Golfe du Morbihan

REPORT

Partner's meeting
April 2nd 2014

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VALMER

France (Manche) England interreg
European Regional Development Fund
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Fonds européen de développement régional
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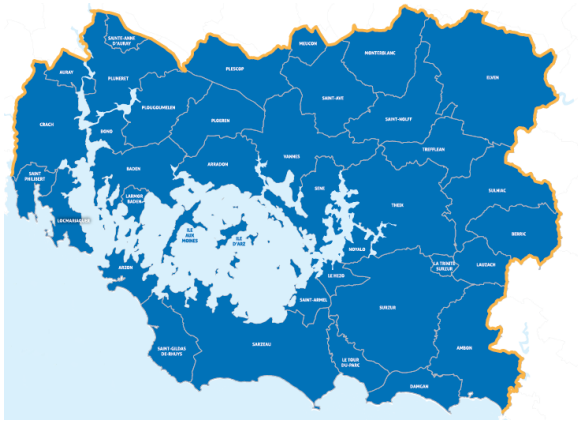
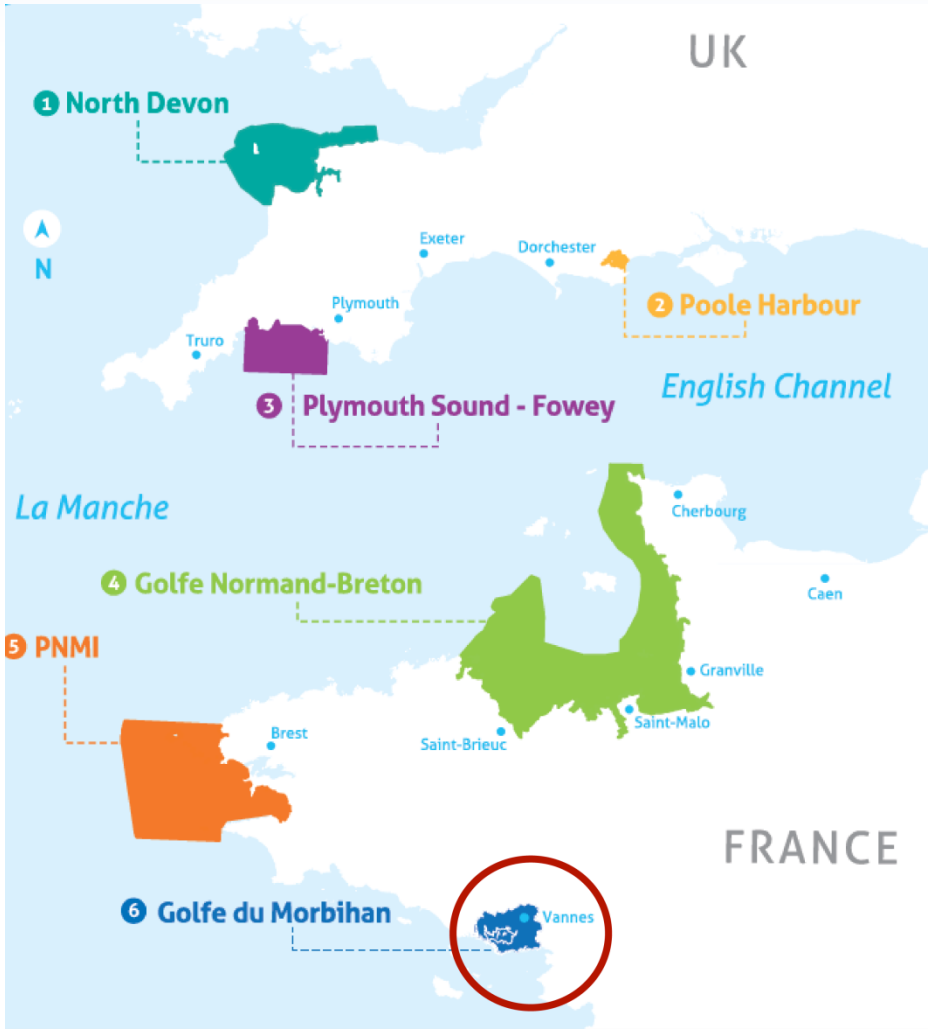
Outline approach

6 Golfe du Morbihan

Key Habitats	Little sea with many islands ; intertidal mud and sand flats ; broad intertidal mudflats, seagrass beds
Designations	Natural Regional Park Project, Ramsar, EC Habitats and Species Directive, national designations
Human Activities	Shellfish farming, fishing, tourism, recreation
Focus of Study	Ecosystem services provided by "seagrass beds" habitats (eg biodiversity, sedimentation, etc.).





Outline approach

Focusing on an habitat:
Ecosystem services (ES) offered by
zostera seagrass beds

Aims:

1. Raise **awareness**
2. **Improve and integrate knowledge**
3. Define with local stakeholders **management options** to protect seagrass beds

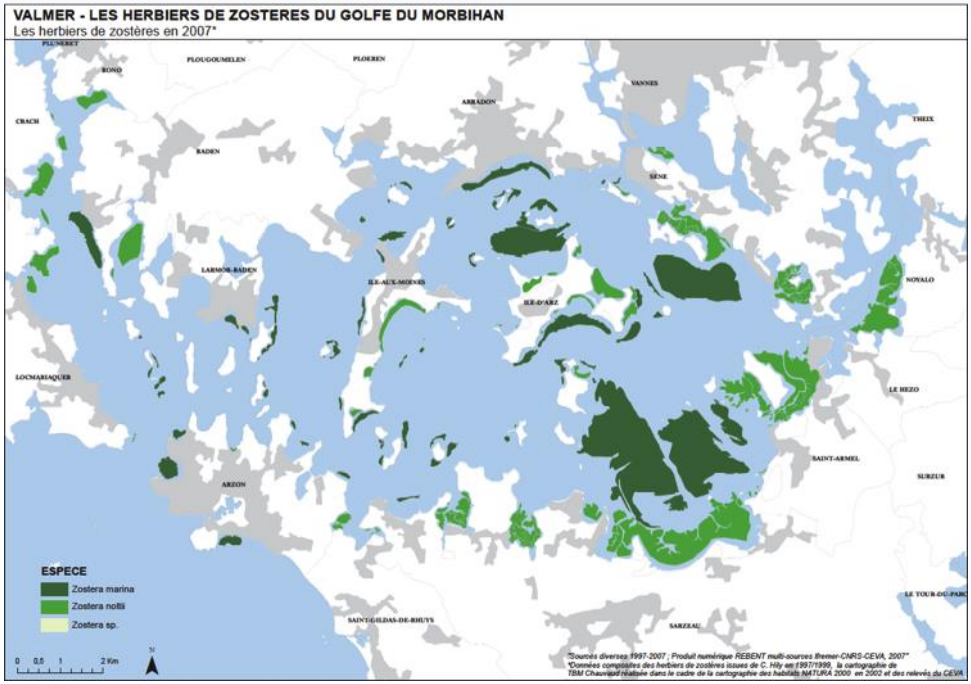
Seagrass beds in the golfe du Morbihan

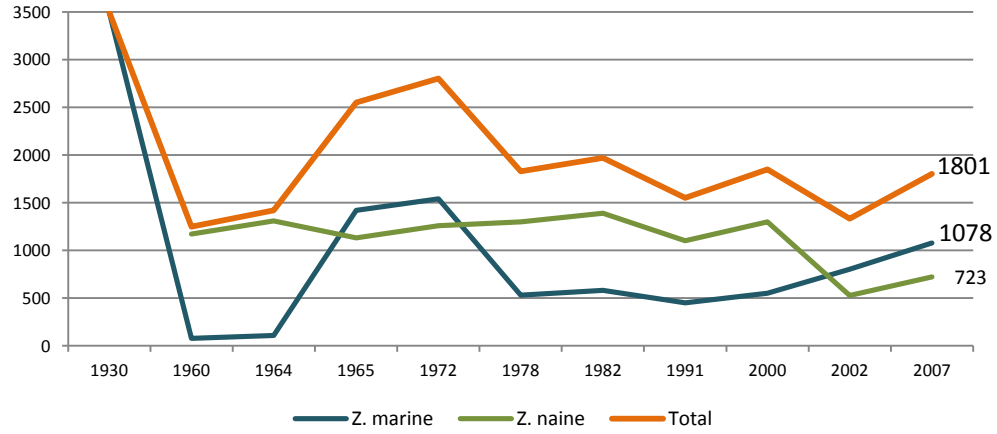
2 species :

Zostera marina : 11 km² in 2007

Zostera noltei : 7,2 km² in 2007

→ 2nd largest seagrass beds in France (metropolitan)





Seagrass are sensitive to environmental conditions and human activities pressures

→ important variations of location and surfaces

→ need of evidences about drivers of changes in order to improve conservation

Approach step by step

Interviews

Literature review

Data collection

« Common culture » workshop — 17 sept. 2013

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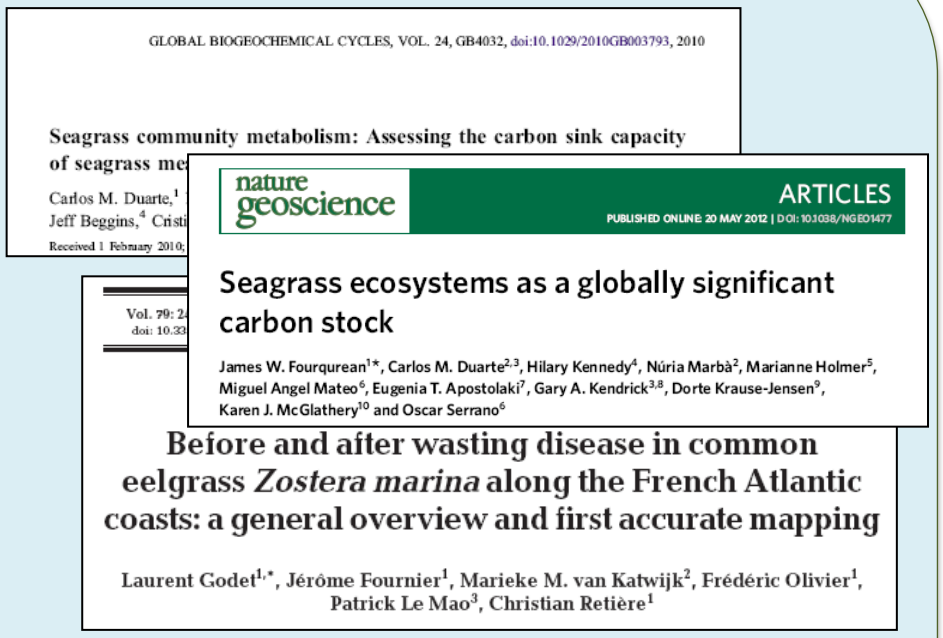
« Scenarios and management options » workshops — c

Results discussion and dissemination

Interviews and literature review

interviews of scientists (12)
& scientific literature (133 articles)


GLOBAL BIOGEOCHEMICAL CYCLES, VOL. 24, GB4032, doi:10.1029/2010GB003793, 2010

Seagrass community metabolism: Assessing the carbon sink capacity of seagrass me

Carlos M. Duarte,[1] Jeff Beggins,[4] Cristi

Received 1 February 2010;

nature geoscience

ARTICLES

PUBLISHED ONLINE 20 MAY 2012 | DOI: 10.1038/NGEO1477

Seagrass ecosystems as a globally significant carbon stock

James W. Fourqurean[1]*, Carlos M. Duarte[2,3], Hilary Kennedy[4], Núria Marbà[2], Marianne Holmer[5], Miguel Angel Mateo[6], Eugenia T. Apostolaki[7], Gary A. Kendrick[3,8], Dorte Krause-Jensen[9], Karen J. McGlathery[10] and Oscar Serrano[6]

Vol. 79: 2
doi: 10.33

Before and after wasting disease in common eelgrass *Zostera marina* along the French Atlantic coasts: a general overview and first accurate mapping

Laurent Godet[1,*], Jérôme Fournier[1], Marieke M. van Katwijk[2], Frédéric Olivier[1], Patrick Le Mao[3], Christian Retière[1]

interviews of local stakeholders (>40)
& grey literature

Disparition of seagrass beds in 1934

Grown fast after the very cold winter of 1962

Even if we walk on it, the impact is limited

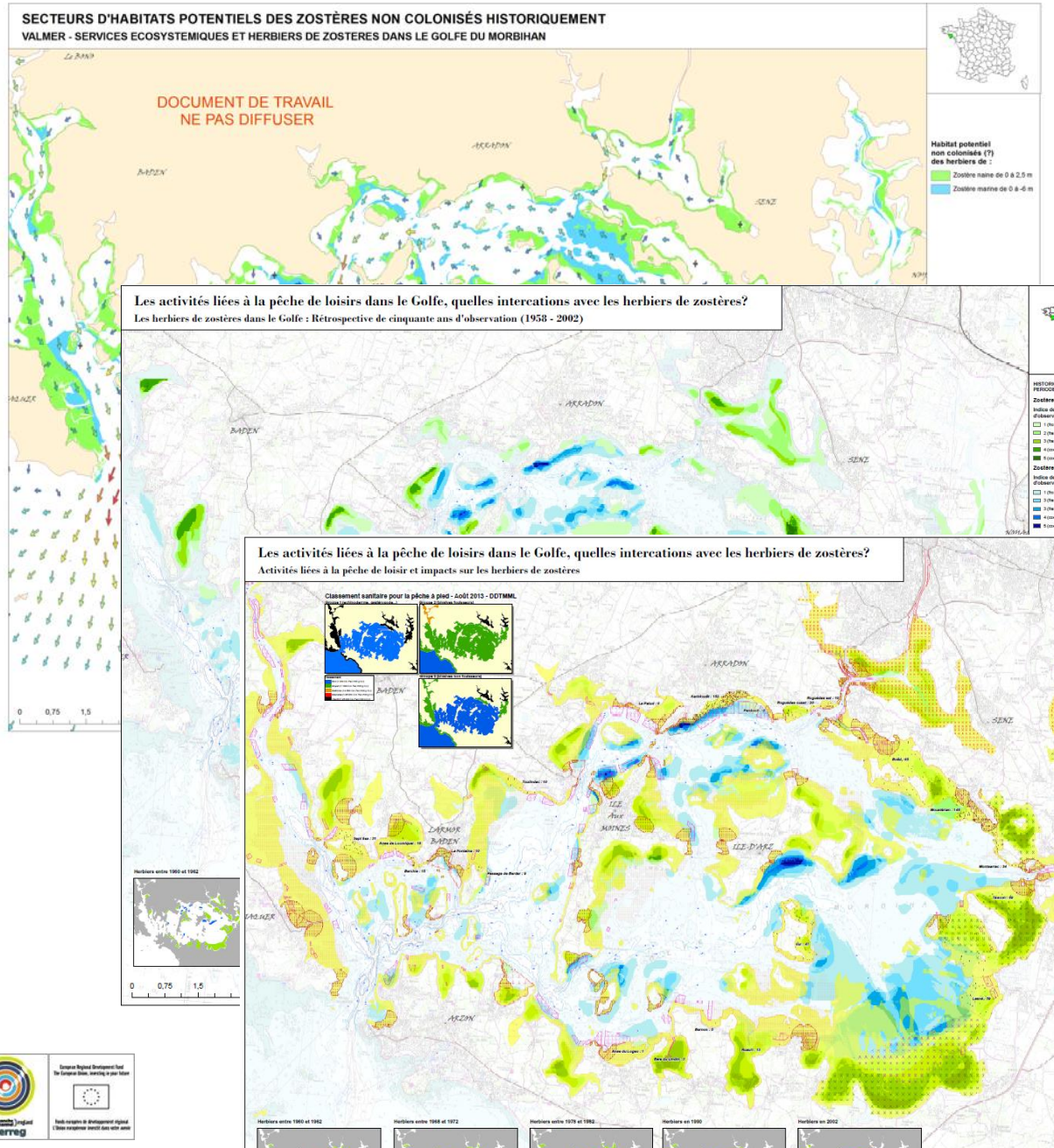
To decide how to protect, we need precise maps

The zostera are progressing in the south-east of the gulf

Where they have disapeared, there are no more seabass

> Activities / Seagrass interactions
> Questions for science (identify gaps of knowledge)

Data collection and map analysis



Research conducted on:

1. Potential habitats of seagrass
2. Seagrass beds location known for long (observed since 1960)
3. Interactions with human activities

Challenges:

- Access available data (right issues)
- Evaluate the data quality
- Find historical data

Development of the ZOSTERA platform

Knowledge platform on zostera

(*Zostera marina* & *Zostera noltei*)

- Literature knowledge
- Stakeholder's knowledge
- Data analysis and maps
- Interaction's diagrams between seagrass ES and marine activities
- Description of activities (sailing, diving, fishing, etc.)

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« Scenarios and management options » workshops — sept. 2014

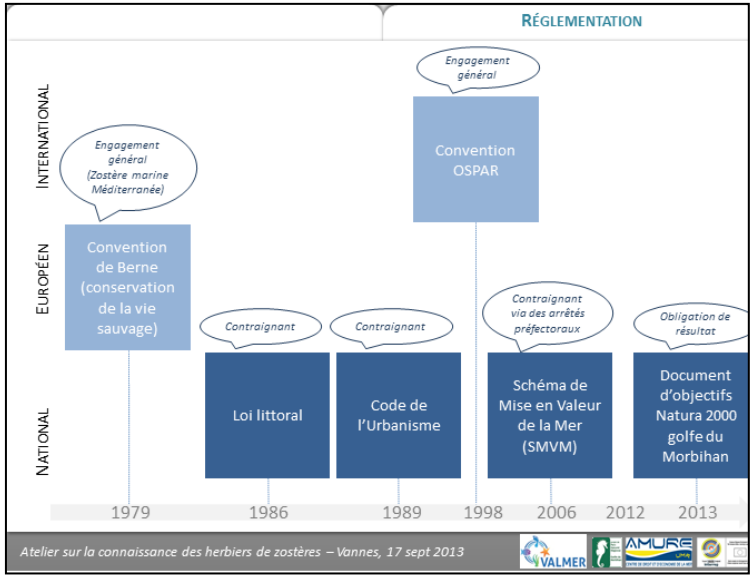
Results discussion and dissemination — dec. 2014

« Common culture » workshop

17 September 2013

18 participants + leading team (SIAGM & UBO: 6)

1. Presentation of the VALMER project
2. Diagnosis of the ecology and biology of seagrass beds
3. Knowledge about regulation and legal protection of the seagrass beds



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« Ecologists-managers seagrass » workshop

10th and 11th February 2014

31 & 36 participants

Scientists from all around France and **local managers and policy makers**

1. Analysis of the EF & ES of seagrass beds in the golfe du Morbihan
2. Share scientific knowledge with managers
3. Identify the needs in terms of knowledge, evidence and tools in order to support a sustainable management of seagrass beds.

→ Outcomes of the workshop:

- **Communication document** with the EF and ES validated of the seagrass beds in the golfe du Morbihan
- **Scientific publication** comparing the sites and the management issues
- Wish to develop a **more integrated approach between scientists and managers** on the issue of seagrass beds conservation

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Focus groups

With stakeholders
(representatives of professional and leisure activities, NGOs, elected members, etc.)

1. Recreational fishing (Jan : 9 participants + facilitators)
2. Sailing and mooring (Feb: 9 participants + facilitators)
3. Water recreational activities (March: 6 participants)
4. Professional fishing (to be done)
5. Shellfish farming (to be done)
6. Urban planning and catchment area (to be done)

→ Presentation of the EF & ES
→ Stakeholder survey on the awareness and use of ESA
→ Stakeholder discussion and consultation about their interactions with seagrass beds through their activities

In order to have better knowledge and raise awareness on:
→ Practices and marine activities
→ Interactions between seagrass beds and marine activities
→ Identify management new options or improvement

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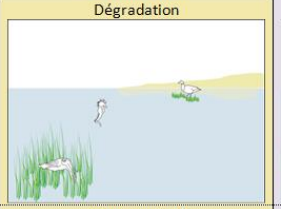
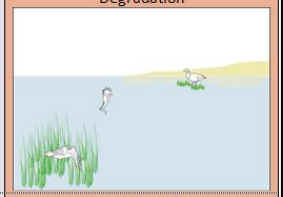
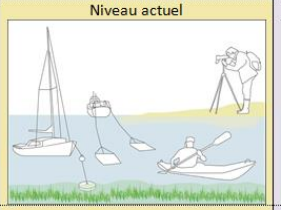
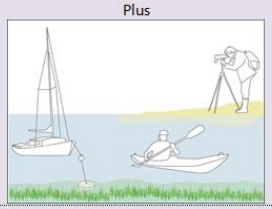
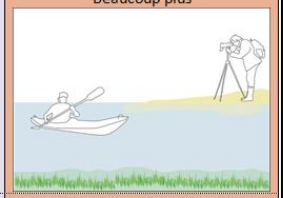
Ecosystem Services Assessment
Choice experiment survey

Addressed to inhabitants of the golfe du Morbihan (+/- 600)

→ Identify the **willingness of the population** to protect seagrass beds

→ Identify the **action levers** on which managers could act to improve seagrass beds management

1	**Statu quo :** ce qui va probablement se passer si on ne fait rien	**Scénario A**	**Scénario B**
Evolution des herbiers (tendances) Etat écologique des herbiers	Dégradation 	Maintien en l'état actuel	Dégradation 
Contraintes sur les activités Mises en place par l'administration pour protéger les herbiers (exigence de pratiques plus écologiques jusqu'à l'interdiction)	Niveau actuel 	Plus 	Beaucoup plus 
Coût public Dépenses de la collectivité pour suivre les herbiers, les protéger, sensibiliser...	Ni plus, ni moins €	Beaucoup plus €€€	Plus €€
Je préfère choisir	☐	☐	☐

VALMER

AMURE UMR CENTRE DE DROIT ET D'ECONOMIE DE LA MER — iuem — PNMO — Golfe du Morbihan

ENQUETE

« Les herbiers de zostères »

Date :	Numéro de l'enquête :
Lieu :	Nom de l'enquêteur : ○ HR ○ TV ○ .....

I. Présentation de l'enquête

Bonjour, nous réalisons une enquête pour l'Université de Brest sur les herbiers de zostères. Ce sont des plantes marines que l'on trouve dans le golfe du Morbihan. Nous interrogeons les habitants du golfe du Morbihan pour savoir ce qu'ils pensent de leur gestion afin de l'améliorer. Pour y répondre vous n'avez pas besoin d'avoir de connaissance particulière sur les herbiers de zostères. Vos réponses sont anonymes et confidentielles.

Cette enquête comprend 28 questions et dure environ 15-20 minutes.

Si vous avez des questions vous pouvez contacter :

Juliette Herry (SIAGM) : juliette.herry@golfe-morbihan.fr
Manuelle Philippe (UBO) : manuelle.philippe@univ-brest.fr

1. Quelle commune du golfe du Morbihan habitez-vous ?
Nom de la commune :

2. Est-ce votre résidence...
☐ *Principale*

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Scenario development

- **Normative** scenario
- Goal to achieve: **protect the seagrass beds & maintain marine activities**
- No mathematical modeling
- Scenario used to develop a **marine vision (= action plan)** for the protection of seagrass beds
- **Backcasting method**:
  - How to monitor the seagrass beds? (methods, indicators, resources sharing)
  - Proposition of management options
  - Development of communication tools to raise awareness on seagrass beds

- ESA survey will feed our scenario and action plan

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Challenges

- Seagrass beds in the golfe du Morbihan are:
  - Not very well known
  - Don't directly benefit to the potentially impacting activities
- Data collection is difficult
- Uncertainties on:
  - ES offered by seagrass beds (2 species with different EF & ES)
  - Qualification & quantification of interactions (marine activities & seagrass beds)
  - Efficiency of management measures (existing or to be created)
- Questions:
  - How to make the difference between habitat's changes due to natural and anthropogenic drivers?
  - How the ES provided by seagrasses beds evolve depending on the habitat quality?
  - How to measure the potential impacts of marine activities on seagrass beds?
    (cumulative effect and threshold effect; resilience pressure over time and space)

Results and work in progress

- Collection of scientific and local knowledge on seagrass beds

→ local diagnosis well documented
→ lessons learned on how to do it / why / efficiency transferable to other sites/contexts

- Outcomes and outputs useful for local management

→ scientific evidence
→ proposals for a better management
→ deliberation between administration and stakeholders on the management
→ large communication to the public

- Lessons learned about the use of ecosystem services concept for management

→ usefulness
→ limits

Thank you

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projet de
Parc
Naturel
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Golfe du
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