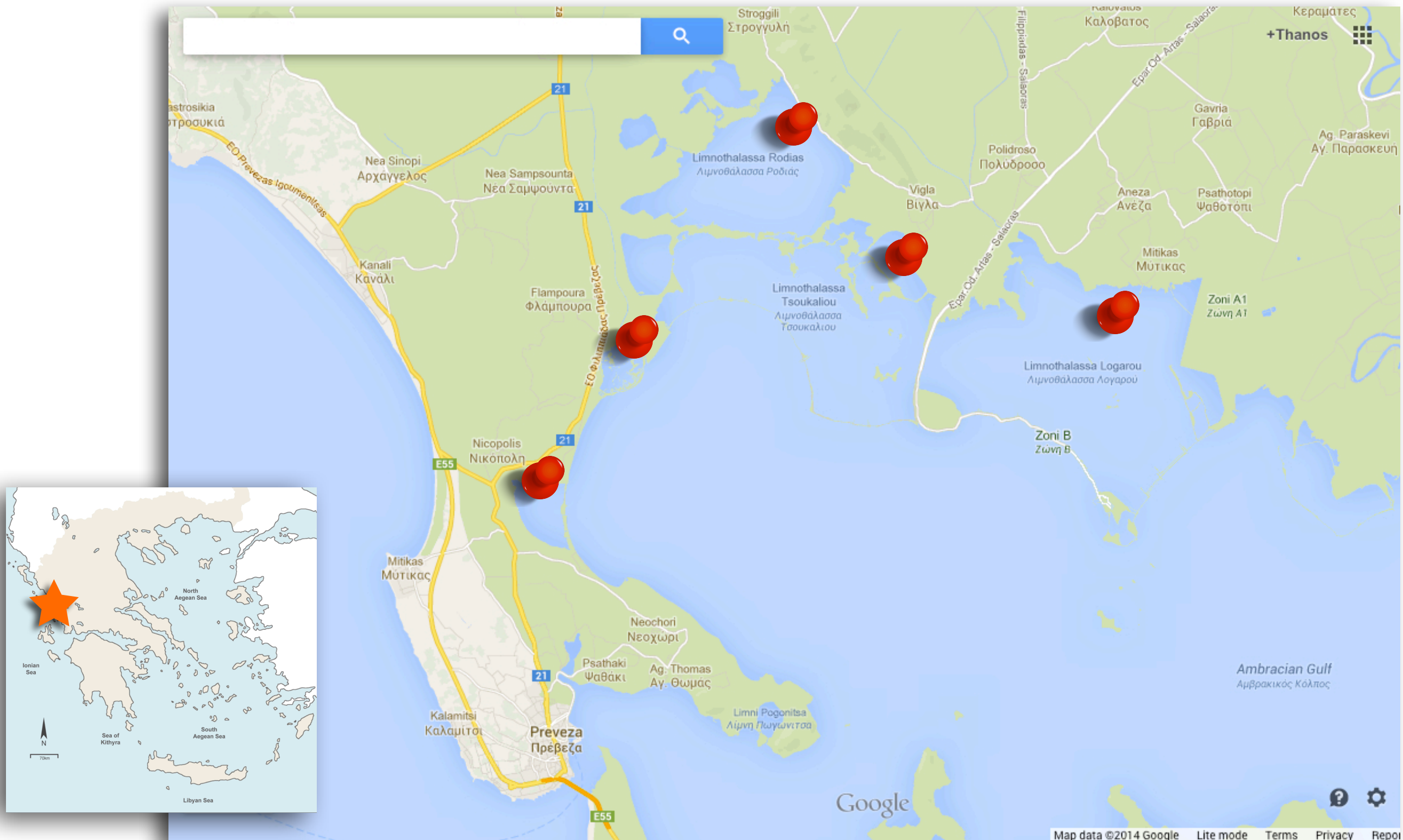


# The coastal lagoon ecosystem



- Extreme and highly variable conditions
- Few, highly tolerant native species
- Human use and impact

# Amvrakikos Gulf and its lagoons





# Who has been collecting data so far?

- HCMR (IMBBA & Institute of Oceanography)
- Amvrakikos Wetlands Management Body





# Existing data collections

## Environmental data

Concentration of heavy metals and elements  
Seasonal (2010-2011), all lagoons

Abiotic parameters

Full set of environmental parameters – sediment & water column  
(nutrients, temperature & salinity, pH, conductivity, oxygen, sulphur,  
chlorophyll & phaeopigments, POC, CPE, MO, sediment granulometry)  
Seasonal (2010-2011), all lagoons

Some older seasonal datasets (1989-91 & 2004-05)

All studies conducted by HCMR



# Existing data collections

## Sediment microbial diversity

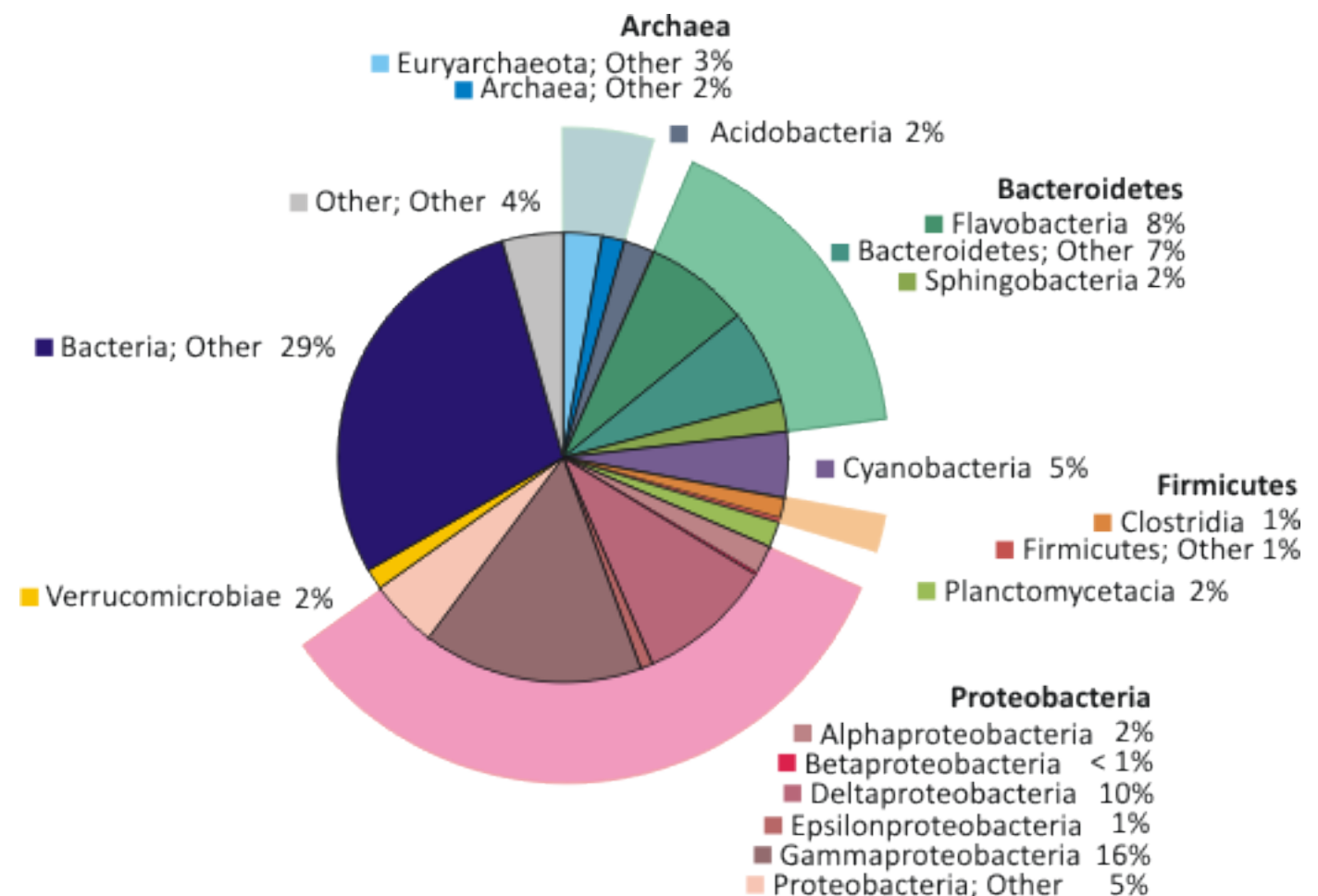
Identification and quantification of bacterial OTUs in sediment samples

Barcoding of sediment samples with NGS using 16S and *dsr* genes

One-off sampling, all lagoons

HCMR

PhD of Christina Pavloudi



# Existing data collections

## Polychaete genetic diversity

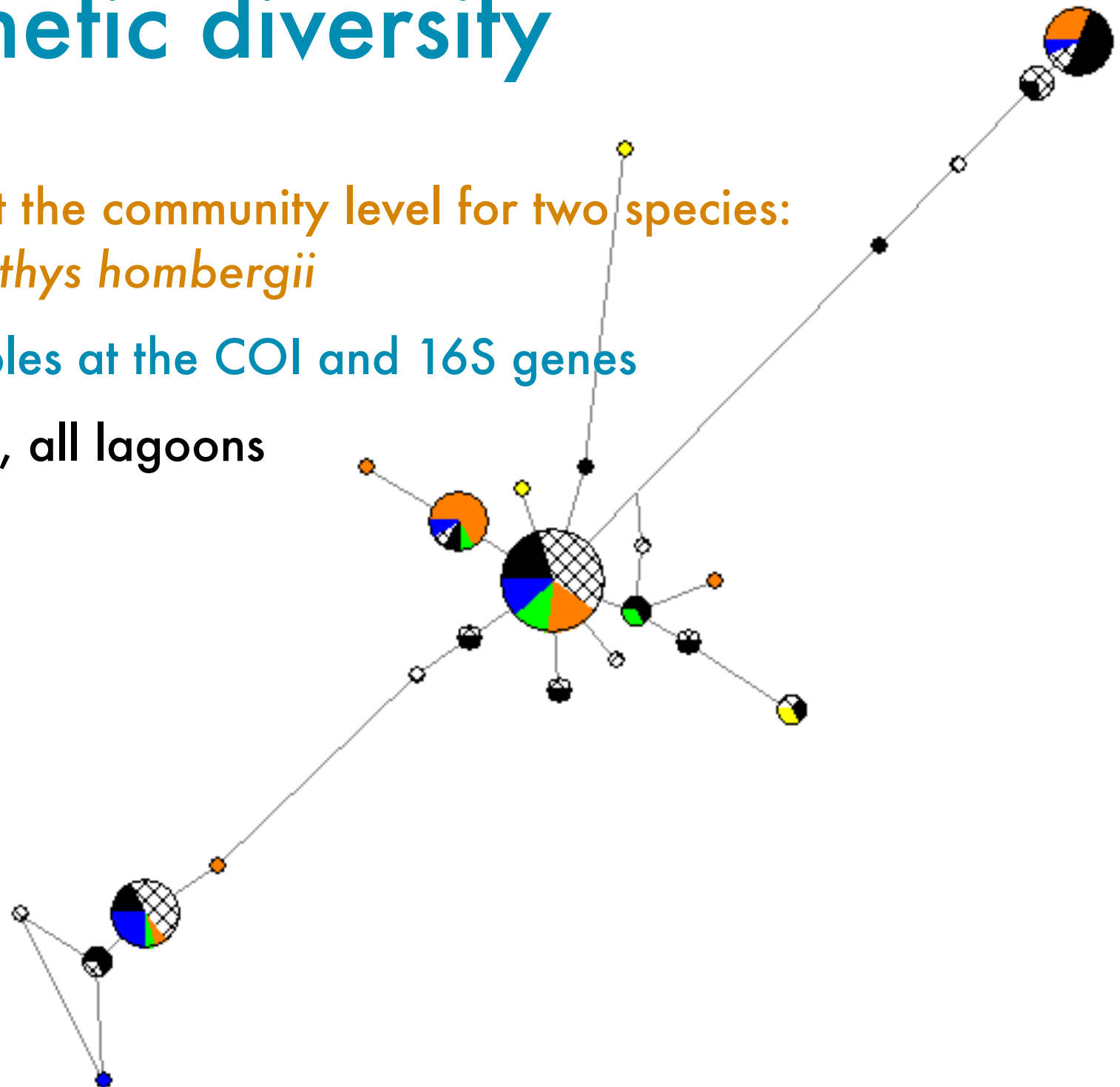
Estimation of differentiation at the community level for two species:  
*Hediste diversicolor* and *Nephtys hombergii*

Sequencing of collected samples at the COI and 16S genes

Seasonal & one-off samplings, all lagoons

HCMR

PhD of Katerina Vasileiadou





# Existing data collections

## Analysis of benthic communities

Community synthesis of benthic macroinvertebrates inhabiting the sediment

Identification of organisms in sediment samples using morphological characters

Seasonal samplings (1989-1991; 2004-2005; 2010-2011), all lagoons

HCMR

Dr Sofia Reizopoulou, Institute of Oceanography





# Existing data collections

## Bird recordings

Recording of bird species in the area

Identification and count within transects– plus ethology, sex and age if possible

Monthly samplings (2000-2003; 2008; 2011-ongoing), all lagoons

Amvrakikos Wetlands Management Body



# Existing data collections

## Fish recordings



Recording of fish species in the area

Recording of fish species and abundance caught by local fishermen

Annual, all lagoons

Amvrakikos Wetlands Management Body

# Data type and file format

## Environmental data

arithmetic values (e.g. concentrations)

spreadsheet format (usually proprietary Excel files)

## Faunal composition

species name; abundance

spreadsheet (Excel) or database (Access)

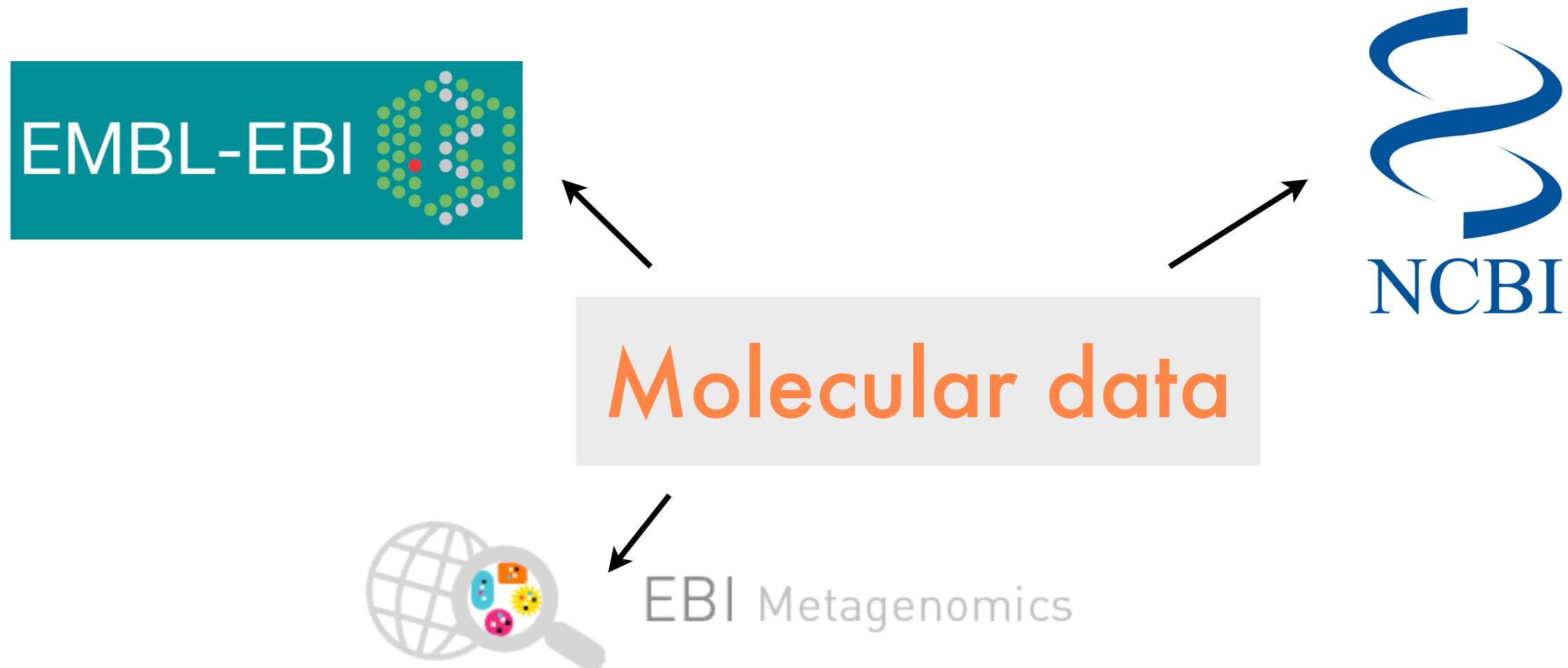
## Molecular data

haplotype sequence; frequencies of haplotypes

spreadsheet (Excel) or specialist format (.fas; .sff)



# Data availability



Molecular data that are part of ongoing PhD projects remain under embargo until published

Other data not available in online databases, however available upon request

# What are the next steps?



Setup of manipulative experiments to study biodiversity and ecosystem functioning  
PhD project, Christina Pavloudi

Application of additional molecular markers to assess community structure in  
polychaetes

PhD project, Katerina Vasileiadou

Assessment of the response of benthic organisms to environmental stressors  
through analysis of growth rates and imposex occurrence in gastropods

# What are the next steps?

Recording of functional traits

polytraits: a database on biological traits of polychaetes



Database developed as part of  
the Greek LifeWatch infrastructure

<http://polytraits.lifewatchgreece.eu>

Faulwetter et al. (2014) Biodiversity Data Journal



# What are the next steps?

Setup of citizen science networks  
for bird observations

in collaboration with the  
management authority and local  
community

