



# atlas

UNDERSTANDING DEEP ATLANTIC ECOSYSTEMS



## eDNA protocols and application to Medwave samples

Annual meeting Atlas, Mallorca, April 9<sup>th</sup> 2018

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Sophie Arnaud-Haond

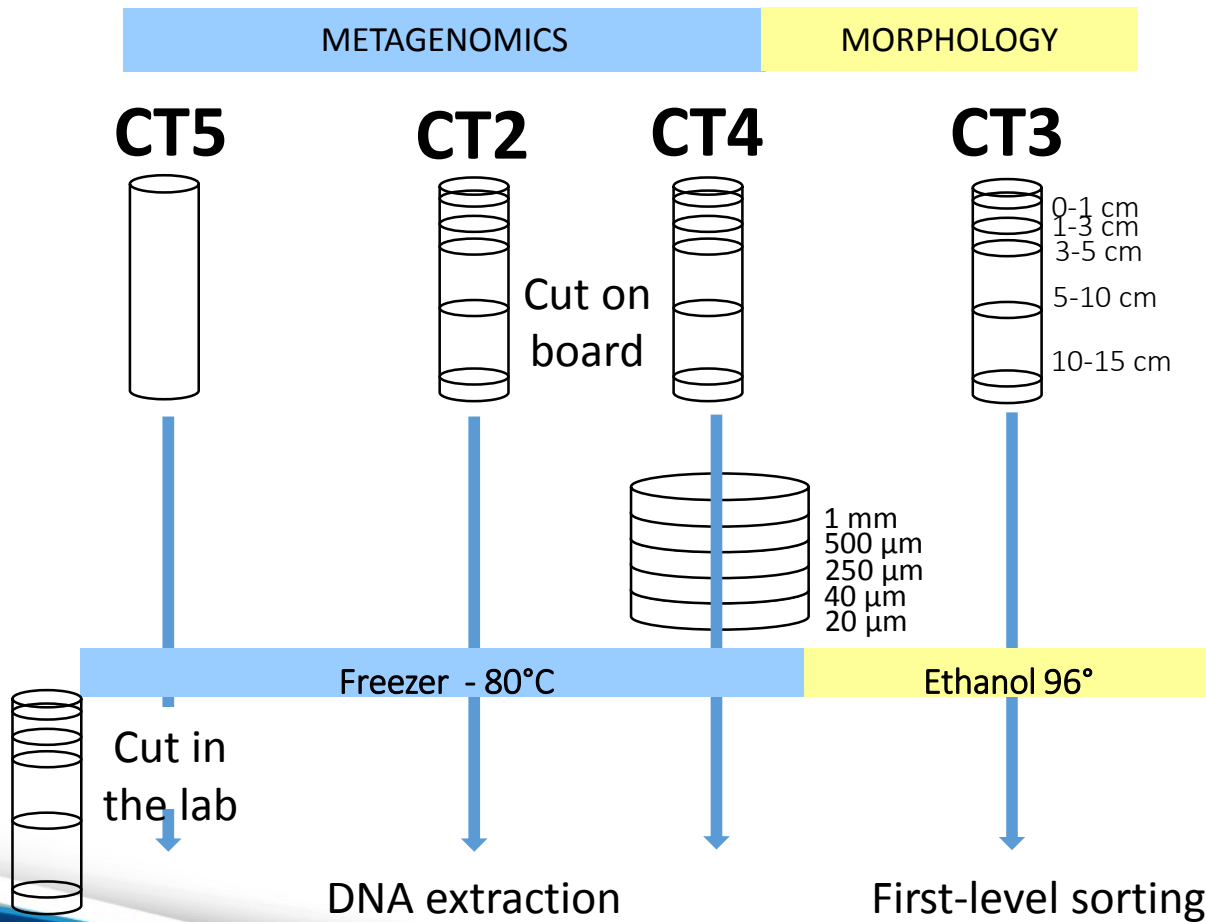




# Setting up metabarcoding protocols to unravel communities through eDNA



# 1) Sampling design

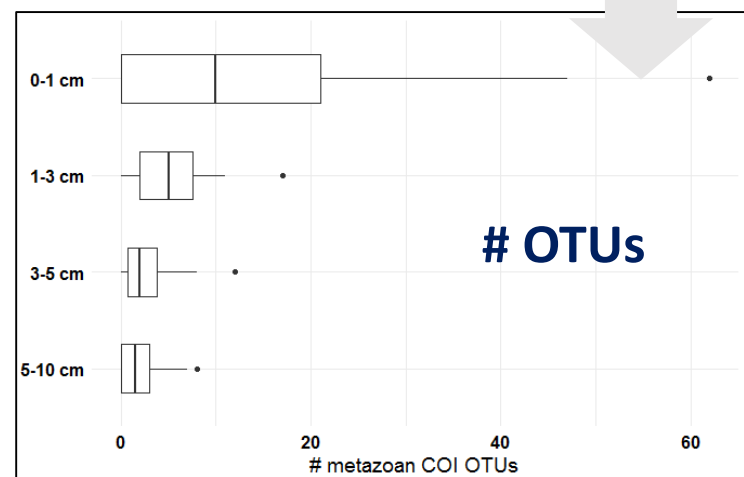
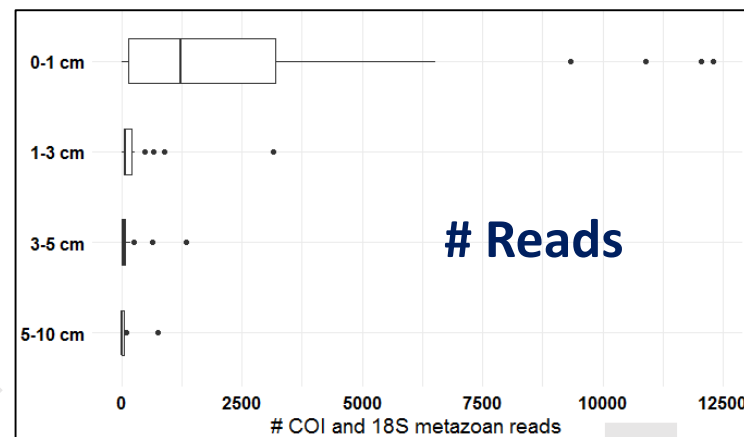
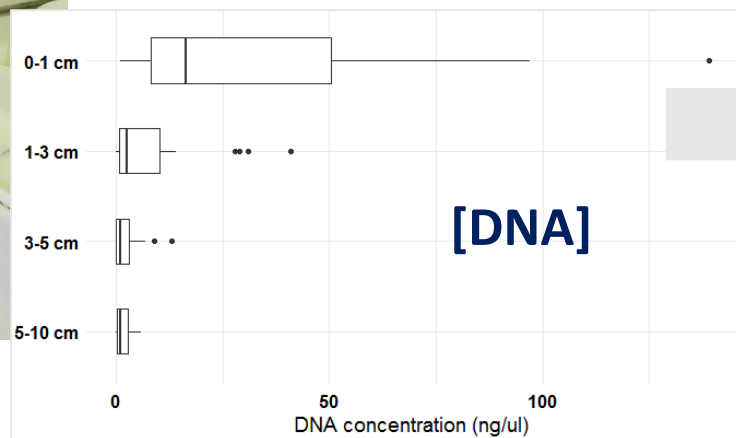
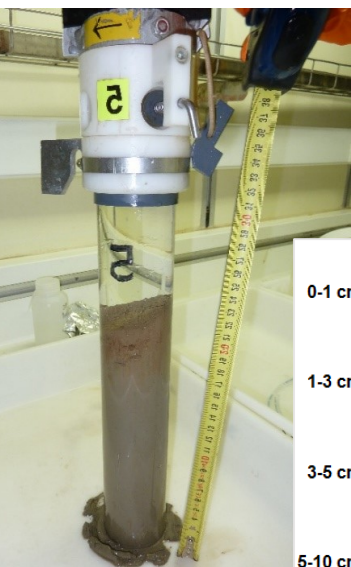


ROV-deployed cores  
2400 m



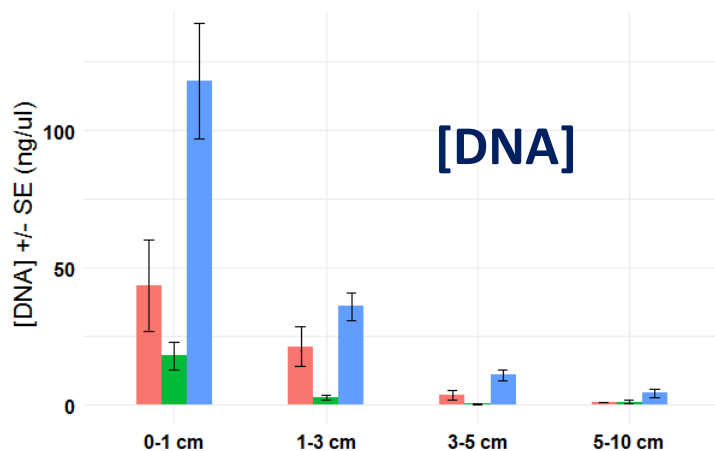


# Metazoan results and sediment horizons





# Differences between core treatments?



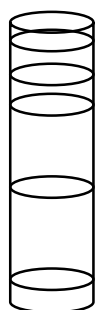
**CT5**

**CT2**

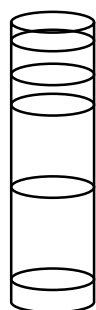
**CT4**



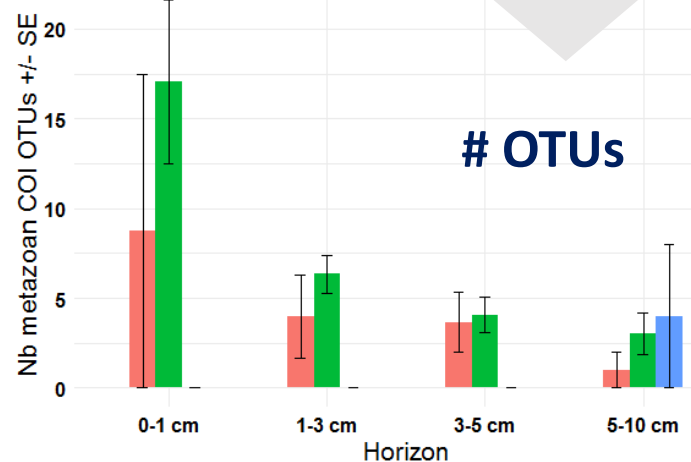
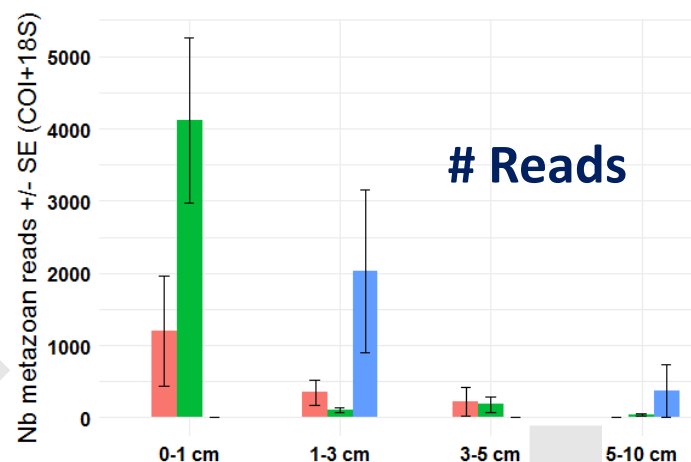
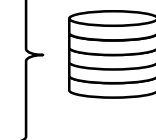
2 cores  
Cut in lab



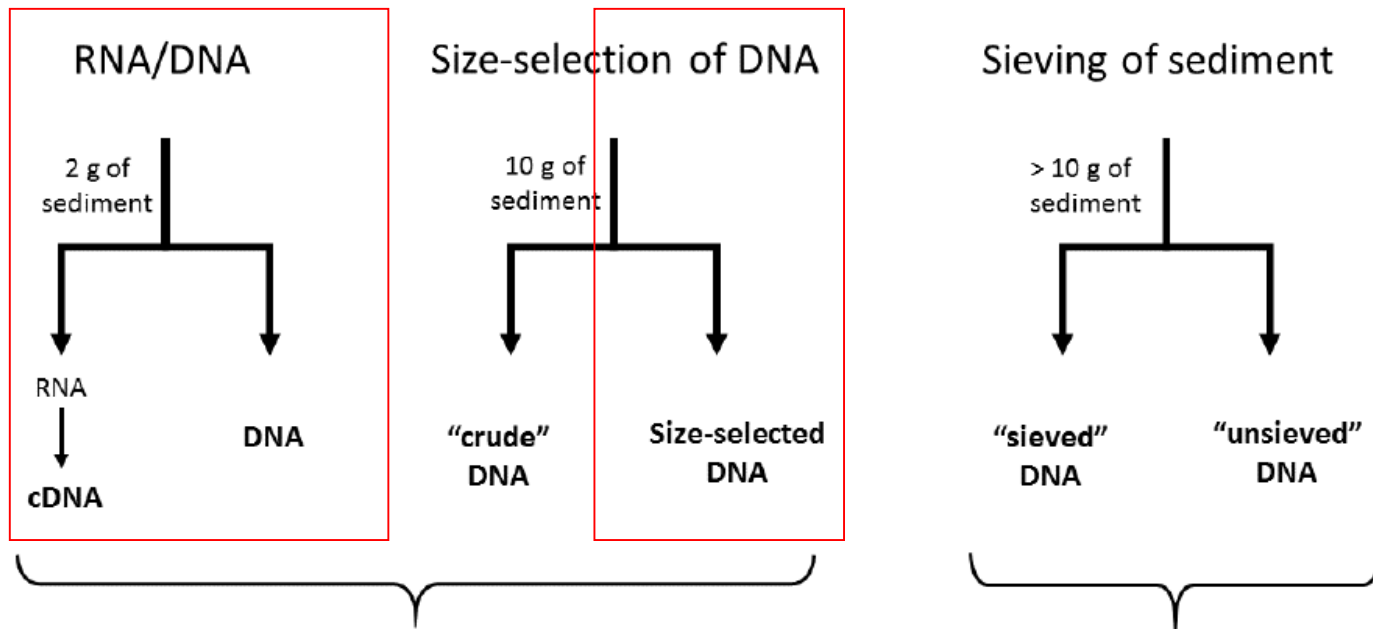
3 cores  
Cut on board



3 cores  
Cut and sieved on board



# Tests in course with ABYSS project, including Medwaves samples



- EssNaut: 1 site, CT2 of PL06, PL07, PL11
- MDW: 4 sites, 1 core from each (CT2)

- EssNaut: 1 site, CT2 (unsieved) and CT4 (sieved) of PL06, PL07, PL11

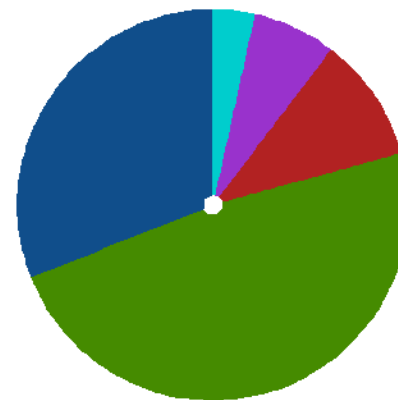
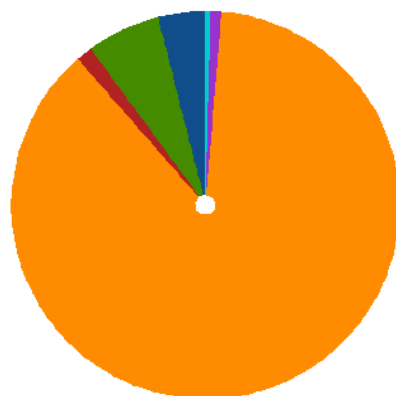




# First results with DNA/Morphology

Morphology

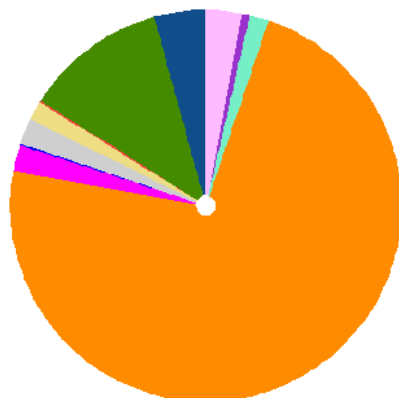
No nematods



Phylum

Annelida  
Arthropoda; Crustacea  
Mollusca  
Nematoda  
Porifera  
Rotifera

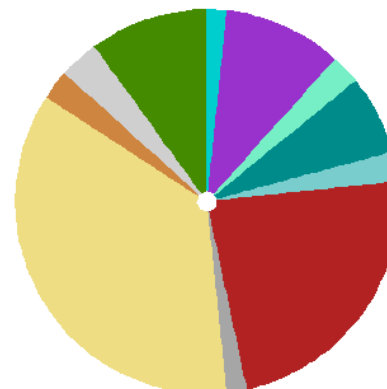
18S



Taxa

Annelida  
Arthropoda; Crustacea  
Brachiopoda  
Cnidaria  
Others  
Hemichordata  
Loricifera  
Nematoda  
Platyhelminthes  
Porifera  
Xenacoelomorpha

COI



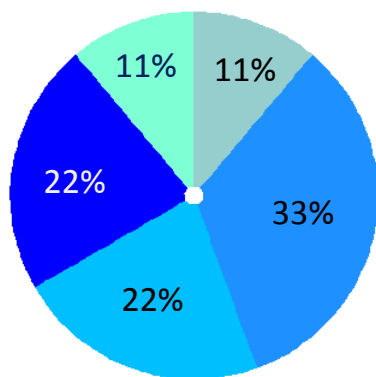
Taxa

Arthropoda; Crustacea  
Others  
Chordata  
Cnidaria  
Metazoa; Multi-affiliation  
Mollusca  
Nemertea  
Placozoa  
Platyhelminthes  
Porifera  
Rotifera

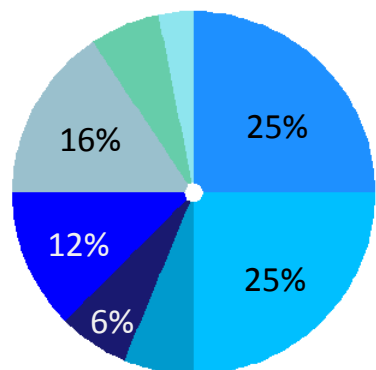


# First results with DNA/Morphology

## Morphology



18S



## Annelida

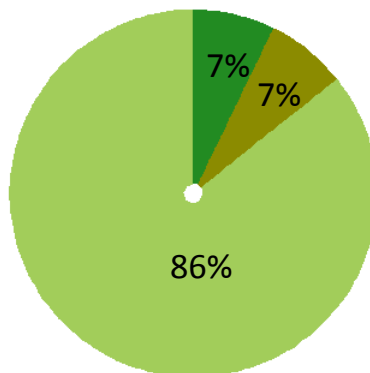
Order  
Eunicida  
Phyllodocida  
Spionida  
Terebellida  
unidentified order



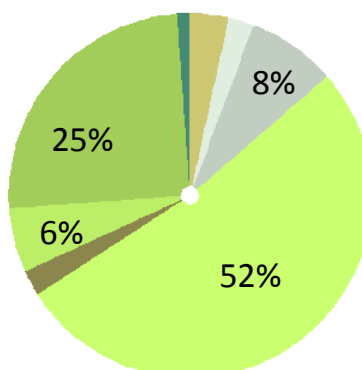
Order  
Clitellata;Haplotaenidia  
Polychaeta;Capitellida  
Polychaeta;Palpata Incertae  
Polychaeta;Phyllodocida  
Polychaeta;Sabellida  
Polychaeta;Scoleleida  
Polychaeta;Spionida  
Polychaeta;Terebellida

## Crustacea

Order  
Copepoda  
Cumacea  
Isopoda

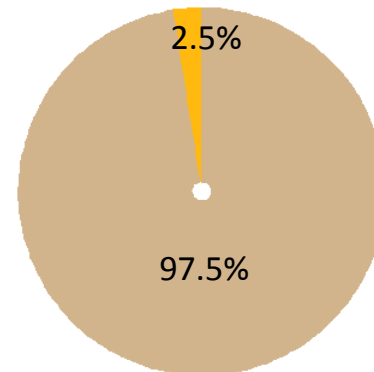


order  
Akenrogonida  
Calanoida  
Cyclopoida  
Harpacticoida  
Halocyprida  
Podocopida  
Maxillopoda;unkn  
Malacostraca;unkn

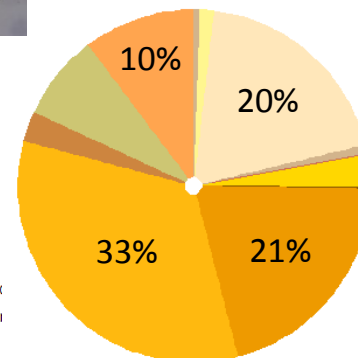


## Nematoda

Order  
Desmoscolecida  
unidentified order



Order  
Chromadorea;Araeolaim  
Chromadorea;Chromad  
Chromadorea;Desmod  
Chromadorea;Desmosc  
Chromadorea;Monhystr  
Chromadorea;Oxyurida  
Chromadorea;Rhabditida  
Chromadorea;Tylenchida  
Chromadorea;unknown  
Enopleia;Enopliida  
Enopleia;Triplonchida  
Enopleia;unknown order







## In course

- Remaining tests on RNA and size selected DNA
- Other comparisons including Medwaves samples (IEO)
- Selection of bioinformatic suites finalized in the framework of Ifremer ABYSS project, that will be used for Atlas analysis as well

# Thank You!



## Presenter details:

*Name, details go here...*

**WP3: eDNA protocols set up at Ifremer & UCD**  
**In collaboration with IEO and IMAR**

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Template developed by AquaTT



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 678760 (ATLAS). This output reflects only the author's view and the European Union cannot be held responsible for any use that may be made of the information contained therein.

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