marbec

MARINE BIODIVERSITY EXPLOITATION & CONSERVATION

atlas
UNDERSTANDING DEEP ATLANTIC ECOSYSTEMS

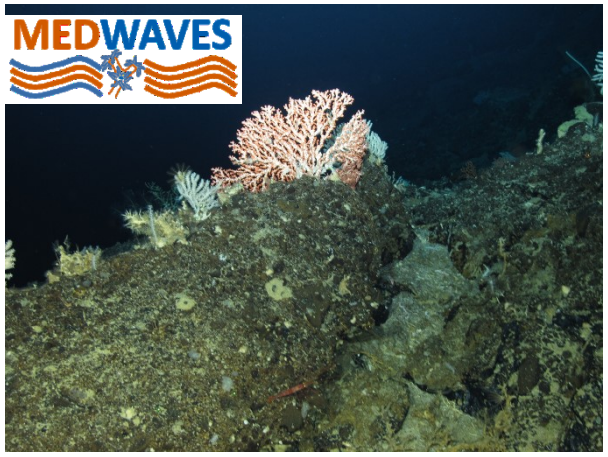
WP4:Connected Resources

Ifremer

Coordination: Sophie Arnaud-Haond (Ifremer, FR)

Deputies: Lenaick Menot (Ifremer, FR), Alex Rogers (UOx, UK)

Partners: UCD, IE; IEO, ES; UEDIN, UK; IMAR-UAz, PT; UOx, UK



Connected Ressources

A) Indirect approach: population genetics & modelling

Goal: Assess the scale and extent of migration

Anticipated results: Seascape genomics of habitat structuring species, VMEs markers and exploited species.

B) Direct approach: life history traits

Goal: Identify reproductive and dispersal mechanisms of target species

Anticipated results: Differences in life history traits are likely to result in contrasting levels/degrees of seascape connectivity. Data will feed parameters of WP1 models.

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WP3: mapping biodiversity
Assessing the distribution of species assemblages and its biogeography

WP4: Phylogeography
PAST demography, connectivity and range shifts under the influence of historical climate changes.

WP4: Seascape genomics & Life history traits
PRESENT genetic diversity and migration paths

WP1: Predicted dispersal
PRESENT DAY

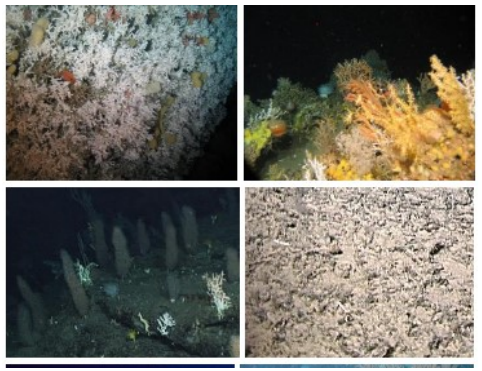
WP1: Predicted dispersal
FUTURE

WP6 & 7: Managing VMEs and ressources

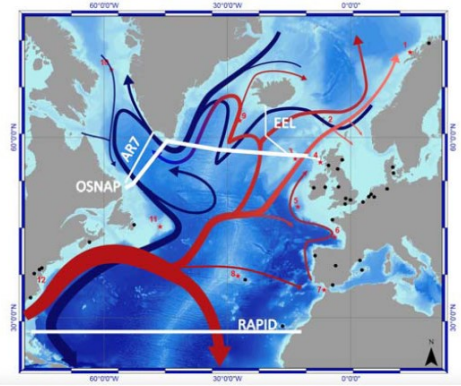
Time

WP4: Connected Resources

Mapping biodiversity



Inferring its dynamics



Predicting changes?
Mitigating impacts?

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Tasks

Task	Description	Time frame	Lead partner	Other participants
Task 4.1	Multi-species genomics to identify sources and stepping stones	(M1-M36)	UCD	UOX, IMAR-UAz, IFREMER, IEO
Task 4.2	Predicted and realised dispersal: influence of history and life history traits on connectivity as predicted	(M6-M36)	IMAR-UAz	UEDIN, IFREMER, IEO, UCD, UOX
Task 4.3	Appraise effects of fisheries exploitation and habitat loss on fish meta-populations	(M24-M42)	UCD	IFREMER, UOX, UCD
Task 4.4	Create a new adaptive management approach for MSP	(M36-M48)	Ifremer	UCD, IEO, IMARUAz, UOX

Deliverables

Number	Deliverable Title and Description	Month	Lead
	May/June		
D4.1 ☑	Report on set of species for which material is available for reproductive studies	M12	IEO
D4.2 ☑	Report on the set of species for which tissue collections have been gathered that allow connectivity studies	M18	UOx
	In progress		
D4.3 ☑	Report on selected protocols for RAD on each species retained	M24	UCD
D4.4	Report on main life history traits and how they may affect dispersal	M36	IMAR-UAz
D4.5	Genetic data analysis, maps illustrating network of connectivity for all species retained	M40	Ifremer
D4.6	Report on fish delimitation and demographic reconstruction	M40	UCD
D4.7	Synthesis of connectivity patterns and guideline to integrate connectivity to management plans	M46	Uox

Candidate species for the study

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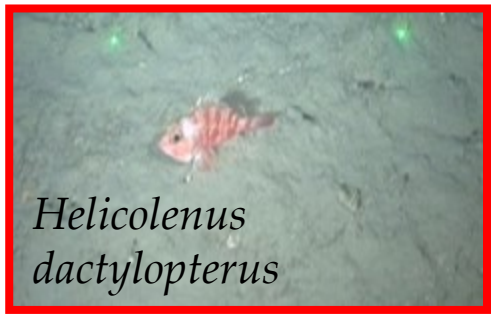
Candidate species for the study




Protomyctophum arcticum


Notoscopelus kroeyeri

Plans for year 2

- Finalize DL4.1 & 4.2 by the end of May
- Finish DL4.3 by the end of the year
- Start integration with WP1 to plan the development of models predicting dispersal and connectivity for the main target species => plan an integrative session next year with predicted (WP1) versus realized dispersal for a set of species (WP4)
- Integration to define the expectations of WP6 &7 in terms of implications of the results for management & conservation recommendations?
- Possible input from Ana Addamo (awaiting an answer from Juan de la Cierva post-doc program)

Breakout sessions

- Update on plan and advances in concerted genome scan tests
- Advance toward the end of DL4.1 & 4.2:
- "Constructing a data base on samples available for reproduction and genetic studies on Cold-water corals“:
  - Information from the ATLAS partners. Current state of the template and re-call partners to add information if they have some
  - Information from other partners. Present the call we did and the reply we got until now
  - Present a protocol to collect samples for reproduction studies in oceanographic cruises as well as on other cruises (coral samples/bycatch)
  - Suggestion: to perform a list with current bibliography available on reproduction studies of Cold-water corals. This could be add as part of the deliverable?

Thanks

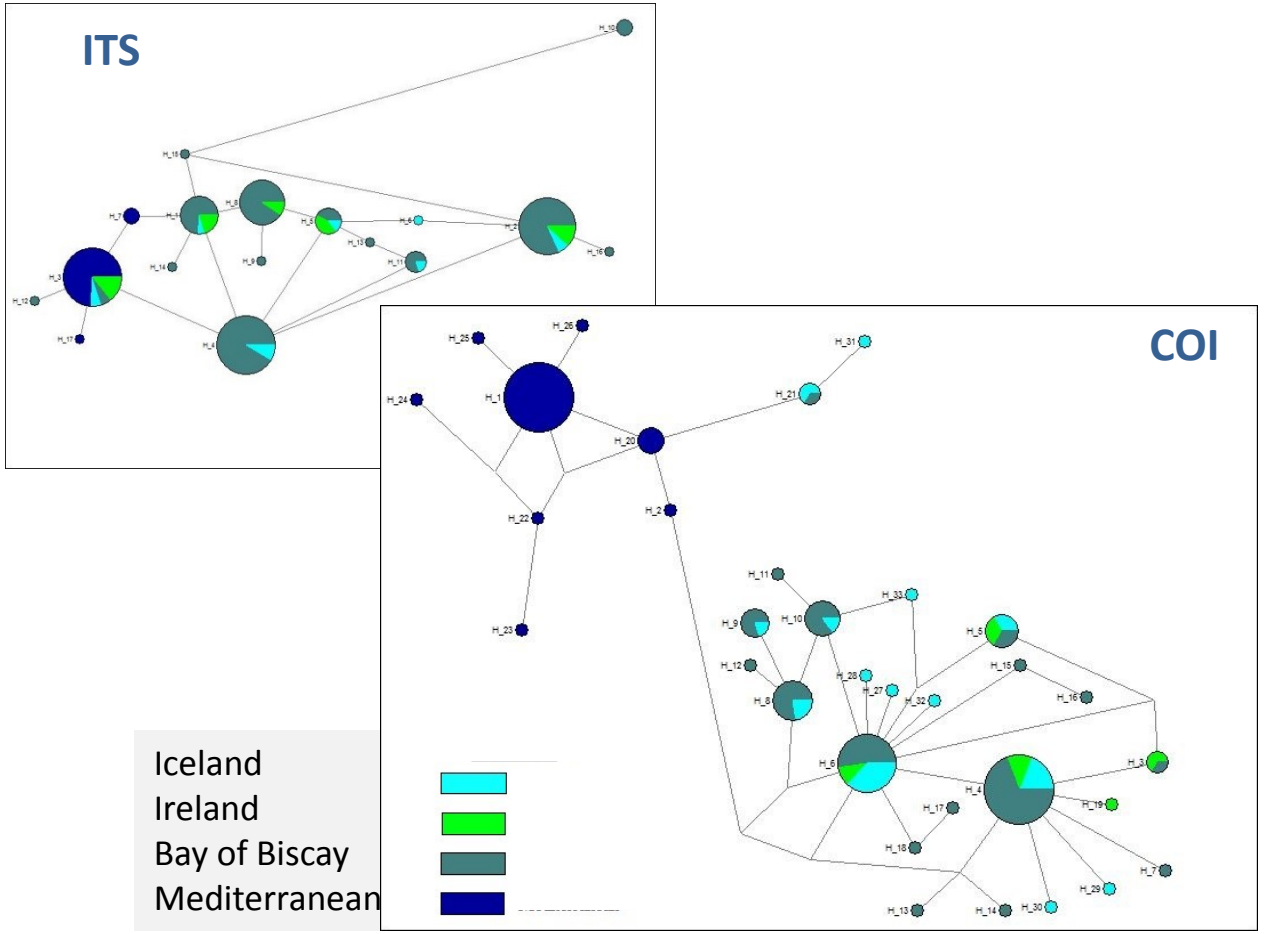
IRD Institut de recherche pour le développement
Ifremer
Université de Montpellier
cnrs

Eunice norvegica?

Atlantic *versus* Mediterranean

COI (mitochondrial, maternally inherited) : no exchange

ITS (nuclear, biparentally inherited) low level of exchange

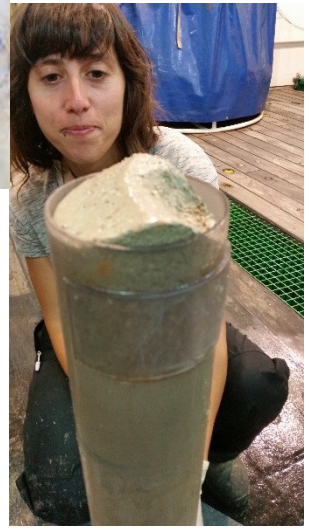


➔One species with only male migrating, or two species?? Hybridizing or not?

Ongoing genome scan analysis, Master 2 thesis of Florent Sylvestre

A small update on ongoing work

- Joana Boavida (Ifremer): Understanding connectivity of deep sea corals in the Atlantic and the Mediterranean Sea: from microsatellites to genome scan
- Maria Rakka (IMAR&IEO): Peeping through the deep: Insights to the reproductive strategies of cold water gorgonians in the Azores Archipelago
- "Nettan & Jens Carlsson (UCD): Connectivity studies using genotyping by sequencing (GBS) approaches



Thank You!

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