



# CHARM

CHANNEL INTEGRATED APPROACH  
FOR MARINE RESOURCE MANAGEMENT





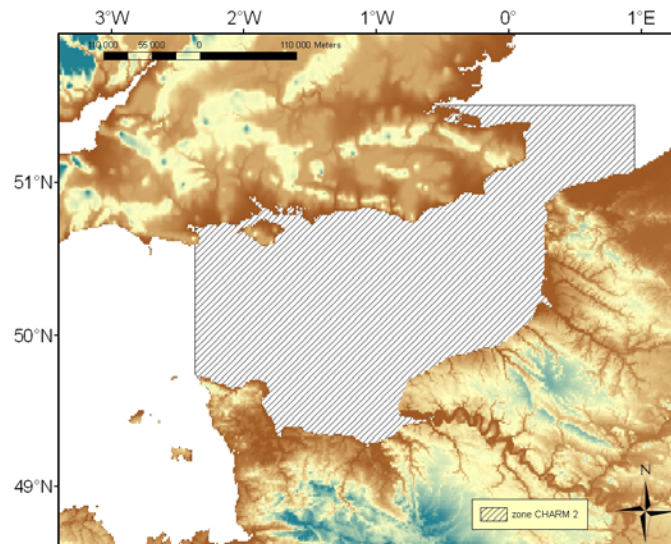
# Systematic conservation planning in the Eastern English Channel.

Juliette Delavenne (IFREMER/LOG) and Kristian Metcalfe (DICE)

# Context

## Study area

Eastern English Channel, zone CHARM 2



# Context

## Systematic conservation planning

**Six steps** (Margules and Pressey, 2000)

- Compile data on the biodiversity of the planning region
- Identify **conservation goals** for the planning region
- Review existing conservation areas
- Select additional conservation areas
- Implement conservation actions
- Maintain the required values of conservation areas.

**Systematic conservation planning is designed to be transparent and allow stakeholder input at all stages.**



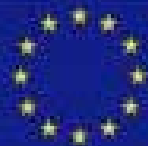
# Two PhD subjects

Investigating the  
Biological and  
Socio-economic  
impacts of Marine  
Protected Area  
Design in the  
Eastern English  
Channel

Kristian Metcalfe . Supervisors:  
Stuart Harrop, Sandrine Vaz  
and R.J. Smith

Systematic  
conservation  
planning in the  
Eastern English  
Channel. What  
Conservation  
targets?

Juliette Delavenne. Supervisors:  
J-C Dauvin, Sandrine Vaz et R.J.  
Smith



# Investigating the Biological and Socio-economic impacts of Marine Protected Area Design in the Eastern English Channel

This PhD will build on the research gathered in the previous phases of CHARM (I & II), and will be part of ongoing work to develop a number of innovative approaches to inform MPA conservation planning and designation initiatives, both at a regional (in the Eastern English Channel) and global level. In particular, this research will focus on:

1. Setting numerical targets for conserving important species and habitat types based on biological and legal requirements.
2. Developing techniques for incorporating biodiversity, policy and social data into a systematic conservation planning assessment for the Eastern English Channel.
3. Modelling the impacts of different MPA network scenarios on biodiversity, fish stocks and fishing effort.



## Systematic conservation planning in the Eastern English Channel. What Conservation targets?

1. How can the available environmental and biological data be used to set conservation targets for benthic and fish communities and for the different seascapes in the Eastern English Channel?
2. Can conservation targets and existing socio-economical constraints be conciliated to propose a spatialised planning in this area?
3. How do marine park initiatives in the Eastern English Channel lie within the wider context of conservation through Marine Protected Area (MPA) networks?





# Differences between two approaches of target settings

## Kristian Metcalfe

1. Habitat map will be based on EUNIS Level 4
2. Habitat targets will be developed using species area curves to determine the proportion of habitat required to represent a given percentage of species
3. Species targets will be developed for OSPAR (Region II) species listed as threatened or declining
4. “Data Poor” / “Rapid Approach”

## Juliette Delavenne

1. Habitat map will be based on the distribution of fishes and water column parameters.
2. Habitat targets will be developed using species area curves to determine the proportion of habitat required to represent a given percentage of species
3. Species targets will be developed for a number of important benthic species and fishes, as identified in CHARM 2.
4. “Data Rich” / “Detailed Approach”

Comparison of approaches to set targets, and its impact on MPA design

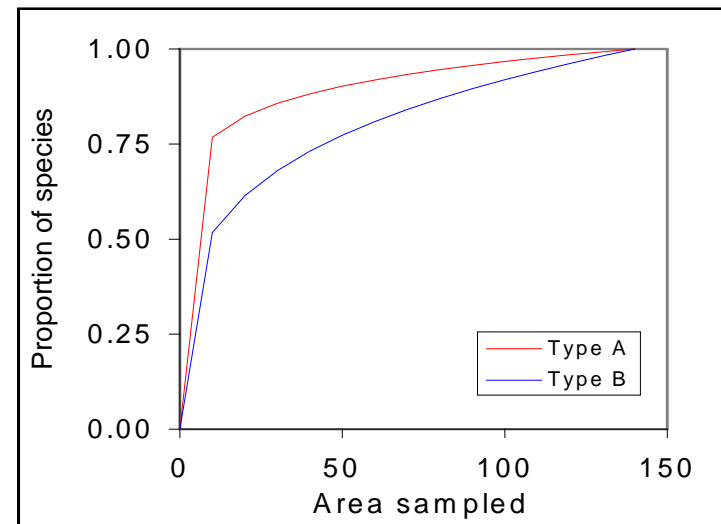




# Target setting

Conservation targets are most often decided in regard of legal texts.

→ Use of scientifically defensible methods such as **species area curves** to determine what proportion of a habitat is required to reach a certain percentage of species representation in the MPA network



Desmet & Cowling (2004)



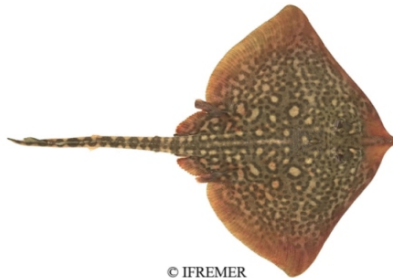
# Conservation Planning

## Use of MARXAN

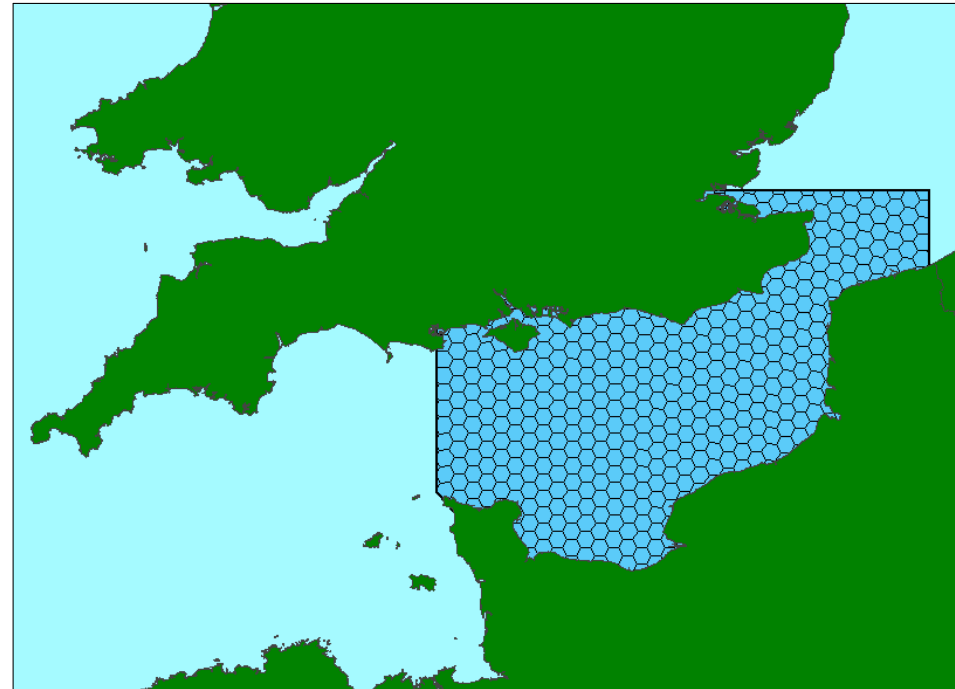
- 1) Identify the planning region
- 2) Identify the conservation features
- 3) Divide the region into planning units - any shape or size.



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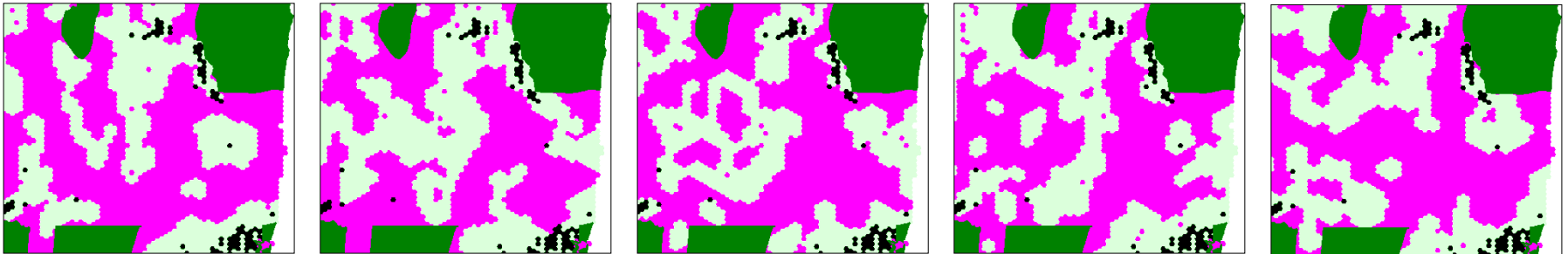




# Conservation Planning

## Use of MARXAN

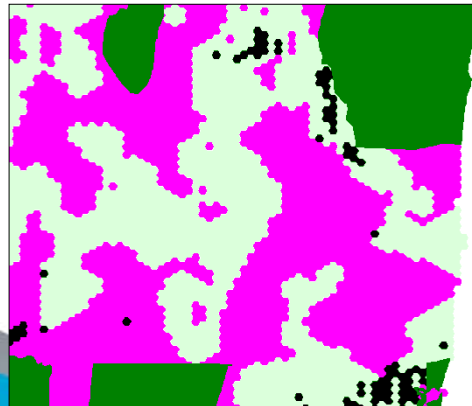
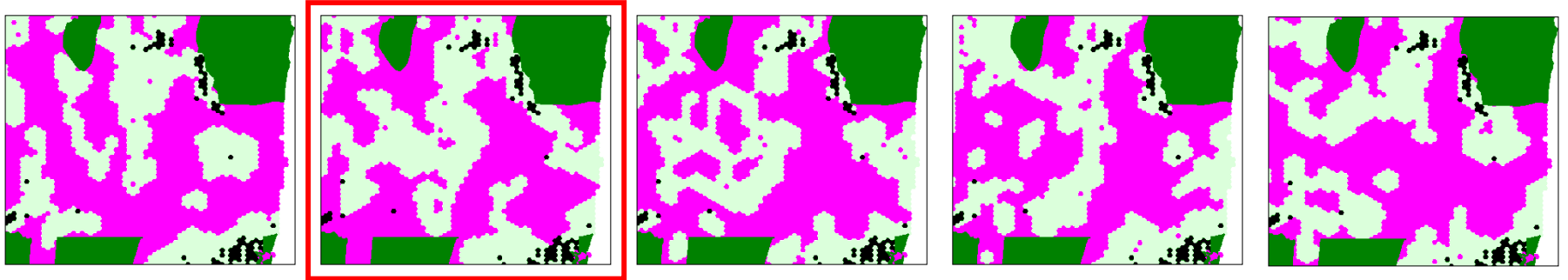
MARXAN is run a number of times and produces a different near-optimal portfolio each time.



# Conservation Planning

## Use of MARXAN

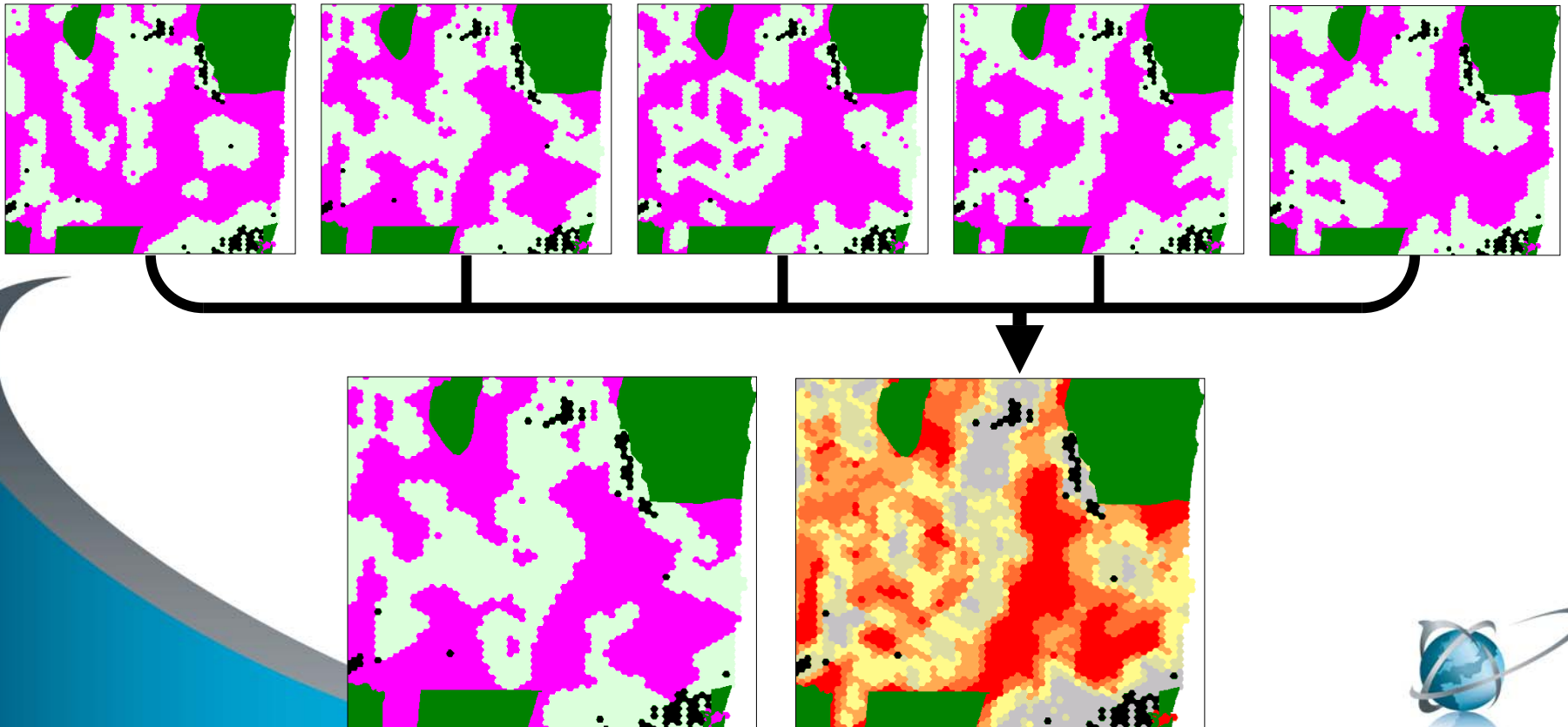
It then identifies the best portfolio (the one with the lowest cost).




# Conservation Planning

## Use of MARXAN

It also counts the number of times each planning unit appears in the different portfolios to give a measure of irreplaceability.





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ATTENTION



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