

# CHARM 3 Interreg Iva Project

Sandrine Vaz, Ifremer, Boulogne sur Mer

Objectif : Développer un atlas de la Manche comme aide à la réflexion et à la décision pour la gouvernance et une gestion durable des ressources marines vivantes et des activités humaines.

*Aim: To develop its atlas as a « toolbox » to help in decision-making and planning for both sound governance and sustainable management of the Channel sea's marine resources and human activities.*



# CHARM Phase 3

## Channel integrated Approach for marine Resource Management

17 partenaires/partners (26 labs)

3 ans/years (2009-2012)

11.6 M€

### Nord-Pas de Calais

- 1.1- IFREMER RH et LER Boulogne-sur-mer
- 2- Station Marine de Wimereux/Université des Sciences et Technologies de Lille (USTL-LOG)

### Calvados :

- 1.2- IFREMER RH et LER Port-en-Bessin
- 3- Université de Caen (UCBN-LBBM/UMR 100)

### Ile-et-Vilaine :

- 1.3- IFREMER LER Dinard
- 4- Pôle halieutique Agrocampus Rennes (AGRO-PH)
- 5- Université de Rennes 2 (UHB-RESO)
- 6- ALKANTE

### Finistère :

- 1.4- IFREMER STH-DEM-IDM-DYNECO Brest
- 7- Université de Bretagne Occidentale (UBO-AMURE)

### Paris :

- 1.5- IFREMER DCOM Issy

### Medway :

- 8- University of Greenwich at Medway (UoG)

### Kent :

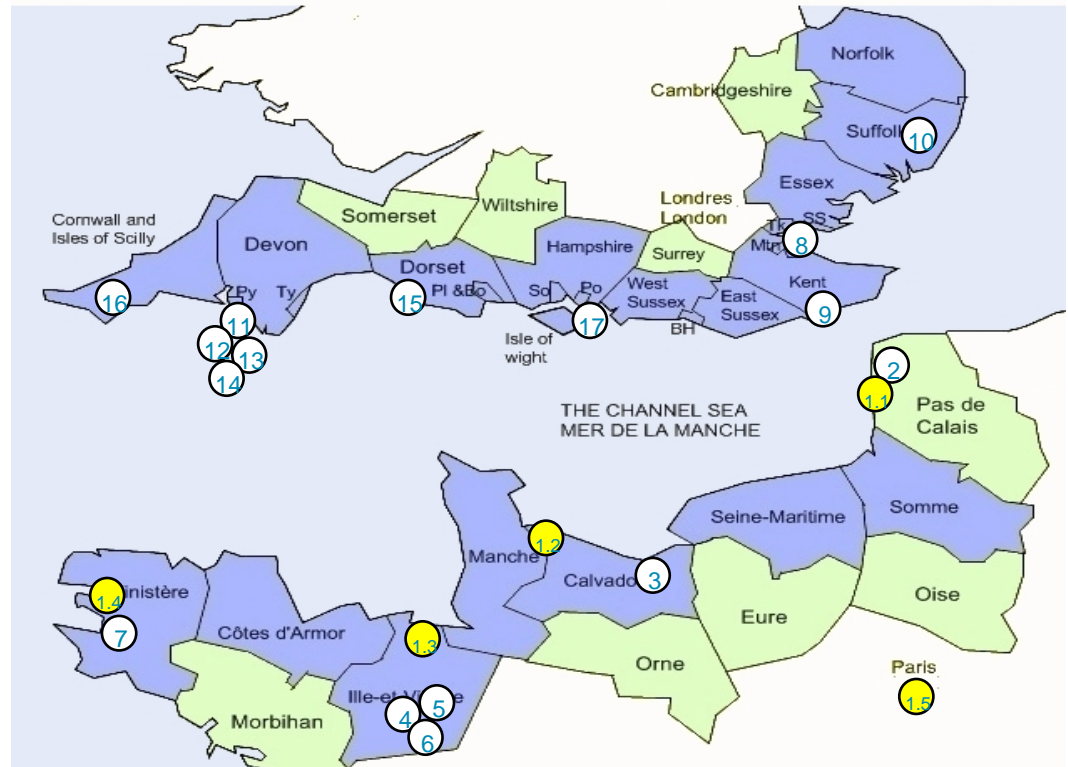
- 9- University of Kent (UoK-DICE)

### Suffolk :

- 10- CEFAS

### Plymouth (Devon):

- 11- Plymouth Marine Laboratory (PML)
- 12- Sir Alister Hardy Foundation for Ocean Science (SAHFOS)
- 13- Marine Biological Association of the United Kingdom (MBA)
- 14- University of Plymouth (UoPI-MI)



### Dorset :

- 15- Marinelifelife Ltd

### Cornwall :

- 16- University of Exeter, Cornwall Campus (UoE-CEC)

### Portsmouth :

- 17- University of Portsmouth Higher Education Corporation (UoP-CEMARE)

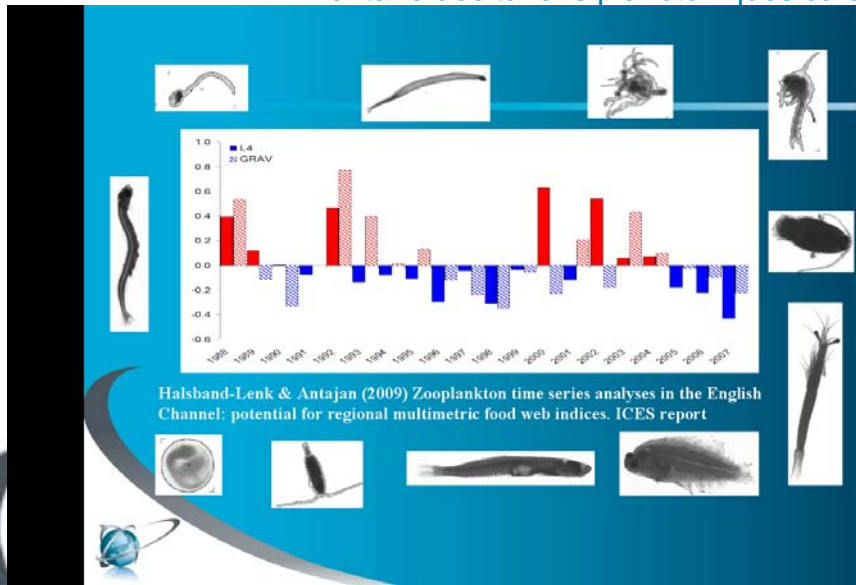
# Collecte, standardisation & cartographie de l'information : Collection & standardisation of information

1 Inventaire des données physiques, environnementales, biologiques et d'activité humaine.  
*Inventory of available physical, environmental, biological and human activity data*

2 Phyto- & zoo- plancton / *Phyto- & zooplankton*  
2-1 Inventaire des taxons planctoniques caractérisés

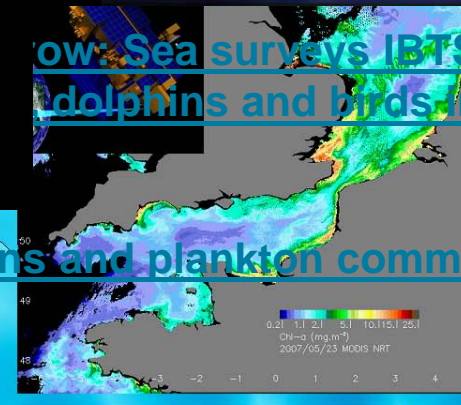
Data collected so far

Theme-Domaine	CHARM3 contact point	CompteDeCHARM3 contact point
Bio-geochemistry	Claudia Halsband-Lenk	2
biology	Brendan Godley	8
Biology	Claudia Halsband-Lenk	4
Biology	David Johns	26
Biology	Georg Engelhard	5
Biology	Prof. David Sims	29
Biology	Sandrine Vaz	18
Biology	Sophie Pitois	171
biology	Stephen Votier/Stuart Bearhop	4
Biology	Tom Blereton	13
Chemistry	Claudia Halsband-Lenk	2
Chemistry	Prof. David Sims	1
Environment	Sandrine Vaz	8
Environmental	Prof. David Sims	5
Fisheries	Frank Coppin	7
Fisheries	Georg Engelhard	3
Oceanography	Prof. David Sims	1
Oceanography	Sandrine Vaz	3
Physics	Claudia Halsband-Lenk	2
Sedimentology	Sandrine Vaz	2



Now: Sea surveys IPTS/CGFS presentation  
dolphins and birds in Western Channel

Tomorrow: Overview of coastal conditions and plankton communities presentation



Estimation of the primary production in the Channel





# Collecte, standardisation & cartographie de l'information : Collection & standardisation of information

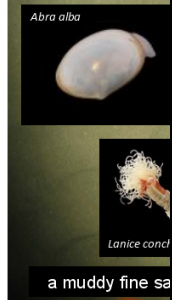
3 Ichtyoplancton (identification automatique, zones de ponte, de transports larvaires, proies)  
*Ichthyoplankton (automated imagery recognition, spawning grounds, larvae, preys)*

4 Invertébrés benthiques  
4-1 Rôle des inverté



Function  
*Ophiothrix*  
easter

1. Role



Supervisors

Université



The collage contains several key elements:
 

- Top Left:** A circular inset showing a microscopic view of a larva.
- Top Center:** A map of the North Sea region with a color-coded heatmap. A legend indicates 'Pycnoclines per mille', 'Stade 1', 'Stade 2', and 'Stade 2+'. A scale bar shows 'Distance: 0 to 144'.
- Top Right:** A diagram of a ship's deck with a net and associated equipment.
- Middle Left:** Three circular images labeled 'Stade 1', 'Stade 2', and 'Stade 2+'. Below them is the word 'Balai'.
- Middle Right:** A map titled 'Spatial distribution of big clupeidae (2008)' showing a heatmap of the North Sea.
- Bottom Center:** A photograph of a ship's deck with a large net being hoisted.
- Bottom Right:** A map titled 'fish larvae samples 1950-2006' showing a distribution of yellow dots across the North Sea.
- Bottom Center:** A map titled 'Tomorrow: spawning grounds location in the North Sea' with a legend for 'Distance' and 'Scope for Growth'. A scale bar indicates '150 km' and the source is 'Kostylev & Hannak, 2007'.

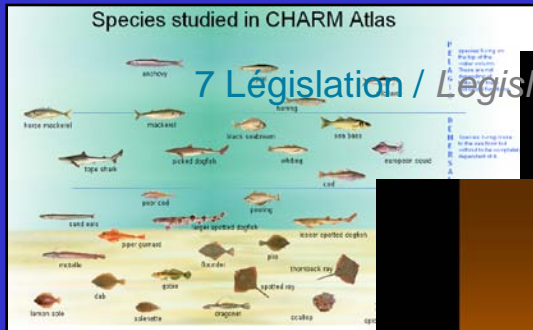
Tomorrow: spawning grounds location in the North Sea



# Collecte, standardisation & cartographie de l'information : Collection & standardisation of information

5 Classification des habitats marins / *Marine habitat classification*

6 Données d'...  
6-1 Donnée



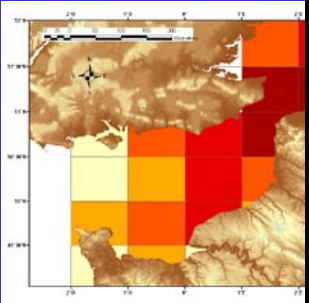
7 Legislation / *Legislation*

Fisheries, materiality and place identity

**CHARM 3**

*-The Regulatory Issues-*

Stuart R. Harrop  
 Chair of Wildlife Management Law  
 Director  
 Durrell Institute of Conservation and Ecology  
 School of Anthropology and Conservation  
 University of Kent  
 UK



minimising effort from VMS

loss of place and fisheries



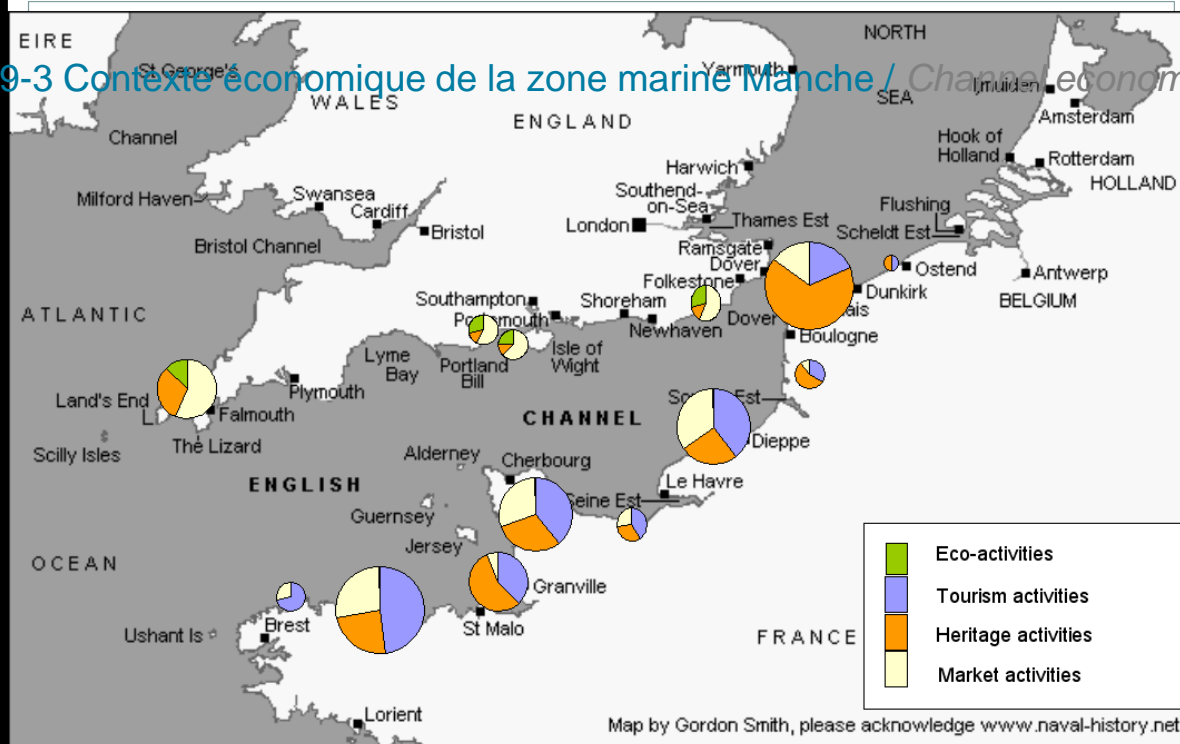
8 Cartographie & modélisation de l'habitat / *Cartography & habitat modelling*

9 Contexte économique / *Economic situation*

9-1 Dynamique des communautés exploitées et viabilité des pêcheries / *Dynamics of marine exploited communities and viability of fisheries*

9-2 Div

9-3 Contexte économique de la zone marine Manche / *Channel economic situation*



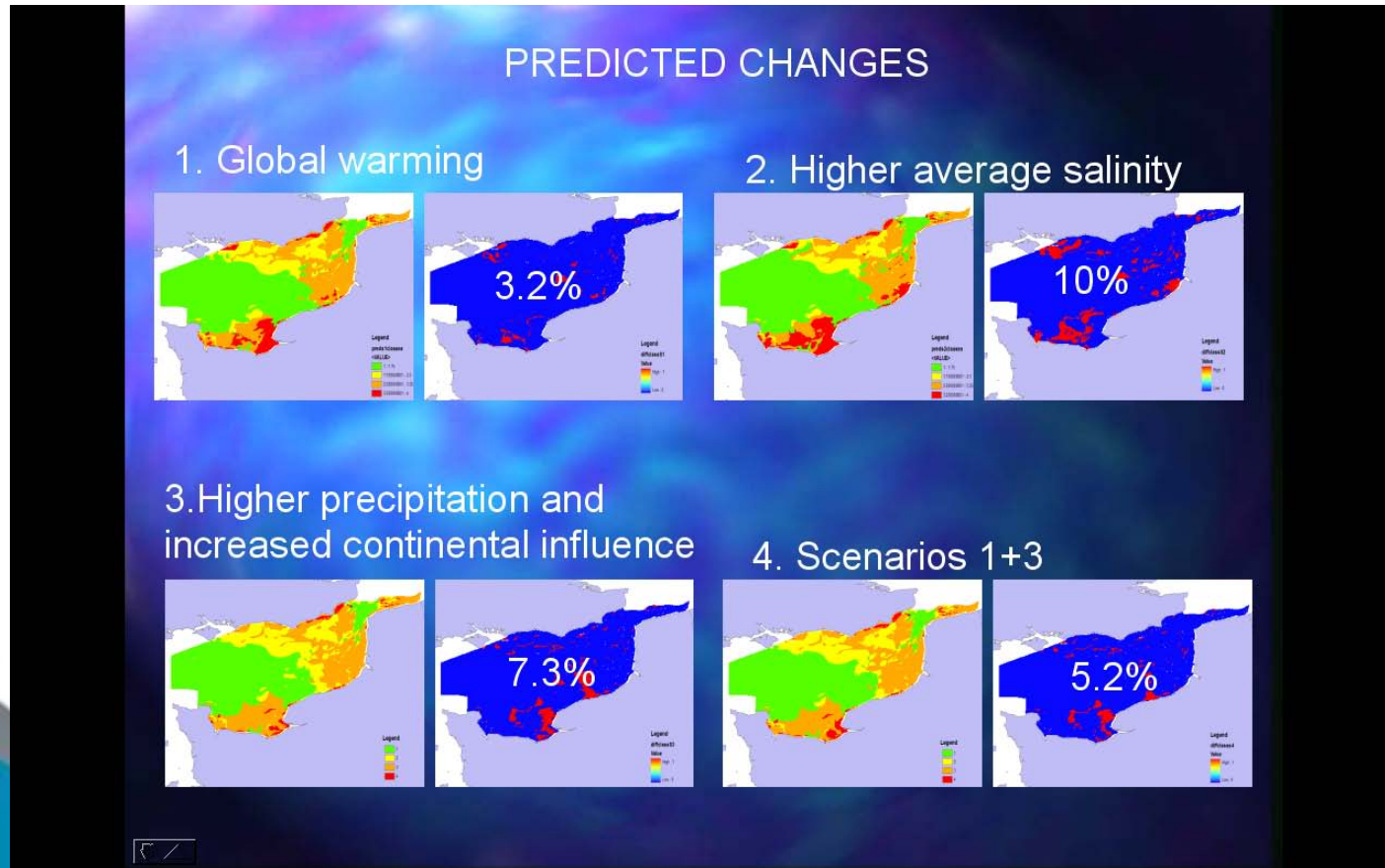
10 Changement climatique / *Climatic change*

10-1 Changement de composition des communautés benthiques / *Changes in the composition of benthic communities*

**Tomorrow: Scenarios of changes in benthic species distribution in context of global climate change**

10-2 Changement de distribution des espèces et communautés halieutiques / *Change in the distribution of marine fish and their communities*

10-3 Effet du changement climatique sur les prédateurs supérieurs / *Changes in marine top predators*





11 Approches fonctionnelles & modèles de réseaux trophiques / *Functional approaches & trophic modelling*

11-1 Conséquences des perturbations anthropiques sur la population de sole / *Consequences of human disturbances on sole Solea solea population*

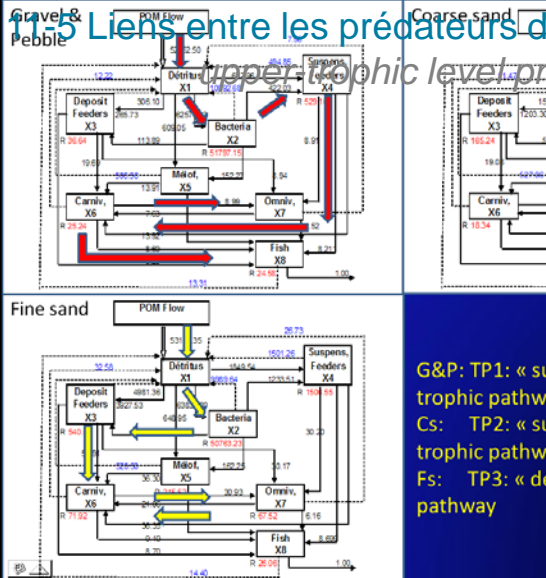


**TASK 3: WHERE ARE WE?**

(C. Villanueva & D. Gascuel)



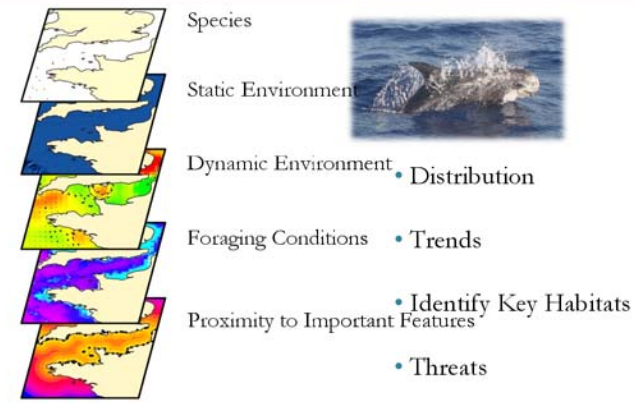
**Comparison between communities**



G&P: TP1: « s  
trophic pathw  
Cs: TP2: « s  
trophic pathw  
Fs: TP3: « d  
pathway

**11.5 Liens entre les prédateurs des niveaux trophiques élevés et les écosystèmes pélagiques / Linking upper trophic level predators with pelagic ecosystems**

**Action Item 11.5**



of benthic ecosystems

models in the

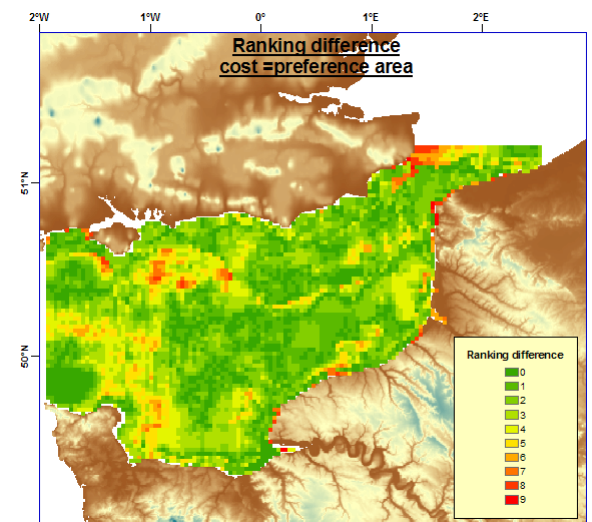
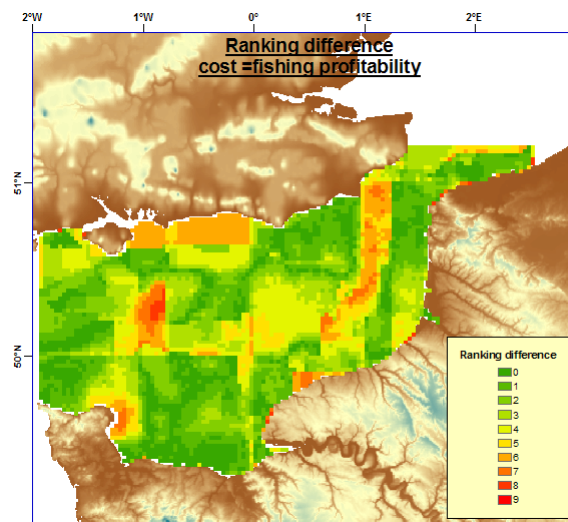
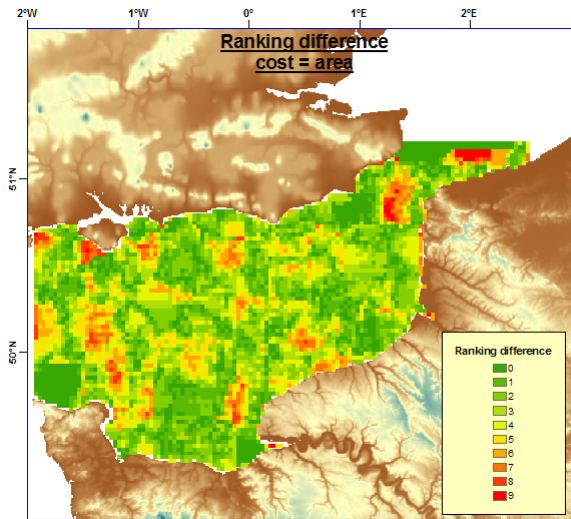
network models of

**Linking benthic Eastern Channel**

**le population**



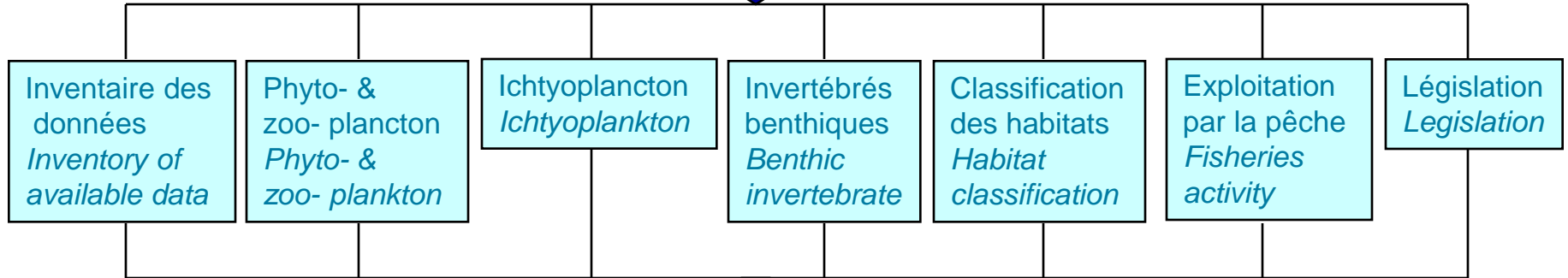
12 Plan de gestion spatialisée de la Manche orientale / *Marine spatial planning in the eastern Channel*



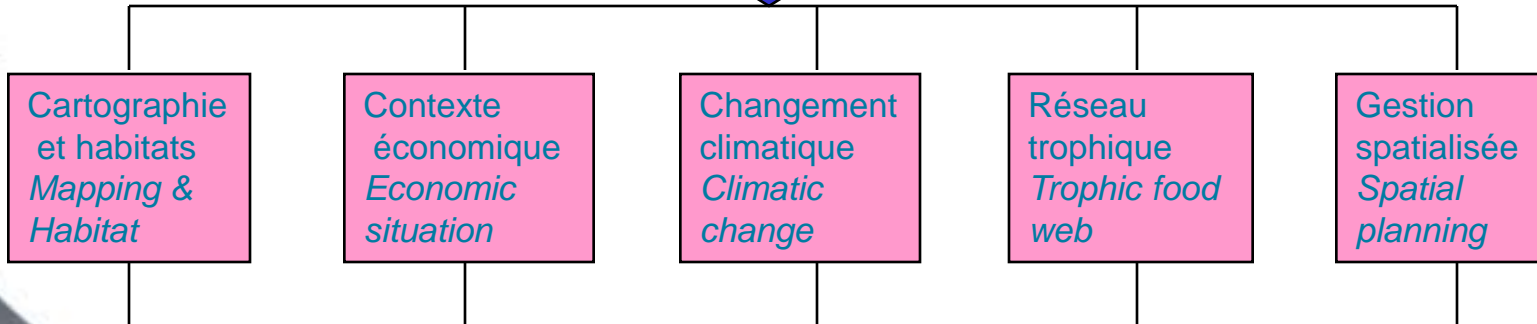
Tomorrow: Marine Conservation planning



**Collecte, standardisation & cartographie de l'information**  
*Collection & standardisation of information*



**Intégration de l'information par la modélisation**  
*Information integration*

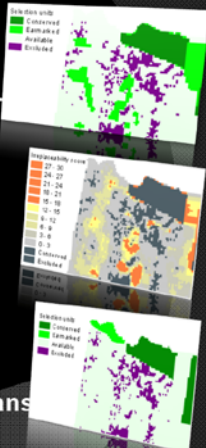


**Outils & dissémination de l'information**  
*Tools & communication of information*



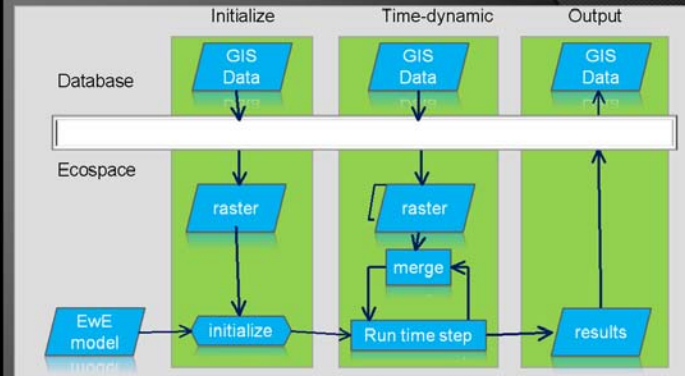
## Use of CLUZ

- Using Marxan to identify near-optimal conservation landscapes
- Using MARXAN to produce irreplaceability scores
- Using CLUZ to interactively create and modify existing plans



## GIS Interface Tool – contents by C. Villanueva

L. Dupuis, F. Khalid, C. Villanueva, B. Ernande, S. Mackinson



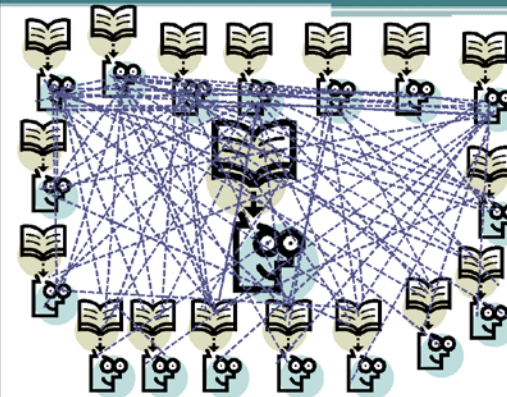
Steenbeek and Christensen, 2009

## Interactive Web Atlas

Interactive CHARM Atlas  
(Web GIS)

Web Atlas

Graphs Static Contents Audio Photos Videos etc.



Tomorrow: CHARM3 Web portal and Tools





Merci de votre attention

*Thanks for your attention*



france (manche channel) england  
**interreg**

European Regional Development Fund  
The European Union, investing in your future



Fonds européen de développement régional  
L'union Européenne investit dans votre avenir