

# The OHM *Littoral méditerranéen* conceptual framework

## *Origin, design and testing*

Samuel Robert\*, Vanina Pasqualini<sup>2</sup>, Stéphane Ghiotti<sup>3</sup>, Patrick Monfort<sup>4</sup>

<sup>1</sup>ESPACE, Aix-en-Provence.

<sup>2</sup>SPE, Corte.

<sup>3</sup>ArtDev, Montpellier.

<sup>4</sup>HSM, Montpellier.

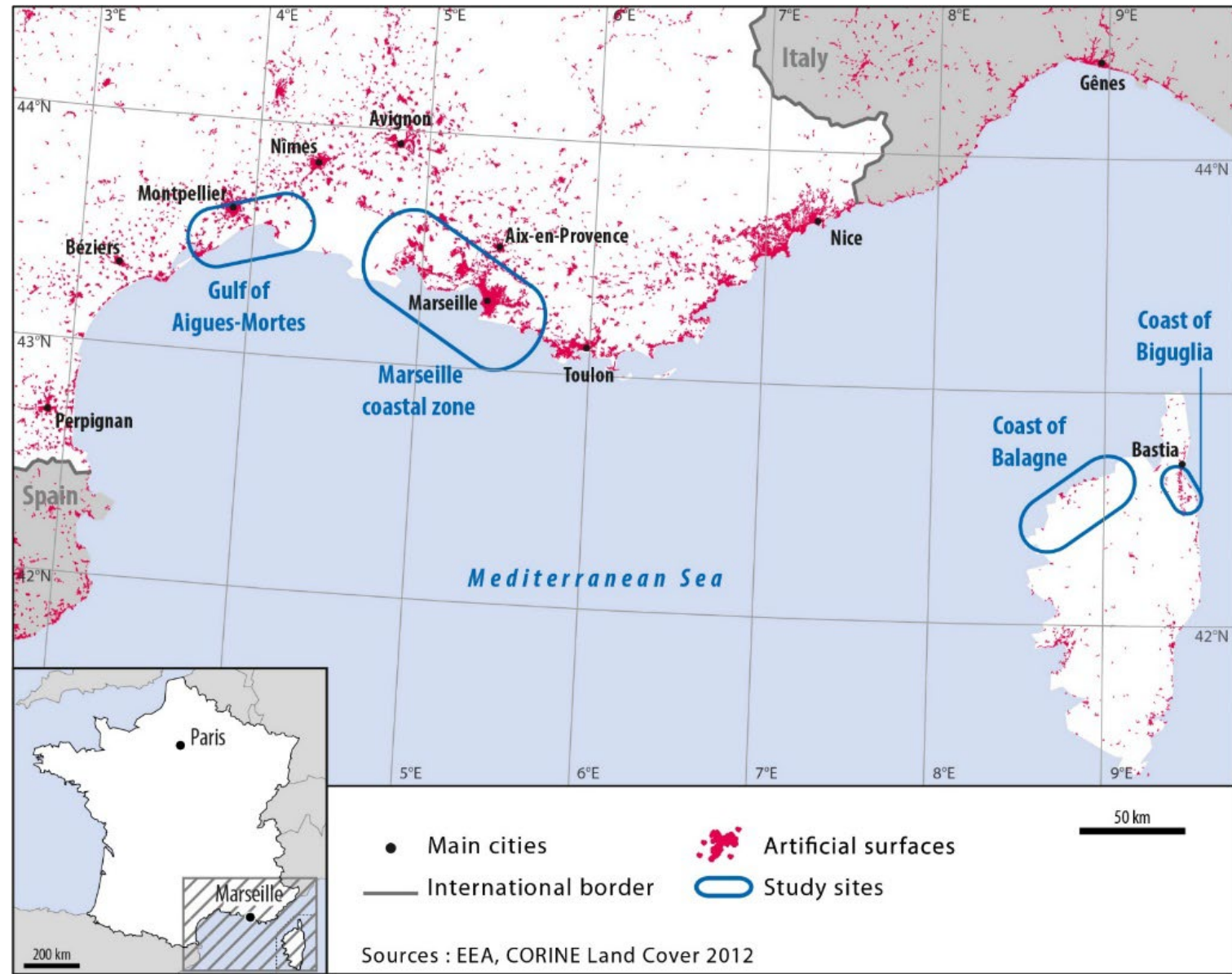


## Conceptual/functional framework of the OHM-DRIIHM and SES observation

# OHM Littoral méditerranéen

- Observing and analysing coastal urban and recreational pressures
- Created in 2012 by French CNRS *Ecology and environment Institute* *Human and social sciences Institute*
- Part of a LabEx DRIIHM ([www.driihm.fr](http://www.driihm.fr))
- 30 research units, around 230 persons on the mailing list
- 4 study sites
- beaches, coastal lagoons, ports, protected areas

<http://www.ohm-littoral-mediterraneen.fr/>



## Conceptual/functional framework of the OHM-DRIIHM and SES observation

International Symposium of LabEx DRIIHM  
Inter-Disciplinary Research Facility on Human-Environment Interactions - ANR-11-LABX-0010

June 5th-7th, 2024 – Montpellier (France)



# *OHM Littoral méditerranéen : anthropogenic structuring*

Since WW2, increasing urbanisation + anthropogenic pressures on Mediterranean coasts

*Urban expansion and reclaimed lands*

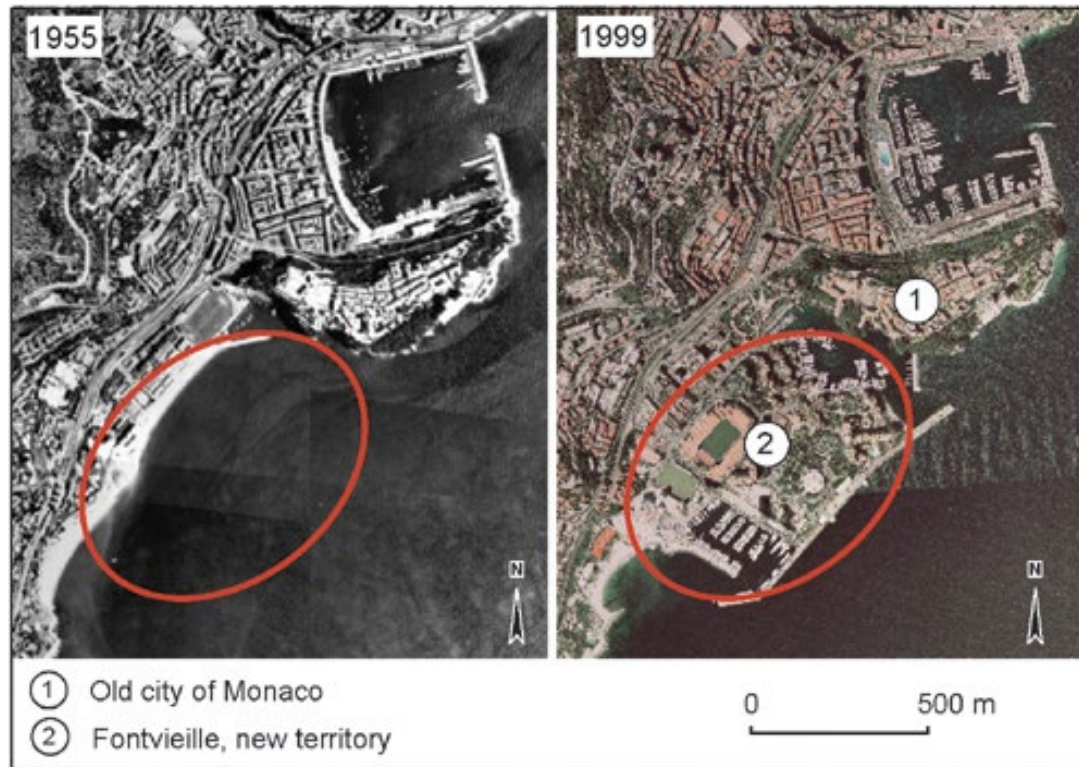


Figure 6 - Urbanization on reclaimed lands - Fontvieille in Monaco

*Increasing recreatives uses*

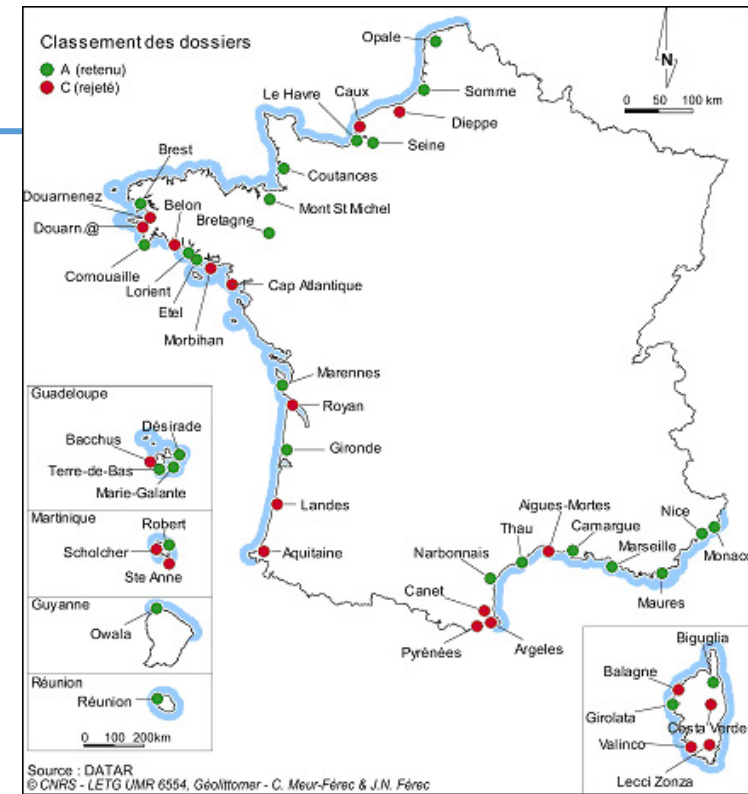
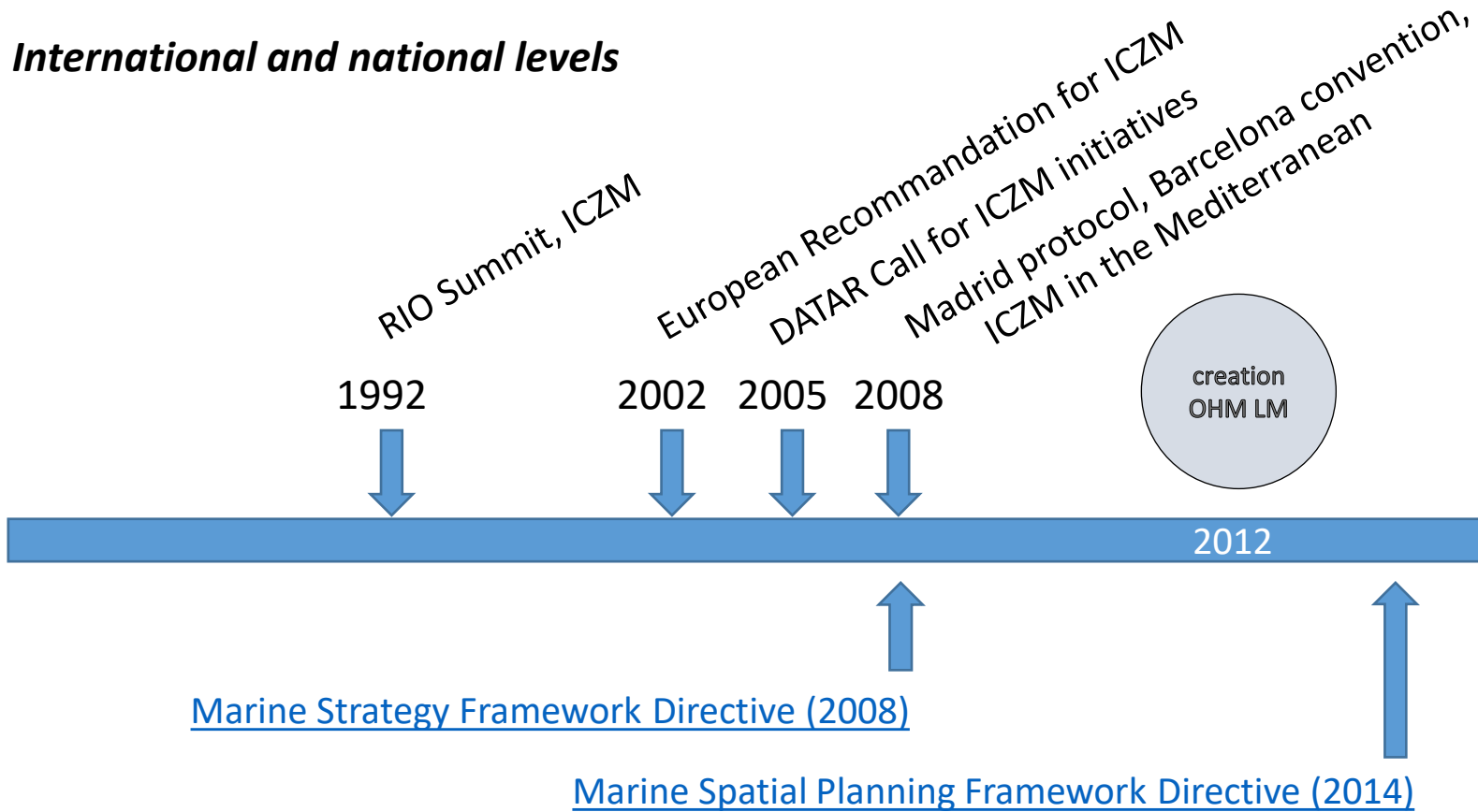


## **Conceptual/functional framework of the OHM-DRIIHM and SES observation**

# OHM Littoral méditerranéen : disruptive event

## Integrated management principles ICZM

International and national levels



(Guineberteau et al., 2006)

## Conceptual/functional framework of the OHM-DRIIHM and SES observation

International Symposium of LabEx DRIIHM  
Inter-Disciplinary Research Facility on Human-Environment Interactions - ANR-11-LABX-0010

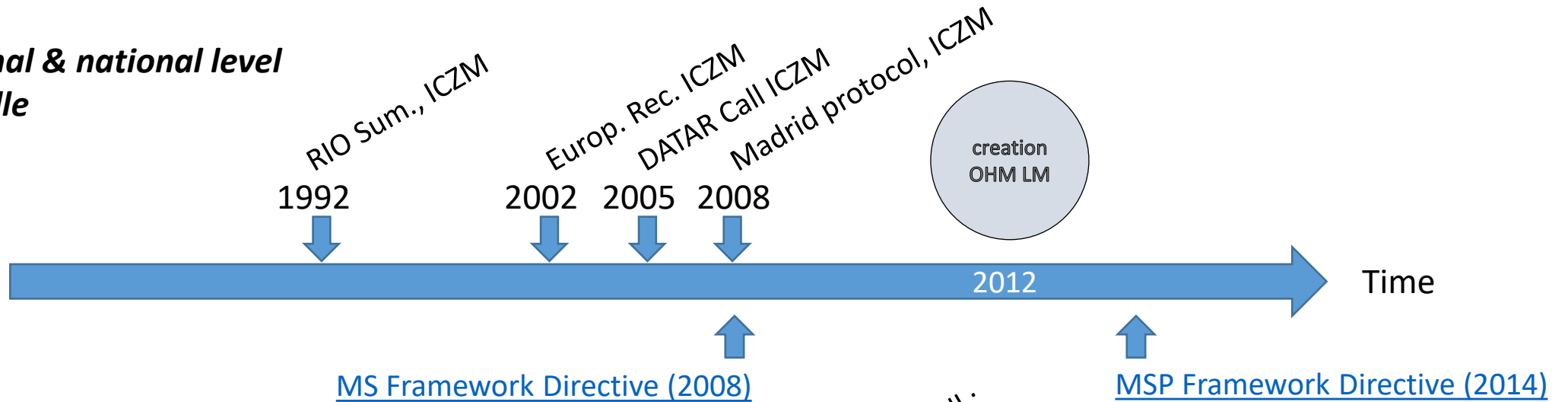
June 5th-7th, 2024 – Montpellier (France)



# OHM Littoral méditerranéen : disruptive event

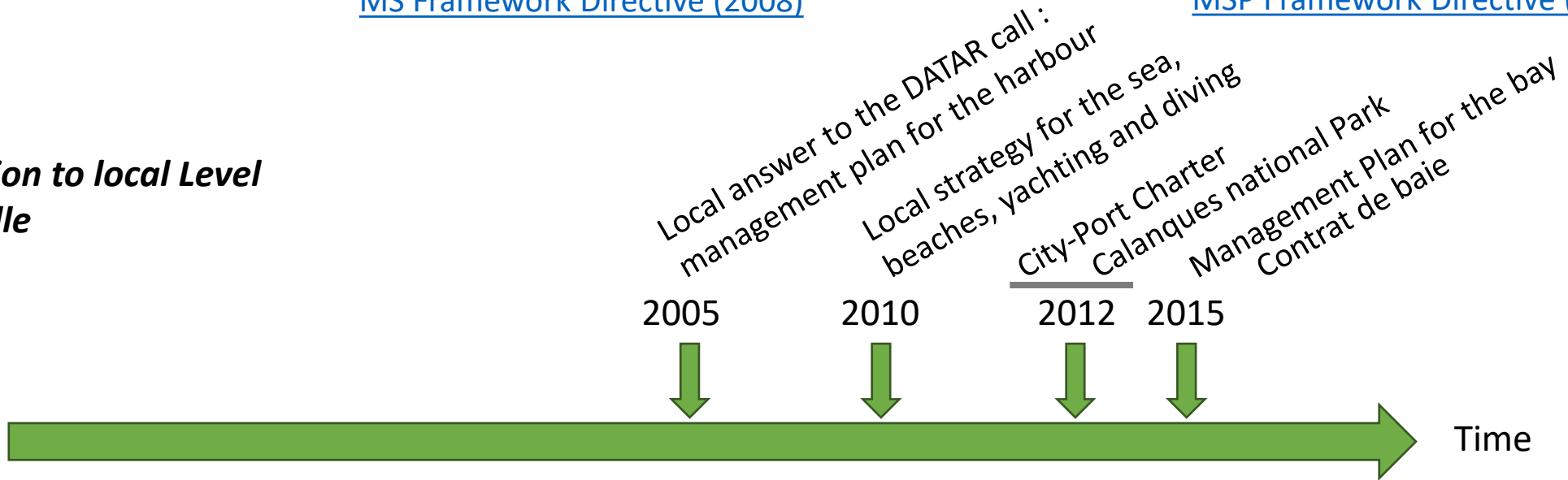
**International & national level**

**Ex: Marseille**



**Transposition to local Level**

**Ex: Marseille**



## Conceptual/functional framework of the OHM-DRIIHM and SES observation

# ***OHM Littoral méditerranéen : questionning***

---

How do Mediterranean coastal zones face urban pressure and recreational demand ?

How are integrated management principles transposed into coastal zone policies?

## Conceptual/functional framework of the OHM-DRIIHM and SES observation



# Testing the OHM-LM conceptual framework

## Case study 1

### Urban sprawl dynamics and management

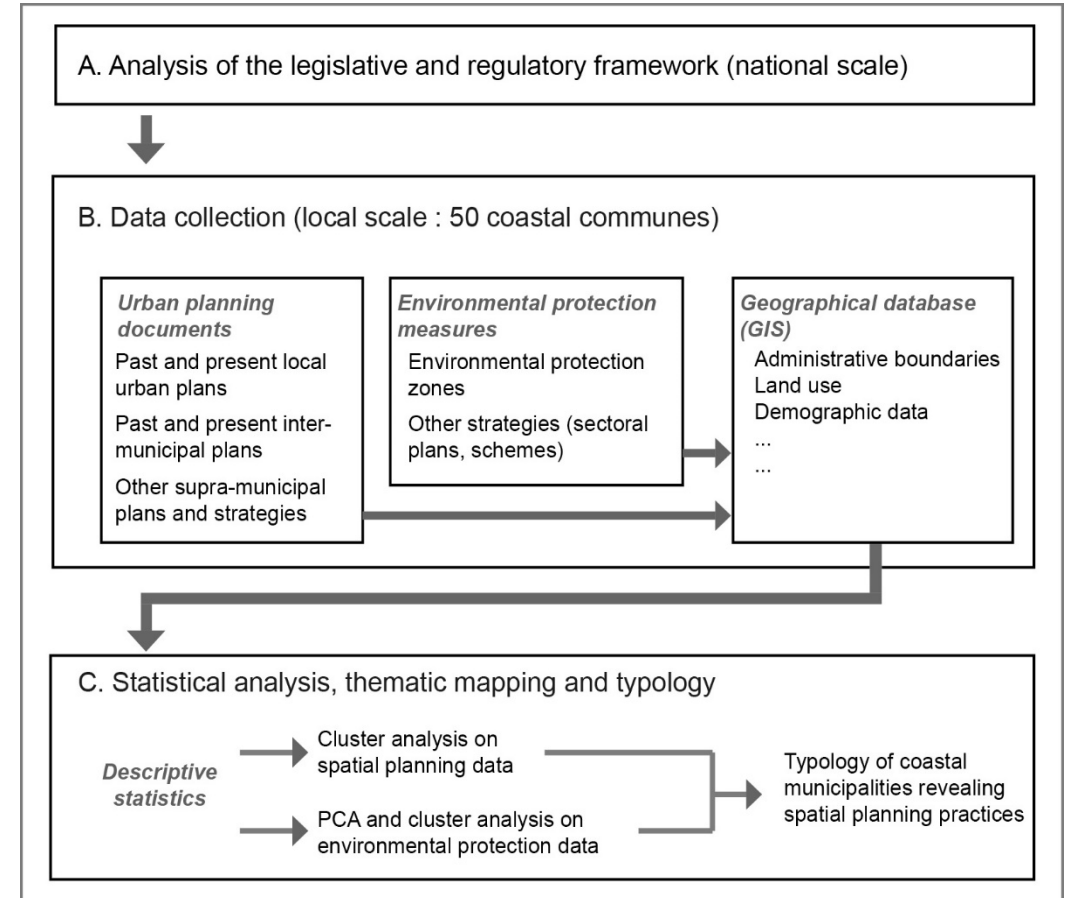
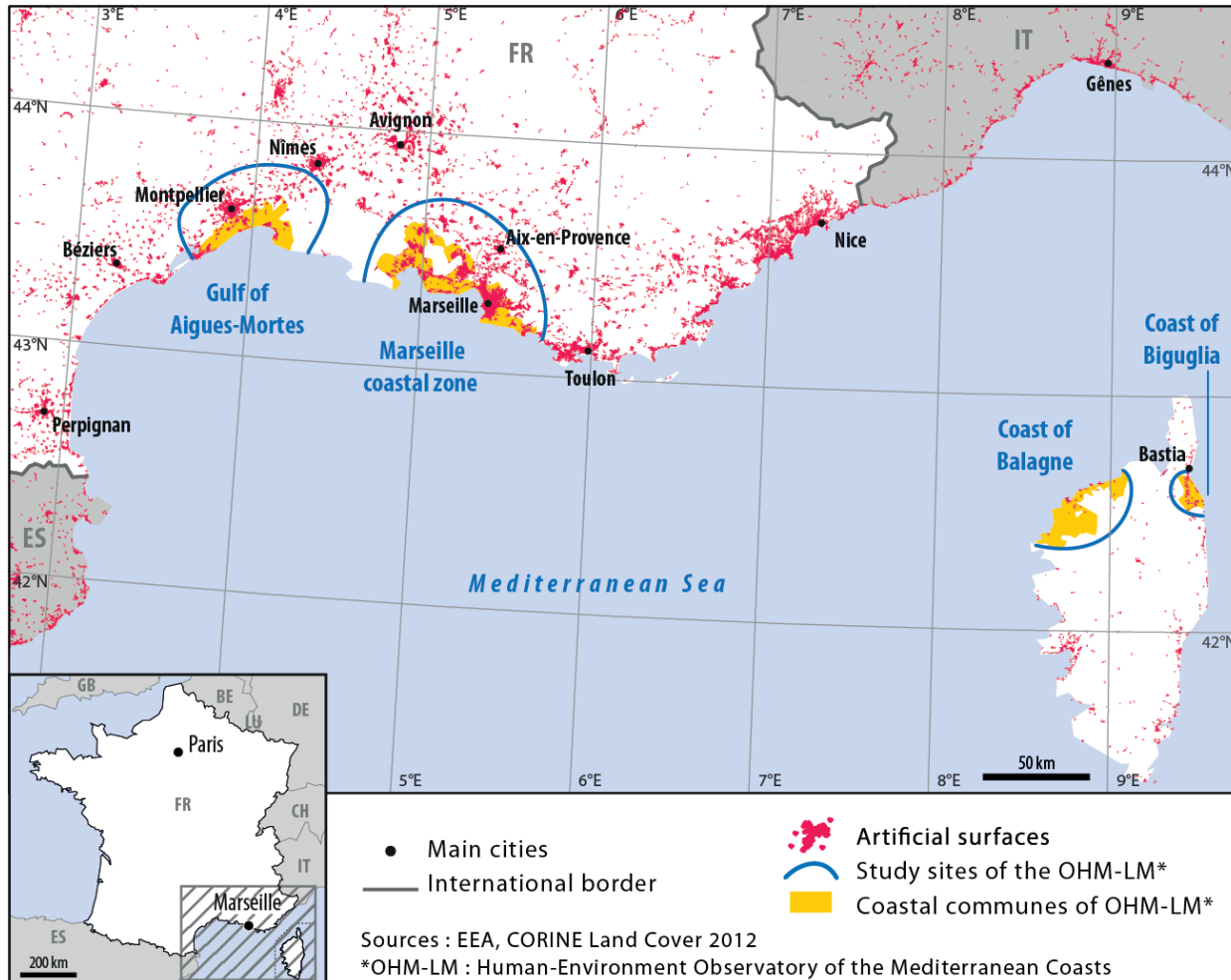
**Conceptual/functional framework of the OHM-DRIIHM and SES observation**

# OHM-LM : testing the conceptual framework

Urban sprawl

dynamics

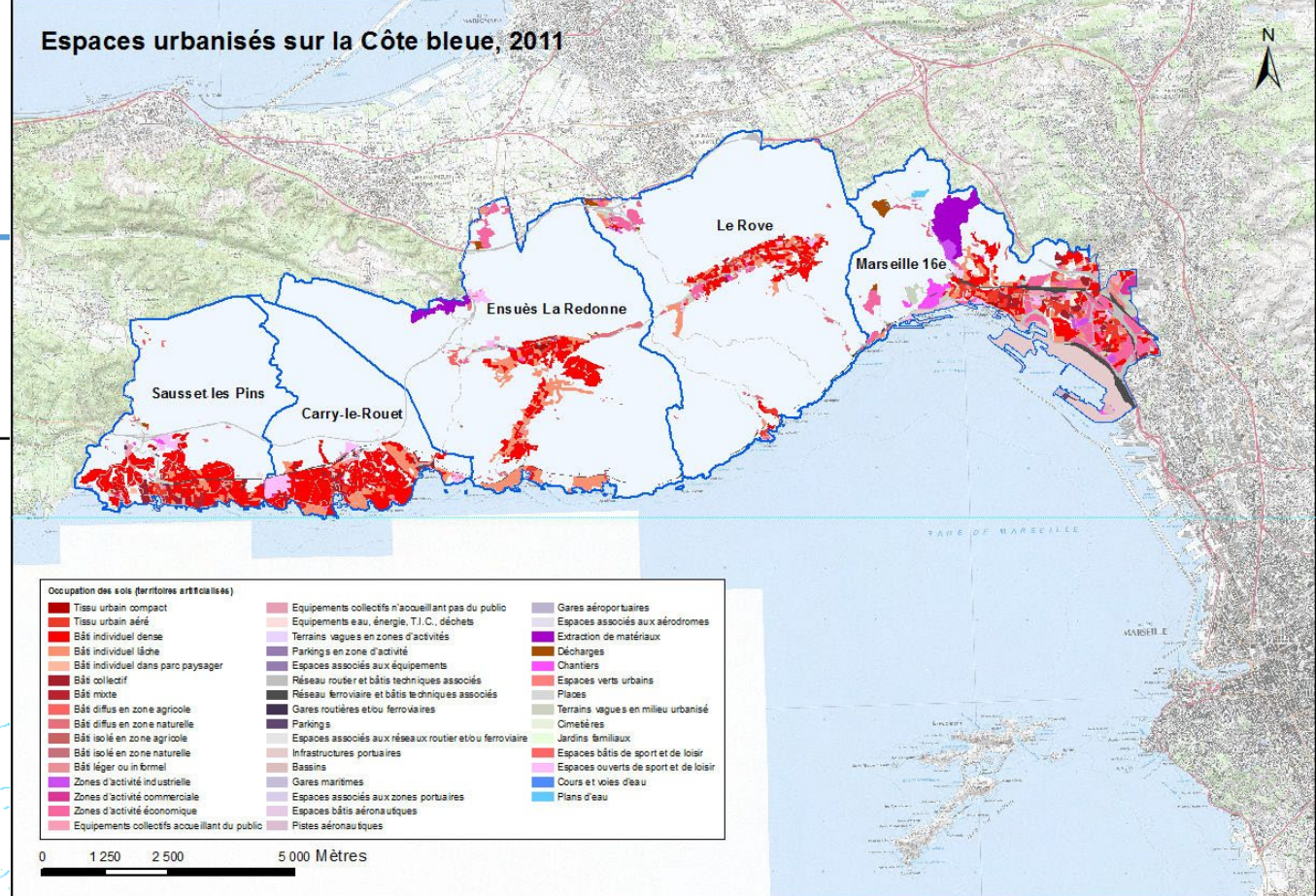
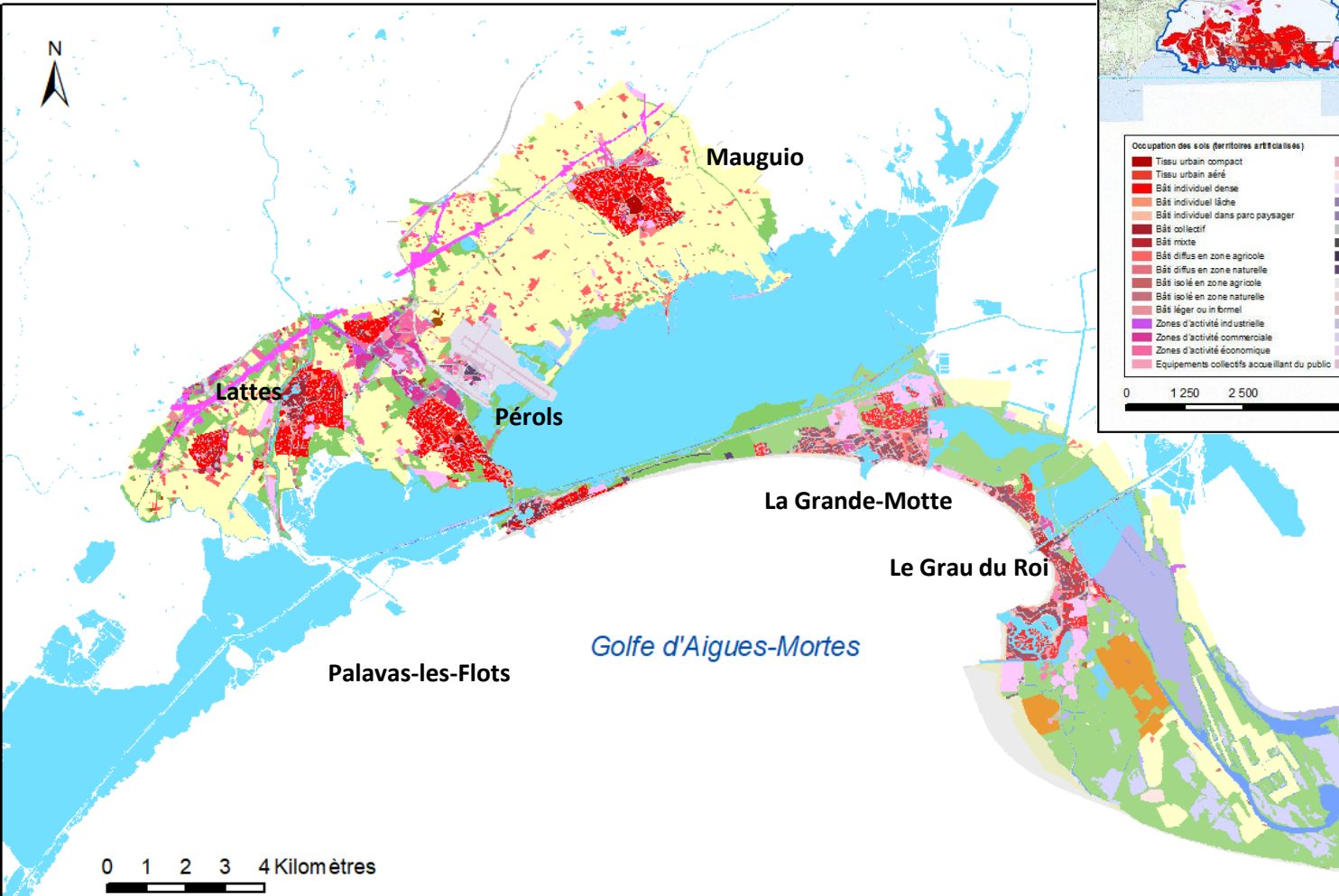
management





# OHM-LM : testing the conceptual framework

Urban sprawl dynamics and management on the coast



Urban fabric mapping at various scales, over various time frames

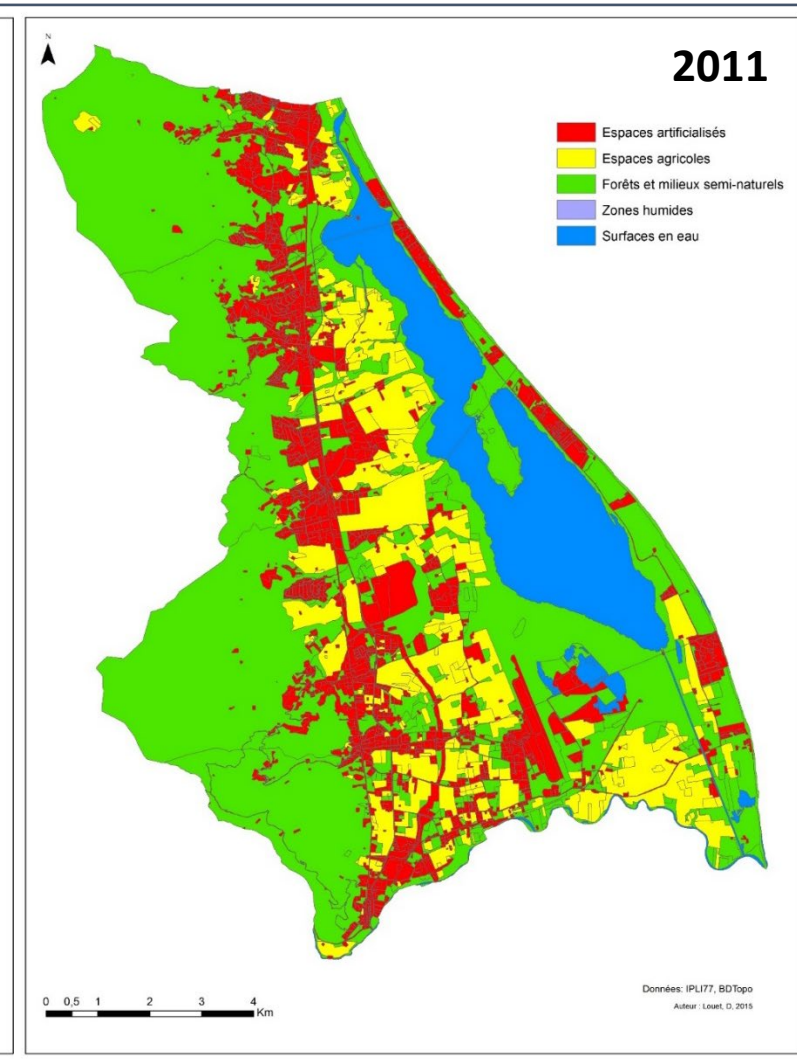
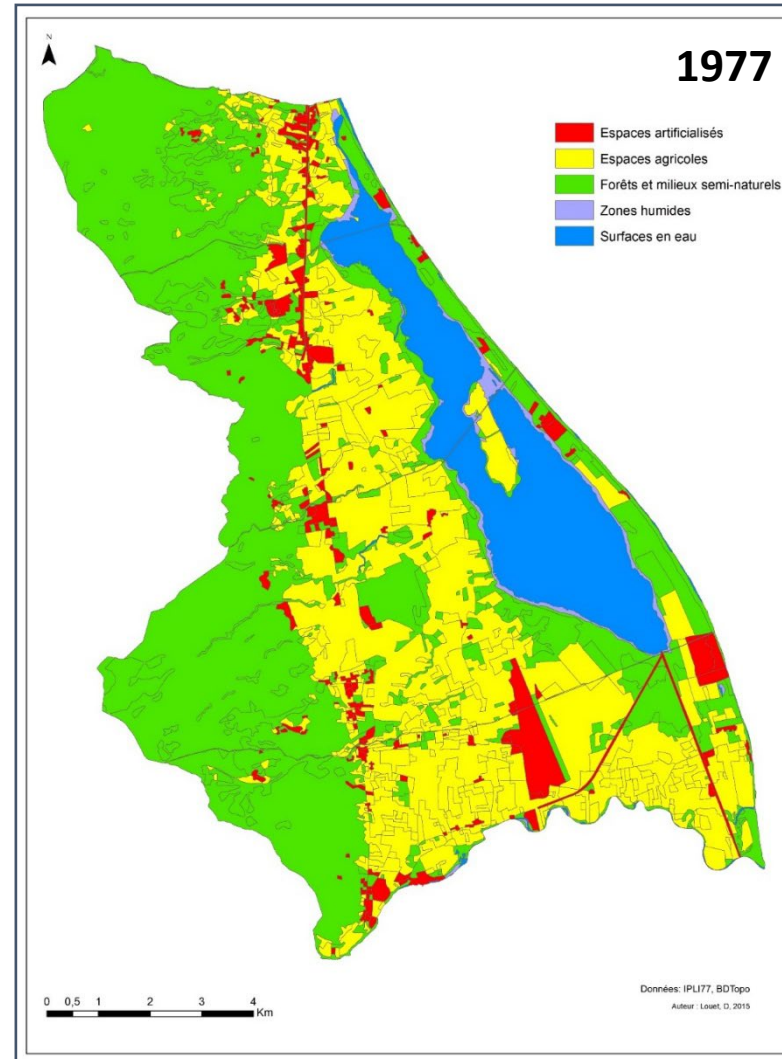
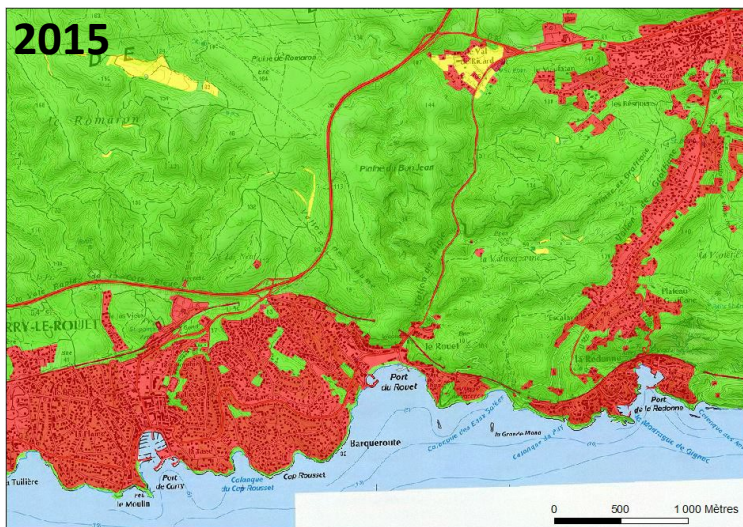
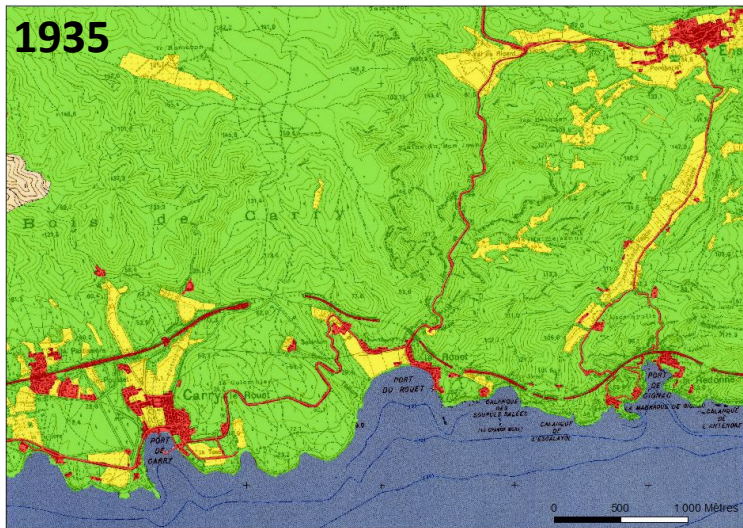
1) Detailed mapping at a large scale



# OHM-LM : testing the conceptual framework

## Urban sprawl dynamics and management on the coast

### 2) Medium scale urban fabric mapping over several decades (according to available sources)



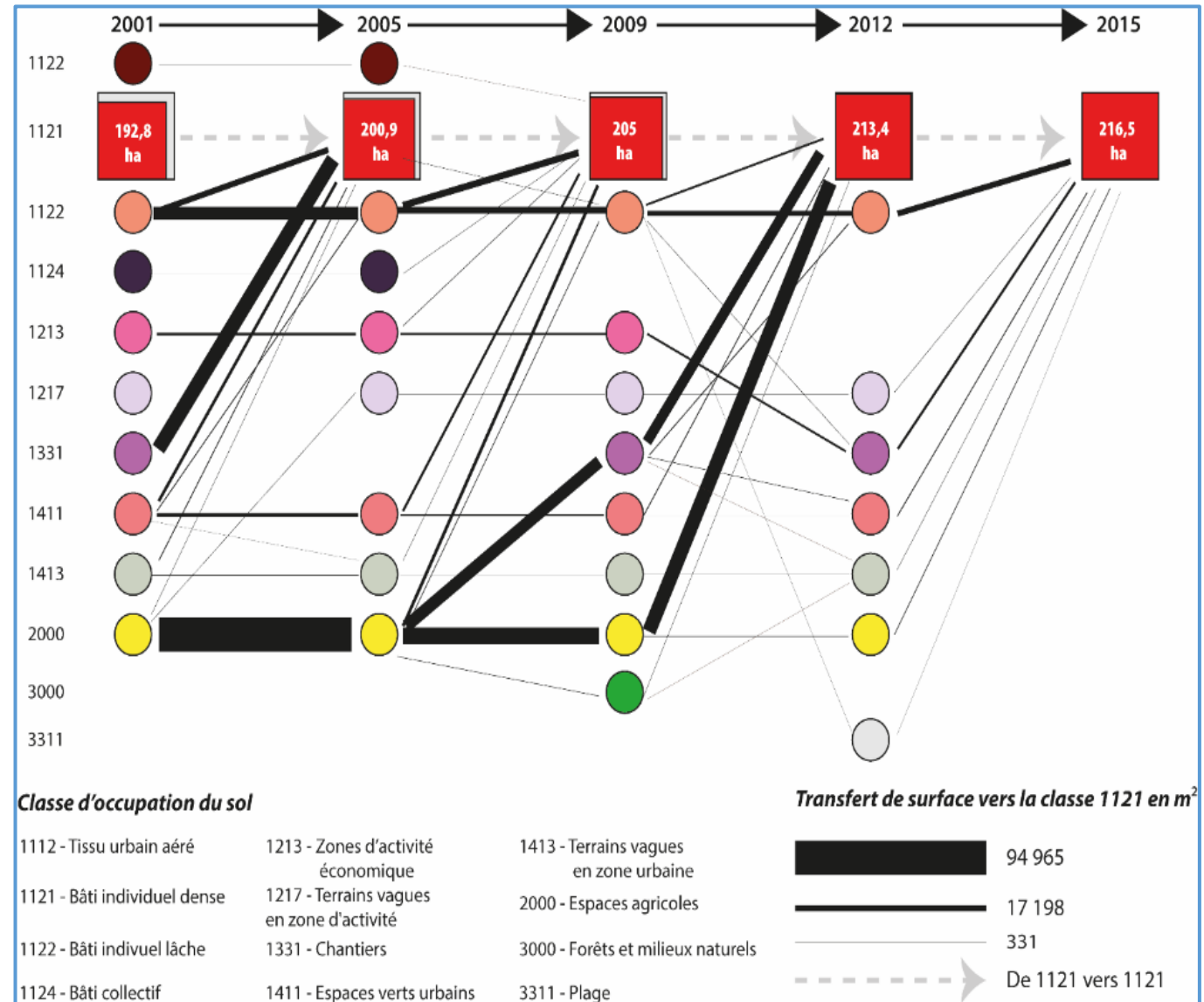


# OHM-LM : testing the conceptual framework

**Urban sprawl dynamics and management on the coast**

Land use changes analysis

Sprawl ?  
Or  
densification ?  
Or  
renewal ?



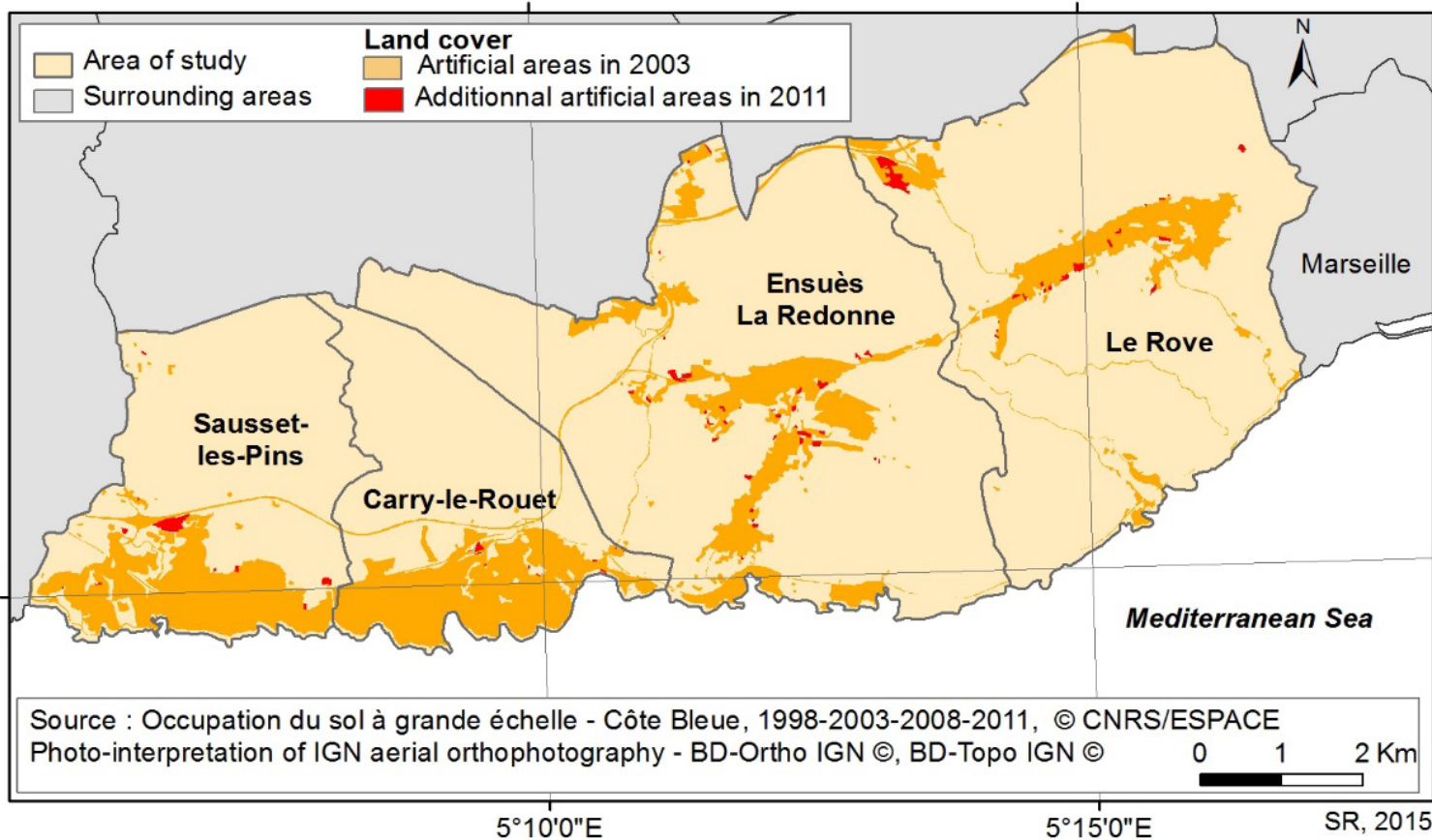
**Change towards dense individual houses (between 2001 and 2015), Mauguio**

# OHM-LM : testing the conceptual framework

## Uneven recent dynamics on the coast

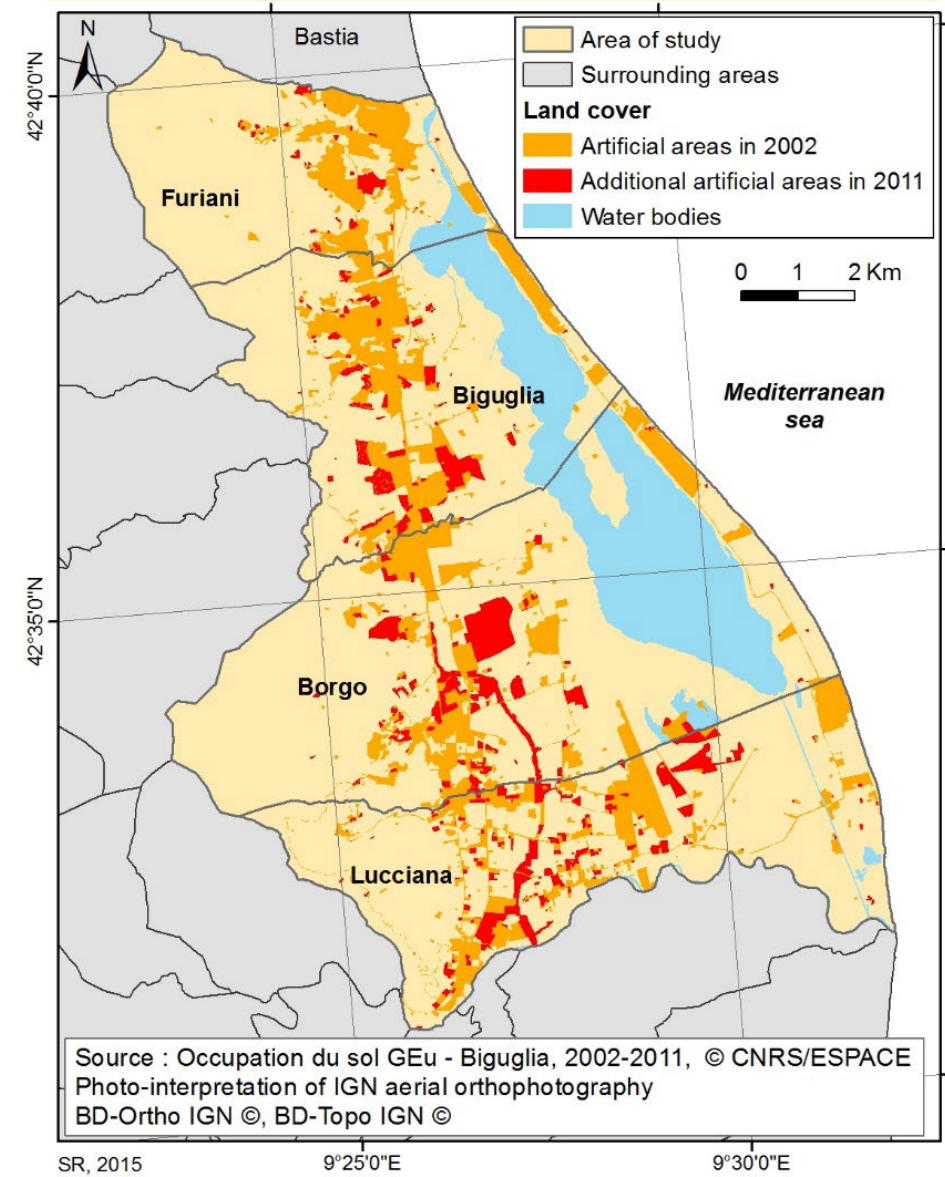
### Côte bleue

Urban sprawl under control after 2000  
 More renewal of existing urban fabric  
 No new urbanisation next to the shore



### Biguglia

Urban sprawl still strong after 2000  
 Low renewal of existing urban fabric  
 No new urbanisation next to the shore

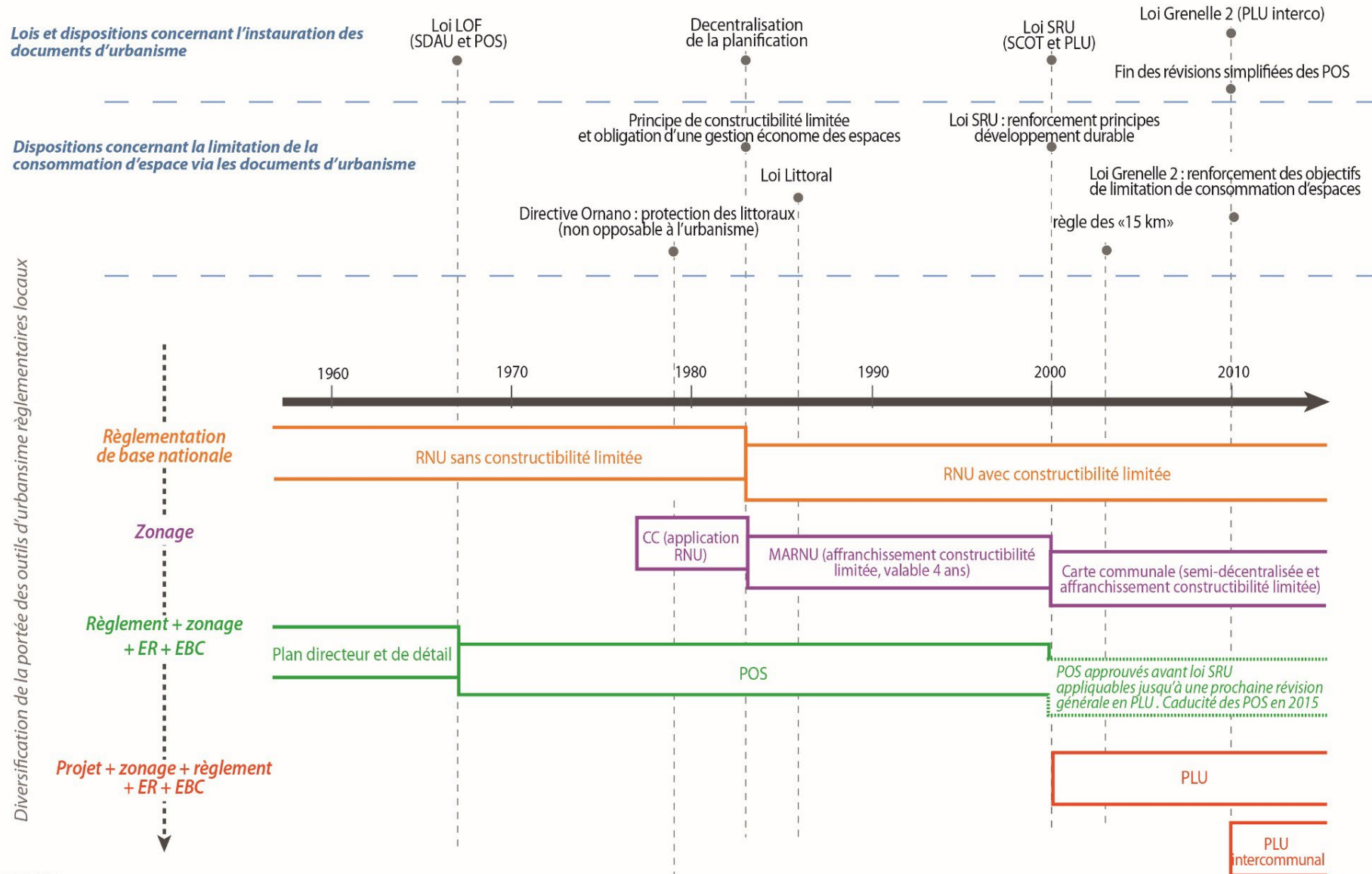




# OHM-LM : testing the conceptual framework

**Urban sprawl dynamics and management on the coast**

**Urban and spatial planning tools available through time**

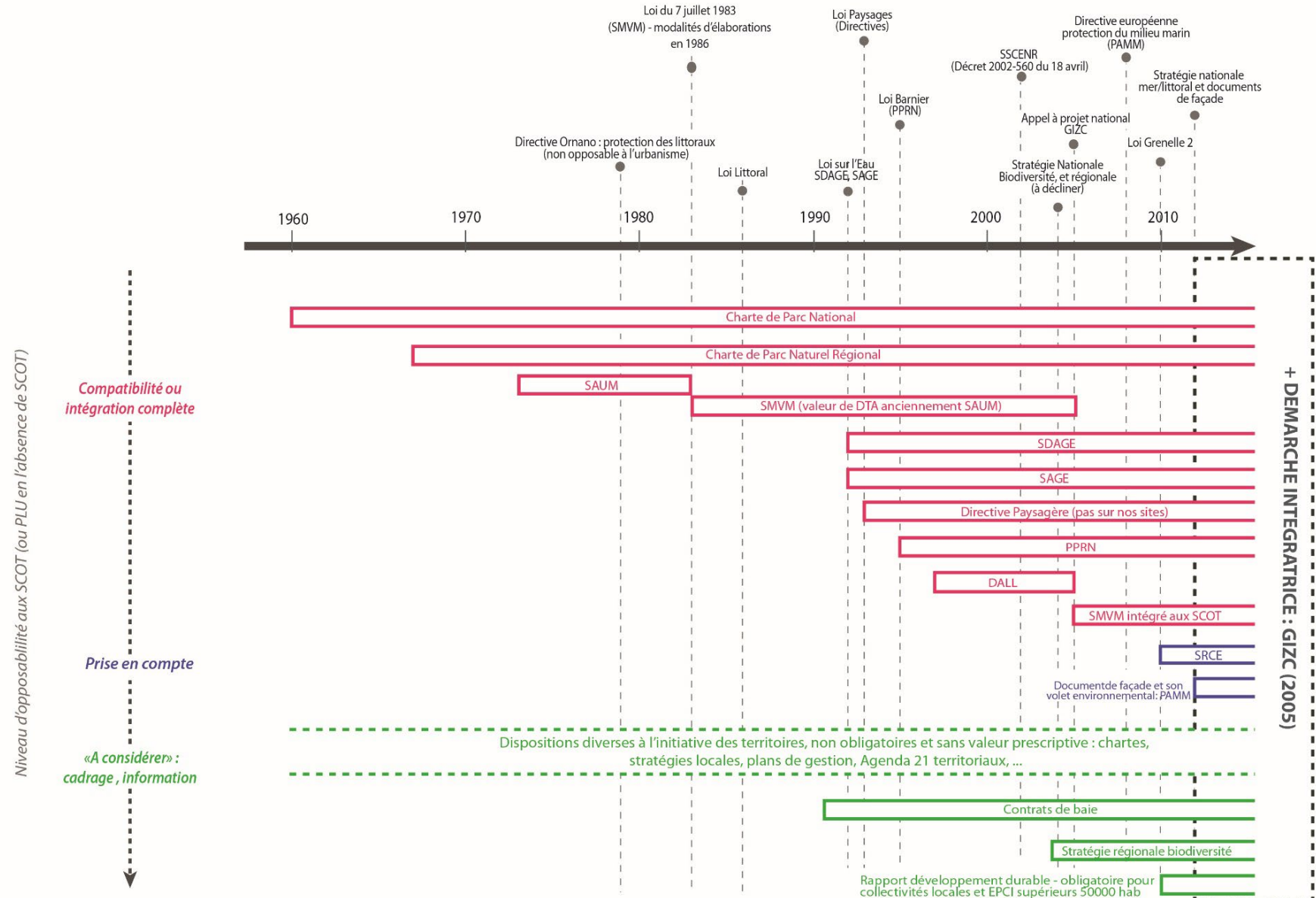


# OHM-LM : testing the conceptual framework

Instauration des documents stratégiques pour la protection de l'environnement et degré d'intégration à la planification supra-communale

**Urban sprawl dynamics and management on the coast**

**Environmental protection measures available through time and their transposition into urban planning**



# OHM Littoral méditerranéen : testing the conceptual framework

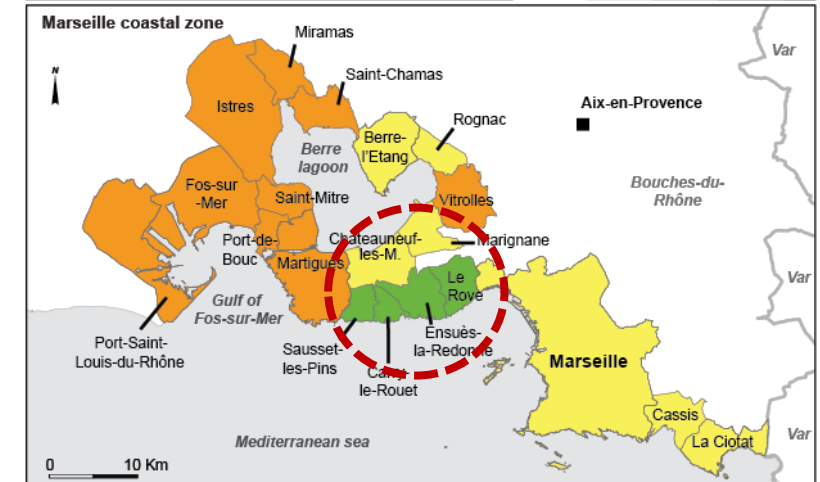
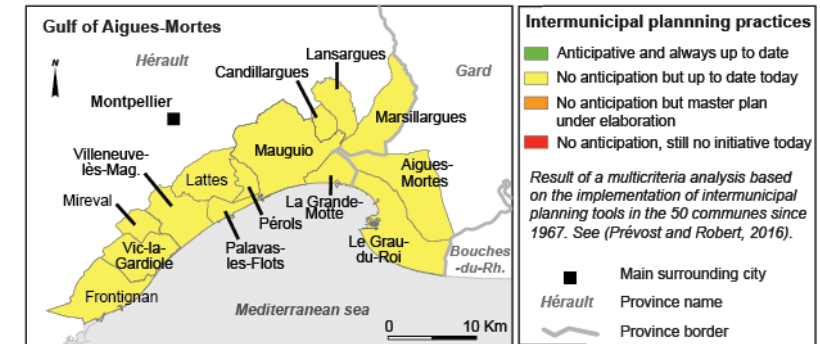
## Uneven urban planning and management on the coast

Early planning + Up to date + Complete

|                    | Commune        | 1st POS approval date | 1st PLU prescription date | 1st PLU approval date | SDAU Prescription date                 | SCOT area approval | SCOT approval date |
|--------------------|----------------|-----------------------|---------------------------|-----------------------|--|--------------------|--------------------|
| Côte Bleue         | Carry-le-R.    | 1982                  | 2006                      | 2011                  | 1979<br>(revised in 1991, and in 1994) | 2004               | 2012               |
|                    | Ensuès La R.   | 1983                  | 2001                      | 2007                  |  |                    |                    |
|                    | Le Rove        | 1982                  | 2004                      | 2009                  |  |                    |                    |
|                    | Sausset-les-P. | 1983                  | 2001                      | 2008                  |  |                    |                    |
| Lagune de Biguglia | Biguglia       | 1985*                 | 2012                      | -                     | -                                      | -                  | -                  |
|                    | Borgo          | 1987*<br>1993*        | 2012                      | -                     | -                                      | -                  | -                  |
|                    | Furiani        | 1983*<br>1999*        | 2002                      | 2011                  | -                                      | -                  | -                  |
|                    | Lucciana       | 1994                  | 2002                      | 2009                  | -                                      | -                  | -                  |

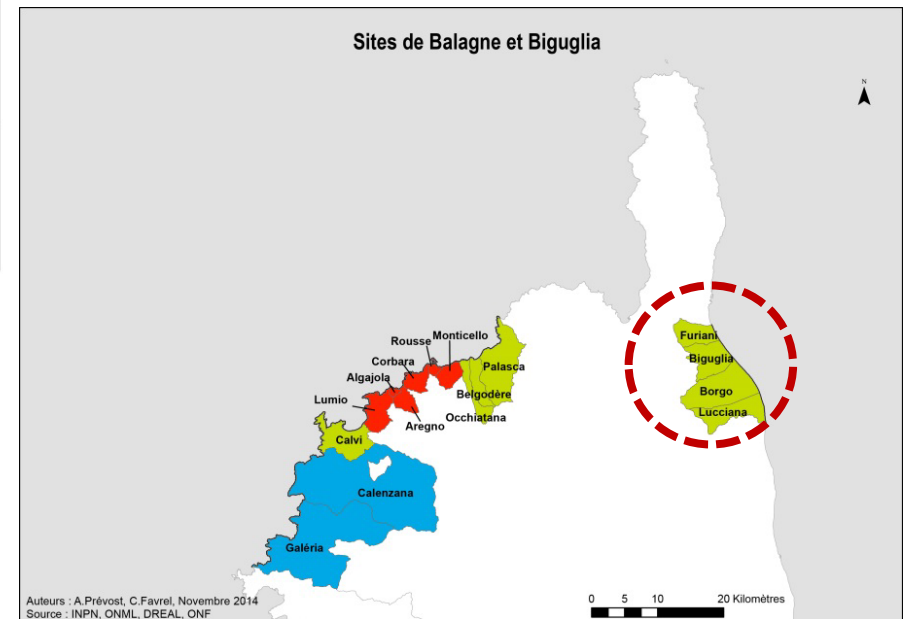
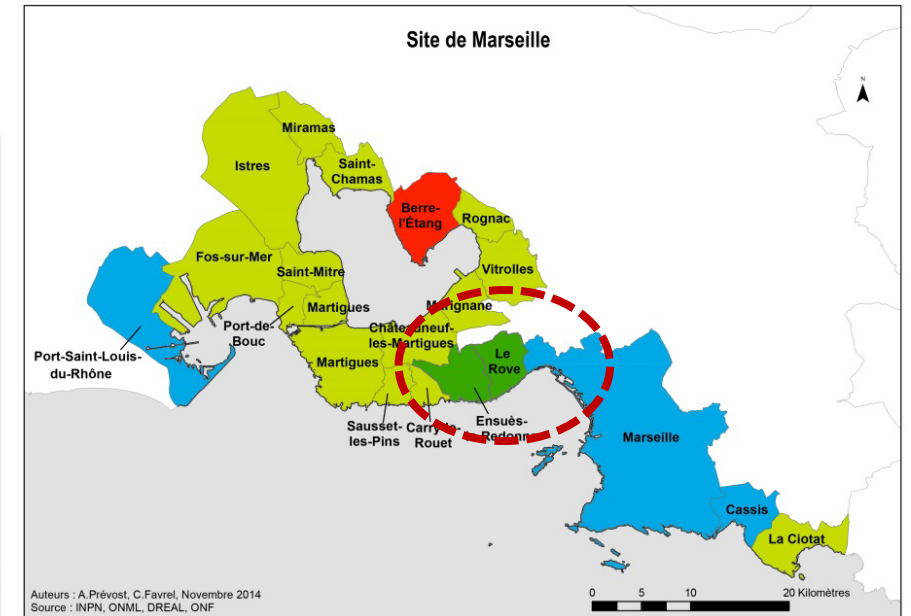
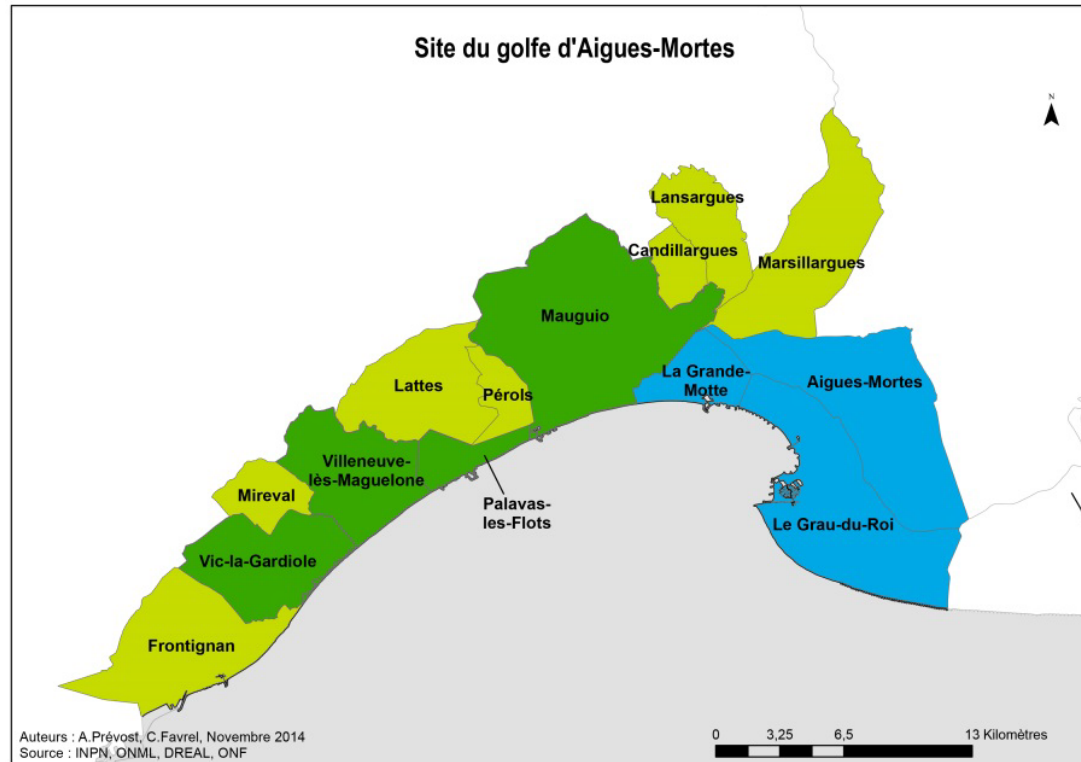
\* Incomplete. Only one part of the territory is concerned.

Late planning + Lacks + No intermunicipal planning document



# OHM Littoral méditerranéen : testing the conceptual framework

## Uneven environmental protection measures in force on the coast

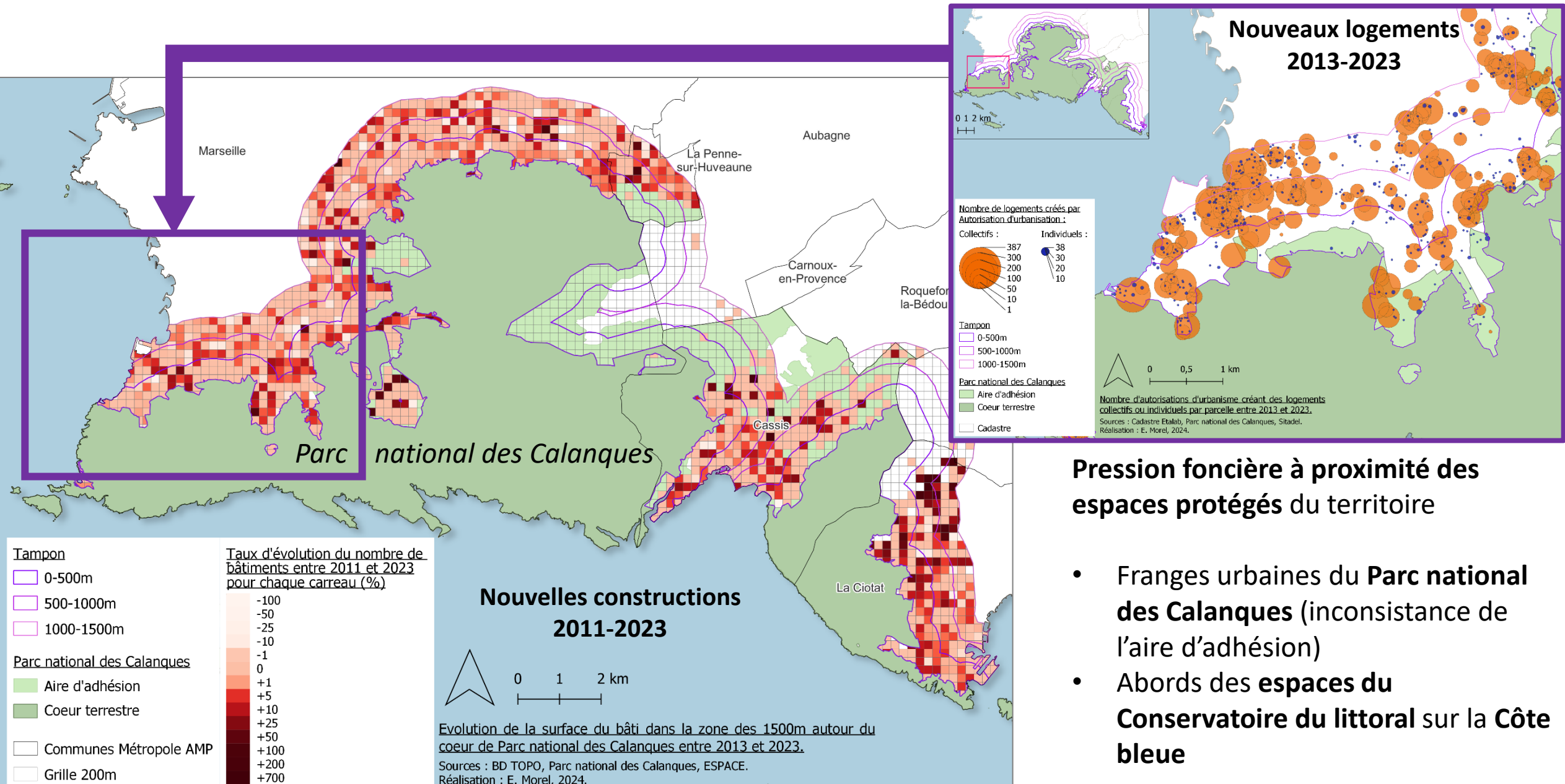


### Résultat de la classification sur les protections de l'environnement

- Nombre de protections faible
- Protections très nombreuses
- Classe intermédiaire (nombre de protections et part communale couverte)
- Nombre de protections contraignantes nombreuses et part communale couverte très élevé



# OHM Littoral méditerranéen : testing the conceptual framework



# Testing the OHM-LM conceptual framework

## Case study 2

### Attendance in coastal natural protected areas

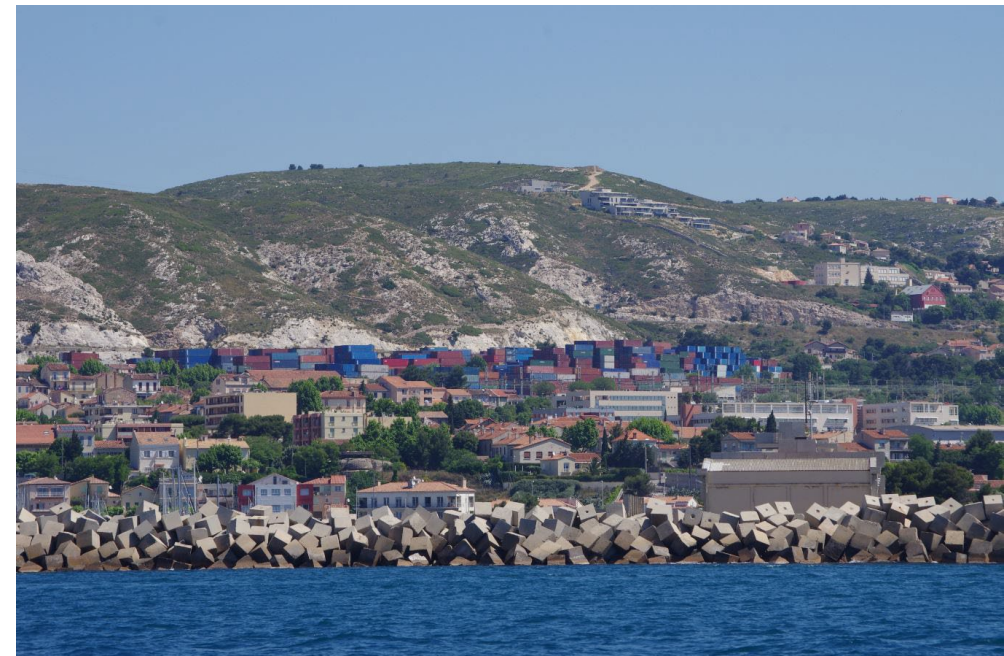
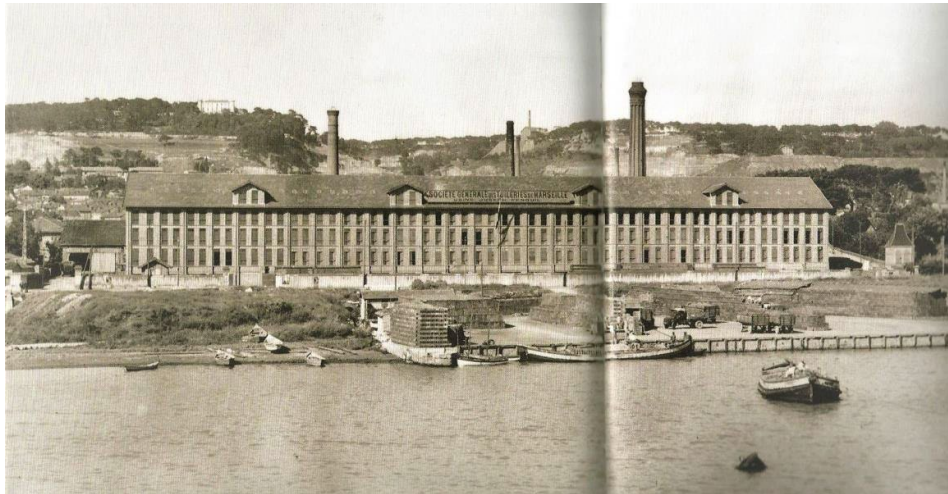
**Conceptual/functional framework of the OHM-DRIIHM and SES observation**



# ***OHM-LM : testing the conceptual framework***

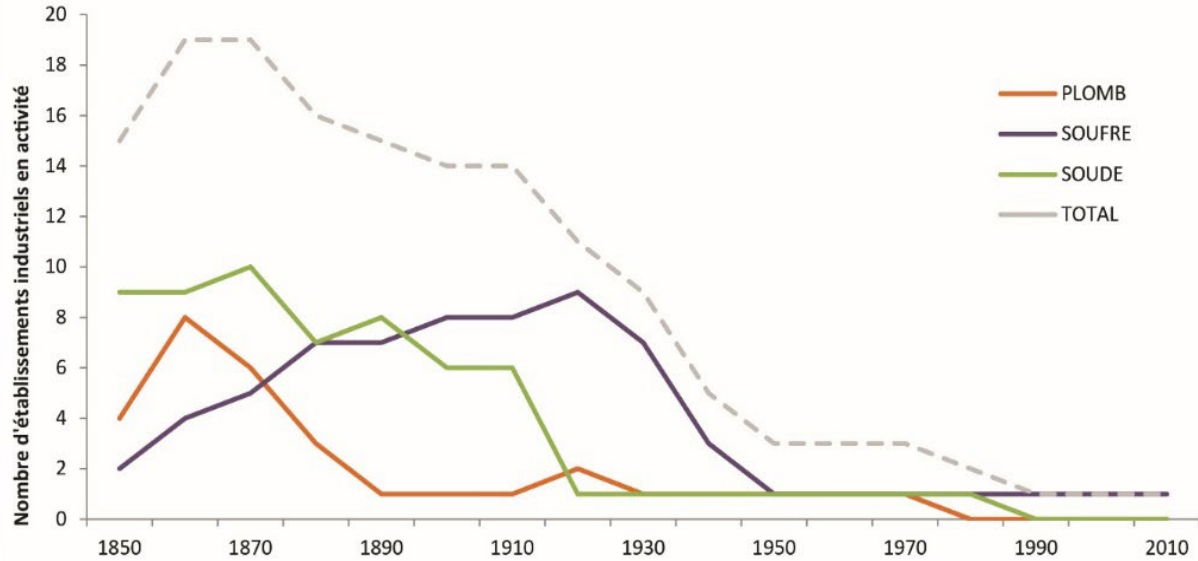
## ***Growing attendance in natural protected areas***

Marseille coastal zone : old and massive industrial and port related pressure, reactivated by tourism

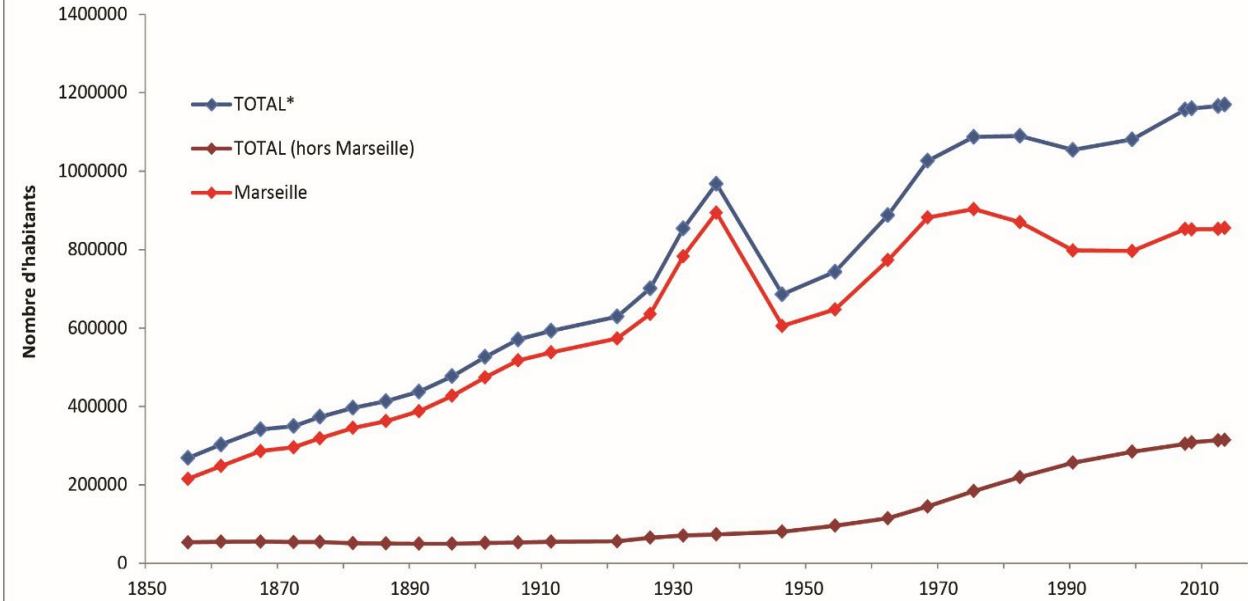


# OHM-LM : testing the conceptual framework

Etablissements par type d'industrie sur le bassin-versant BEEST  
D'après la littérature scientifique historique

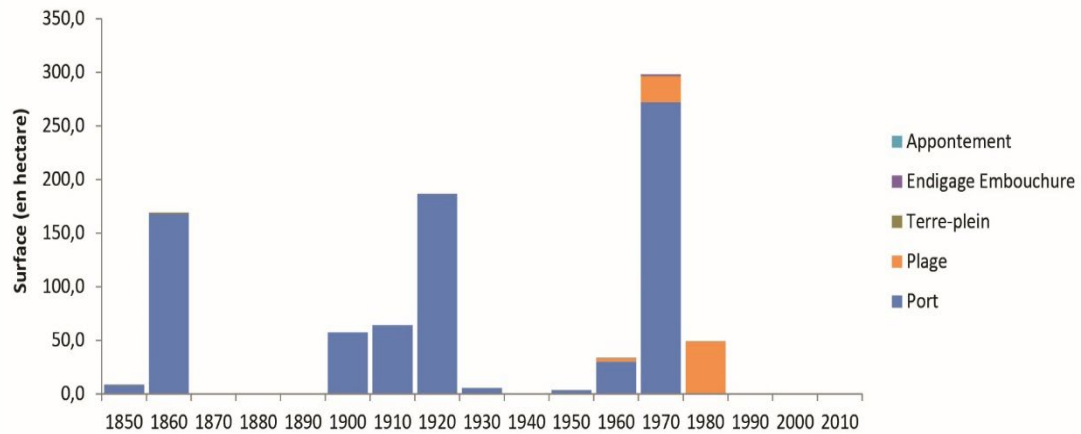


Population communale (zone BEEST) entre 1856 et 2013



**1850-1950 :  
Industries and  
port development**

Evolution des surfaces gagnées sur la mer par type d'aménagements entre 1850 et 2010



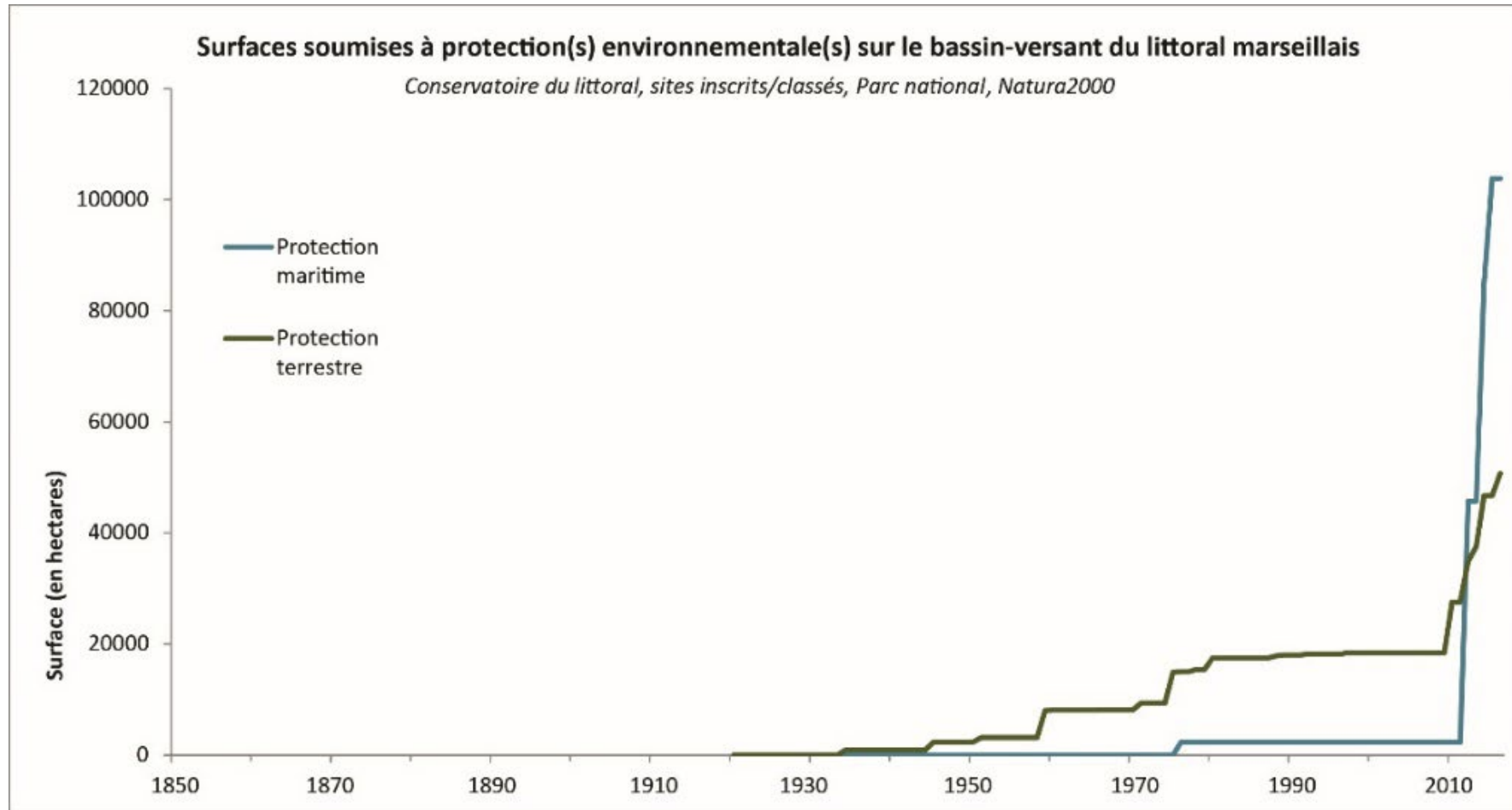
**From the 1970s on : Marseille coastal zone is changing :**

- **Heavy industries decline**
- **No more port extensions**
- **Demographic slow down**



# OHM-LM : testing the conceptual framework

1960-70s : increased surface of protected natural areas

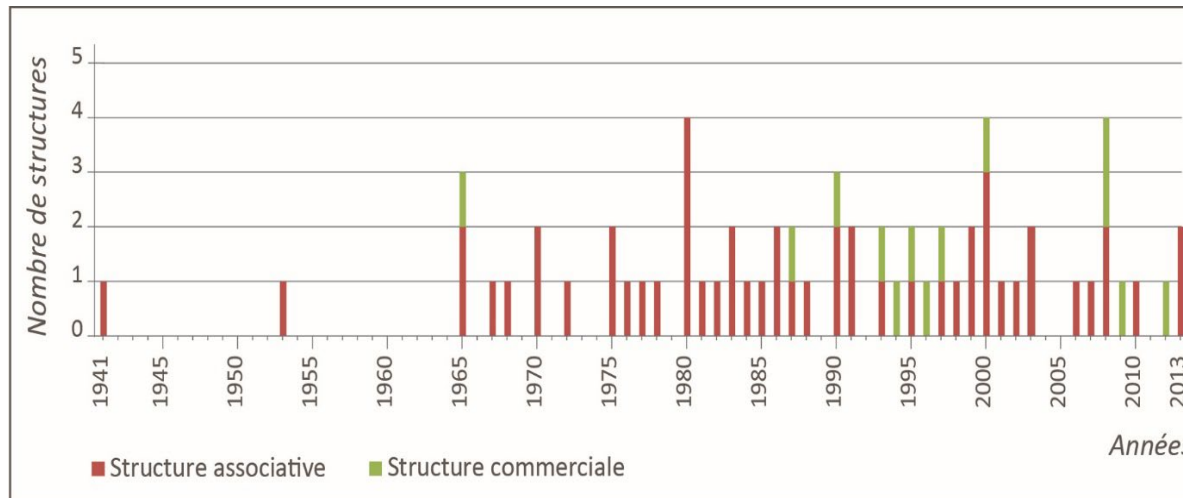


OHM-LM creation

# OHM-LM : testing the conceptual framework

## 1990-today: the tourism and residential economy turn

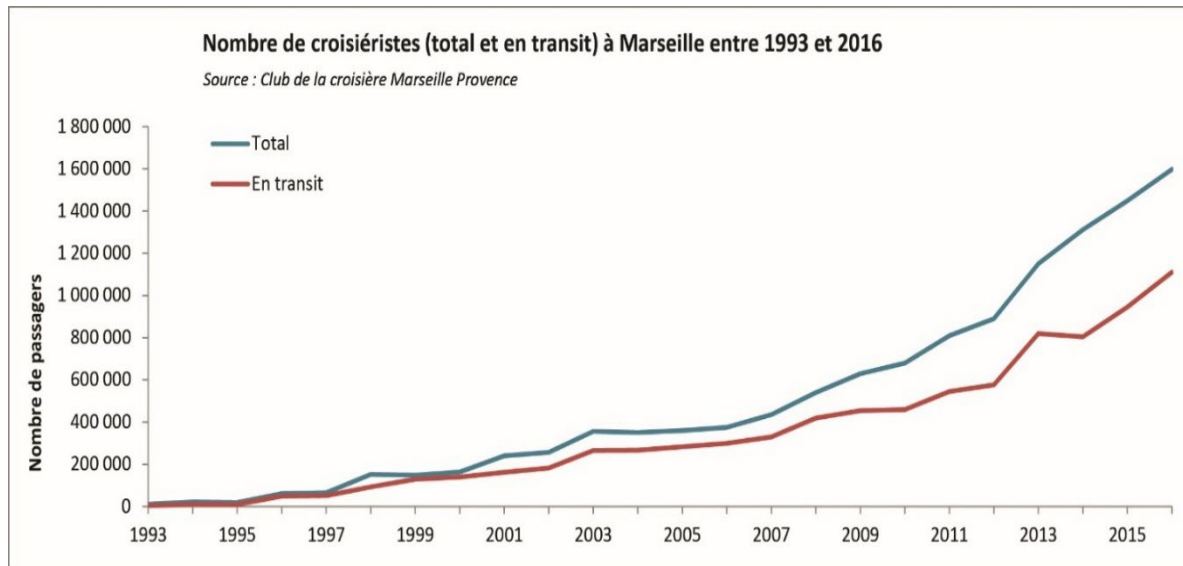
Scuba diving structures : associative/commercial



Growing attendance in natural protected areas



Cruise passengers





# OHM-LM : testing the conceptual framework

## Scuba diving

Increasing activity → stronger management required

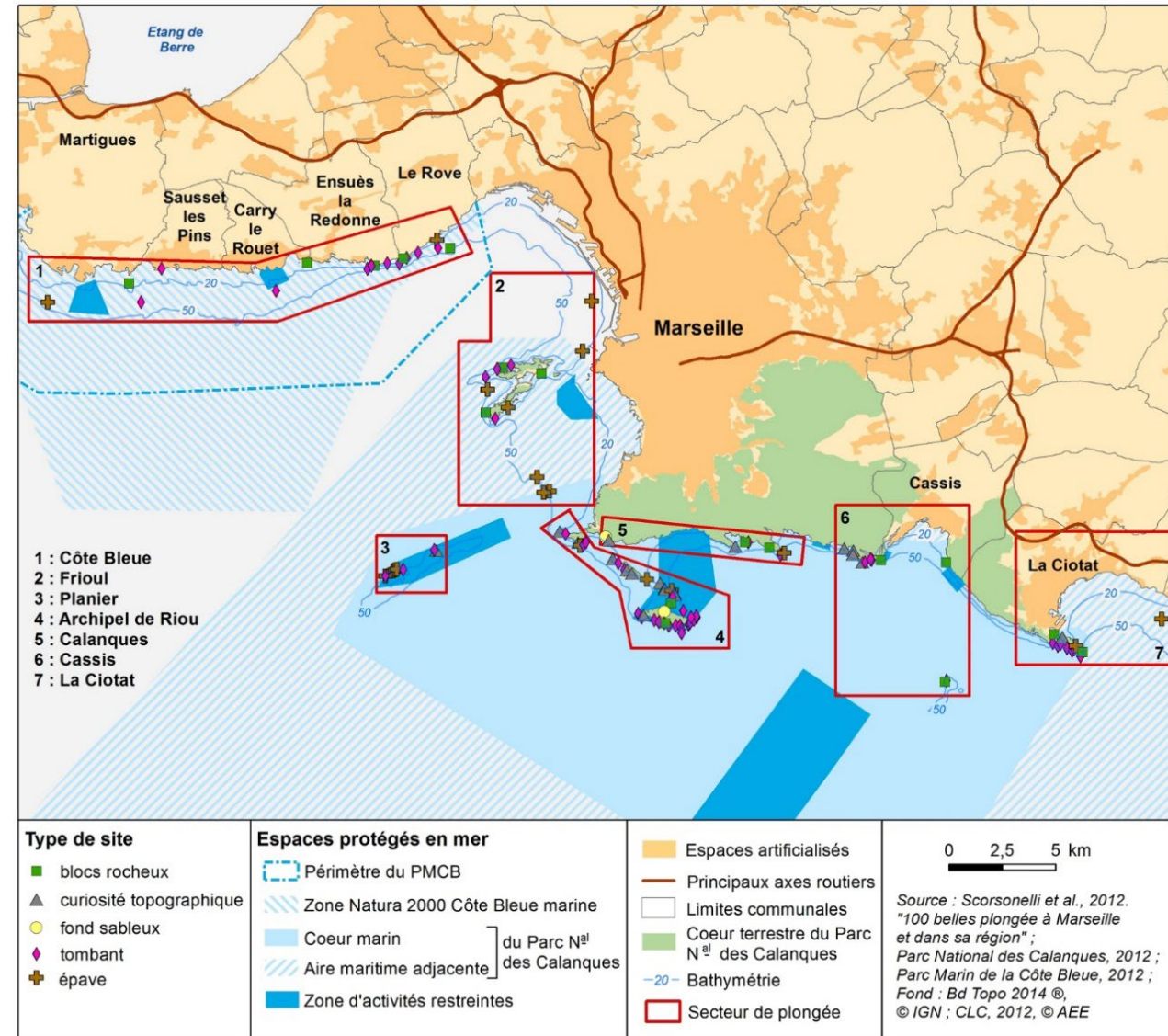
MOUILLAGES SUR SITES DE PLONGÉE



La Ville de Marseille met à votre service des dispositifs d'amarrage évitent la destruction des fonds due au mouillage direct des ancres. Professionnels de la mer, associations et plaisanciers, quel que soit le plongée que vous choisissez, merci d'adopter un comportement respectueux du milieu marin pour la préservation des écosystèmes.



CHARTRE DE LA PLONGÉE  
EN SCAPHANDRE  
PARC NATIONAL DES CALANQUES

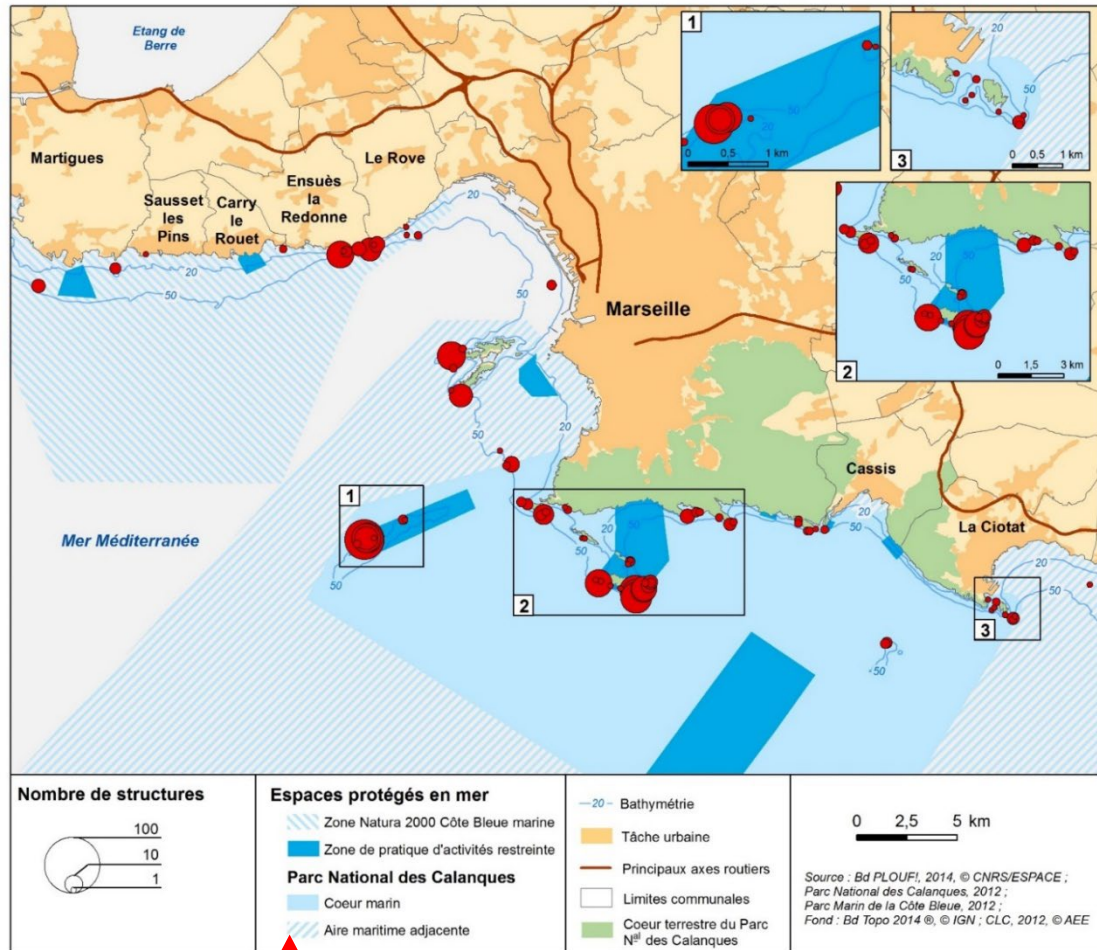
(Robert et Plouvier, 2017)



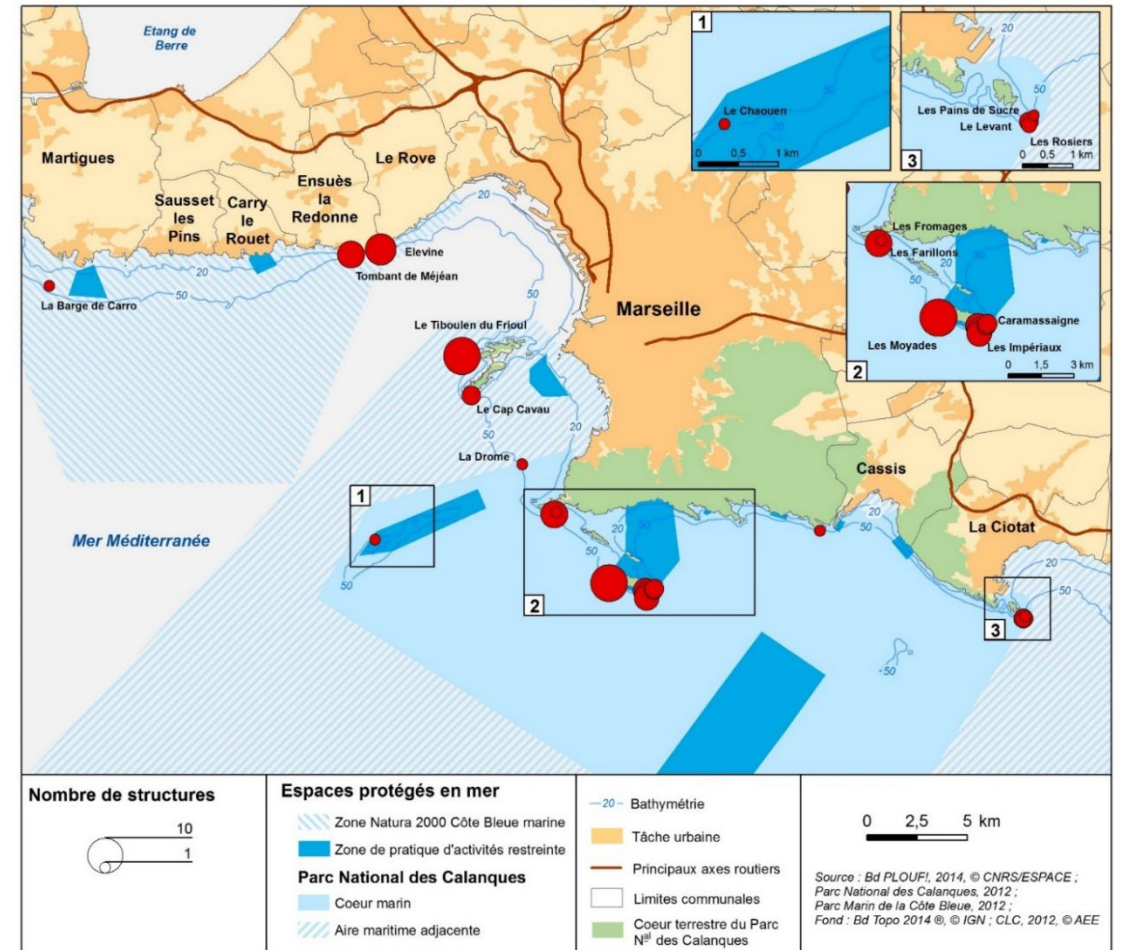
# OHM-LM : testing the conceptual framework

Scuba diving assessment (survey in 2014) : 245,000 dives a year

Spots most dived



Diving spots perceived as the most attended



Request for update of the study by the Calanques national park in 2024



# OHM-LM : testing the conceptual framework

## Visitors' assessment in the Calanques national Park (2021-22)

**La Provence**  ★ Favoris · 2 h · 

L'image est saisissante. Dimanche sur le parking de Luminy ou aux goudes, il y avait des voitures à perte de vue



LAPROVENCE.COM  
**Coronavirus - Sur le littoral marseillais : une surfréquentation qui pose problème**

   1192      807 commentaires    201 partages

 J'aime     Commenter     Partager

February 2021



### Second tour de l'élection présidentielle Face au RN, la semaine de tous les dangers

À cinq jours du second tour de l'élection présidentielle, dimanche 24 avril, la candidate de l'extrême droite est donnée derrière Macron selon les sondages mais l'écart est dans la marge d'erreur. Les électeurs de gauche seront décisifs pour lui barrer la route de l'Élysée. P.4 et 5

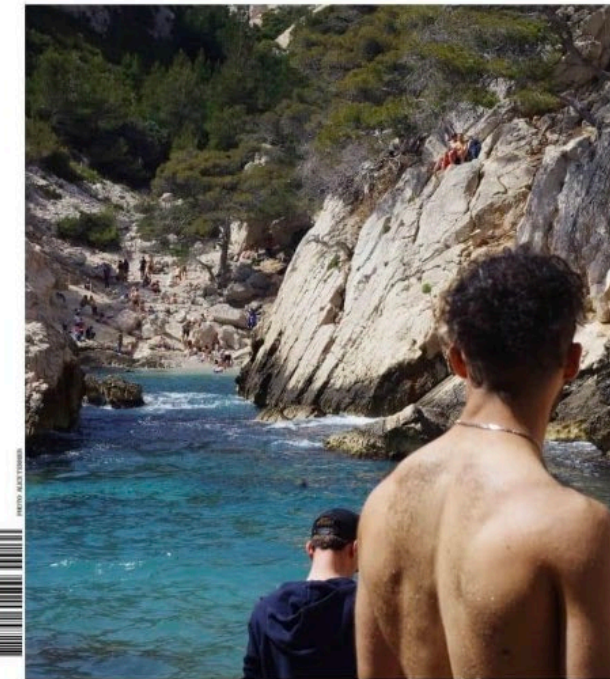
# La Marseillaise

« Celui qui combat peut perdre, celui qui ne combat pas a déjà perdu » Bertolt Brecht

Le journal le plus chanté de France

## 10 ANS DU PARC DES CALANQUES Finie la surprise partie à Sugiton

Le Parc national des Calanques fait le bilan après une décennie de vie. Il faudra un permis pour accéder aux criques. P. 2 et 3



### MARSEILLE



### Les techniciens de la série Plus belle la vie se mobilisent

Inquiets du potentiel arrêt du feuilleton, ces professionnels ont écrit aux élus et au président de la République. P.7

### FOOTBALL

### L'OM frustré par un PSG très avantage

Le duel a tourné en faveur des Parisiens dimanche soir qui ont bénéficié des largesses de l'arbitrage sur un penalty litigieux et un but refusé. P. 18



### MARTIGUES

### Par milliers pour fêter le cerf-volant

Retour sur un week-end prolongé où les amateurs et le public ont profité de la beauté de cerfs-volants venus du monde entier. P.10



### UKRAINE

### La Russie intensifie sa guerre et veut écraser le Donbass

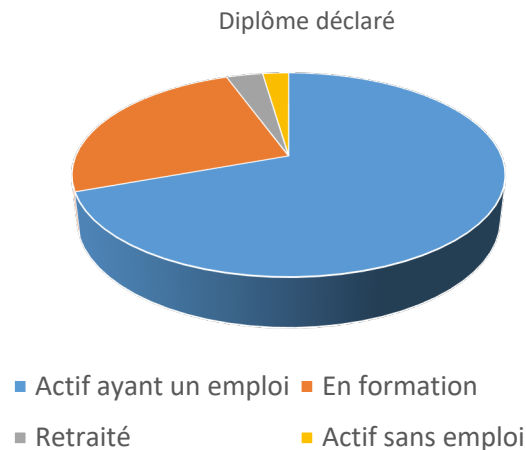
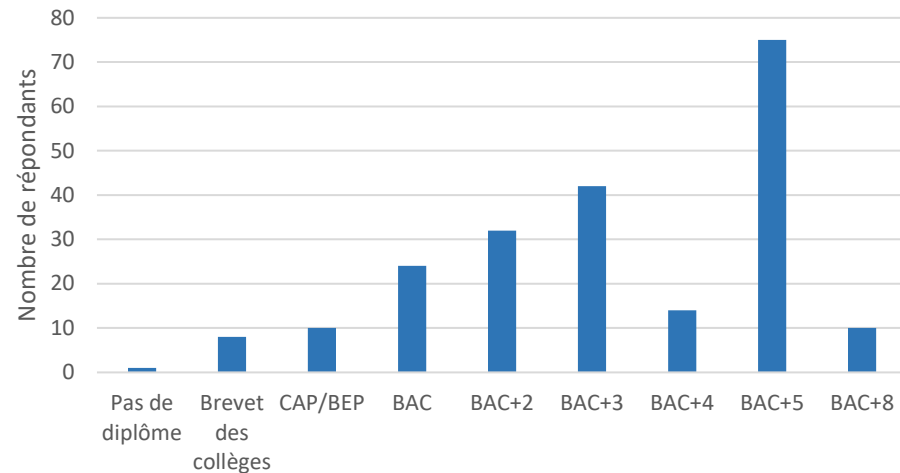
Vladimir Poutine s'enfoncé dans la folie de la guerre. L'offensive contre la région orientale du Donbass s'intensifie depuis lundi soir. P. 13



# OHM-LM : testing the conceptual framework

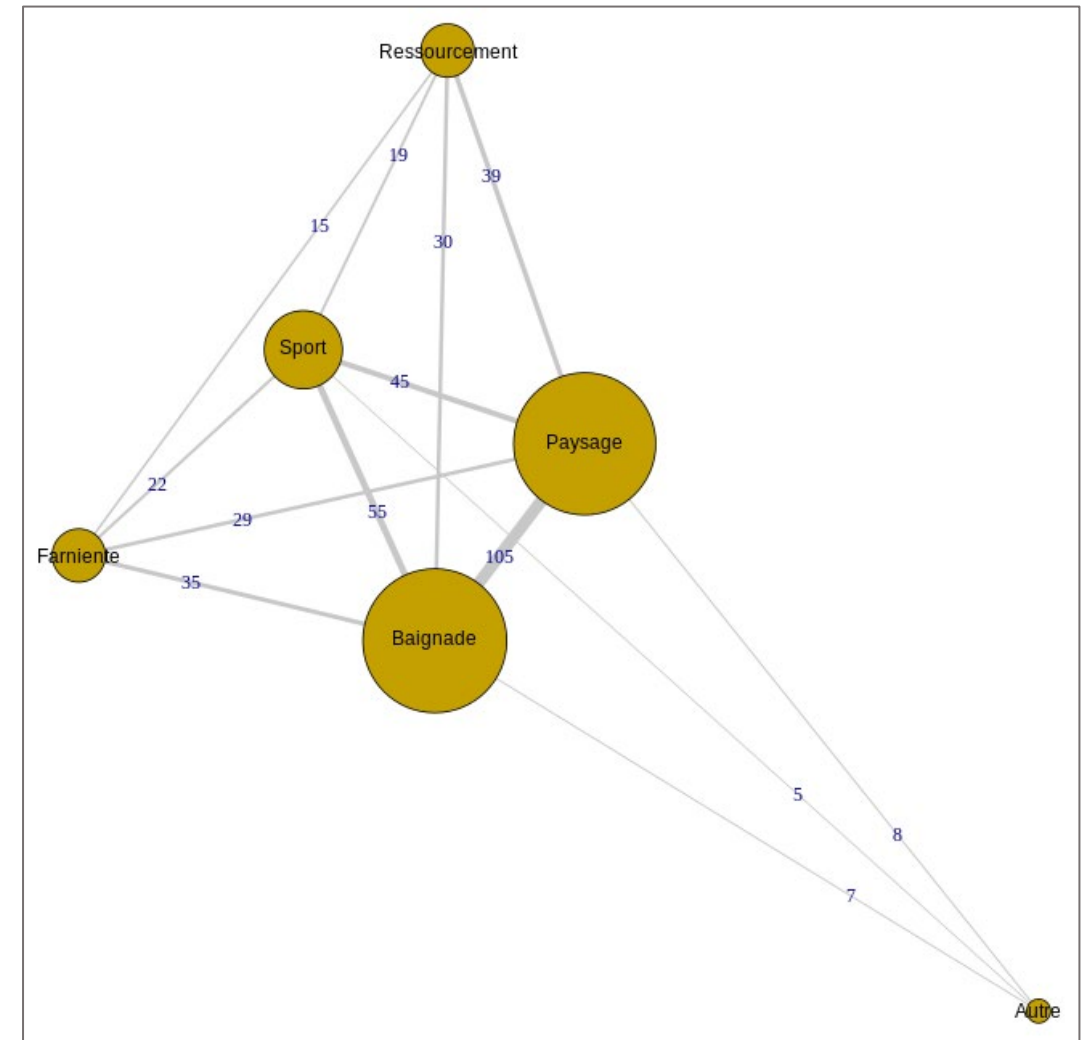
## Visitors in the Calanques national Park

A rather high level of diploma, mainly young workers or students...



Survey summer 2021

... who come to enjoy sceneries and bathing



(Robert, Lavaud, Trémélo, 2022)



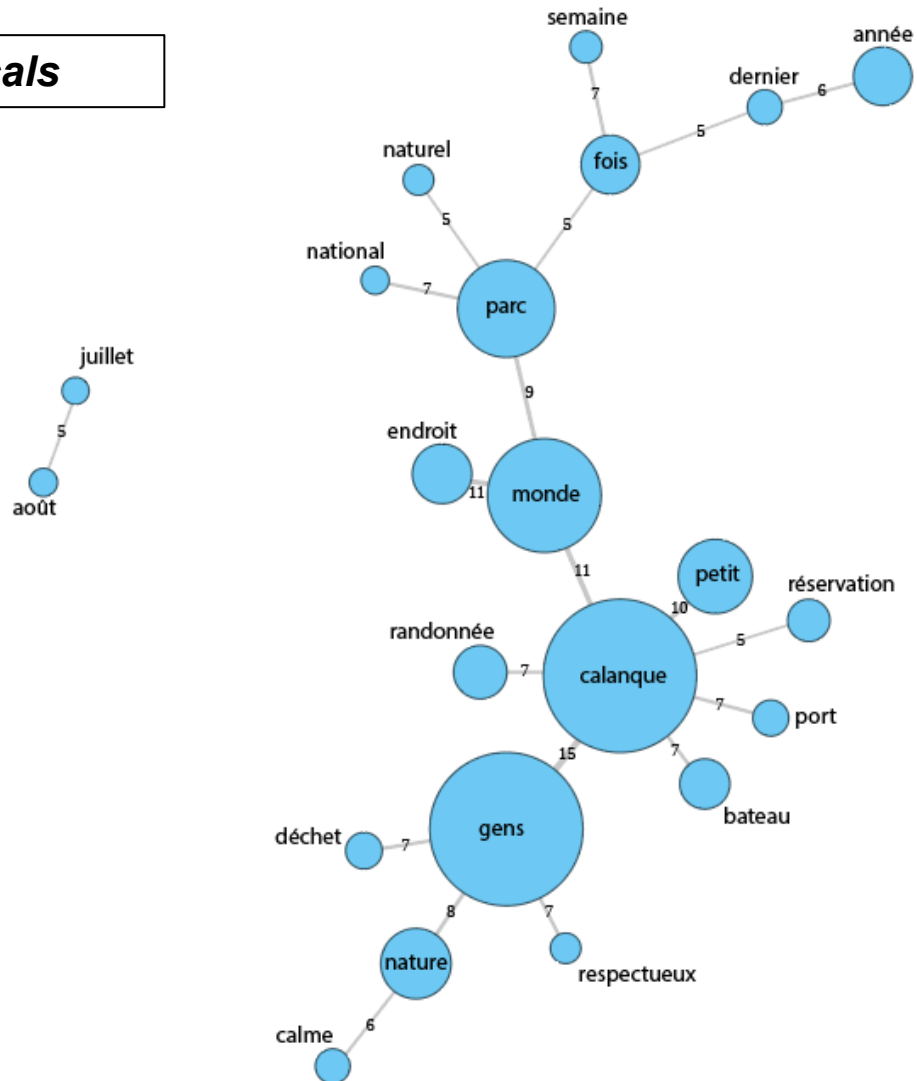




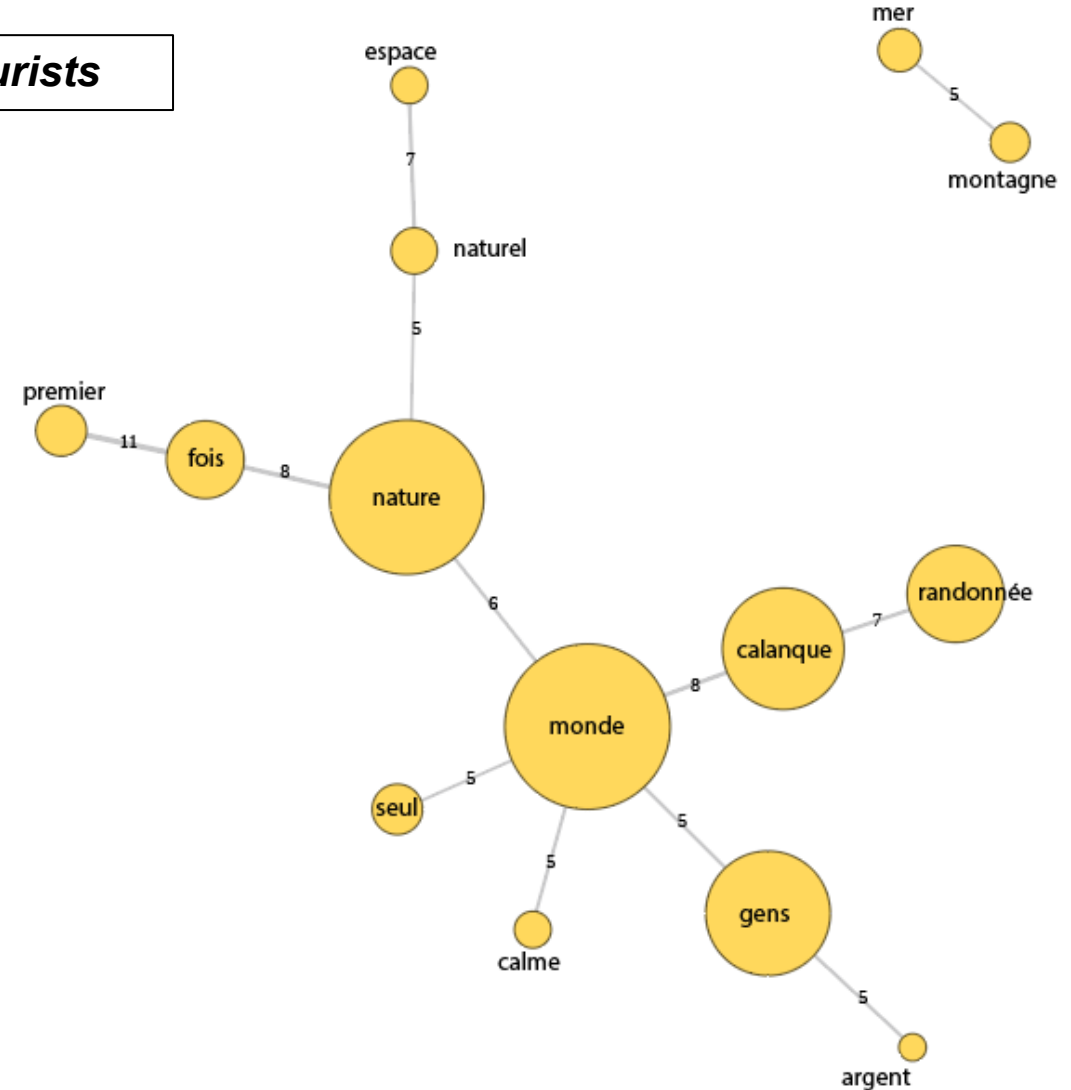
# OHM-LM : testing the conceptual framework

## Attendance in the Calanques NP

### Locals



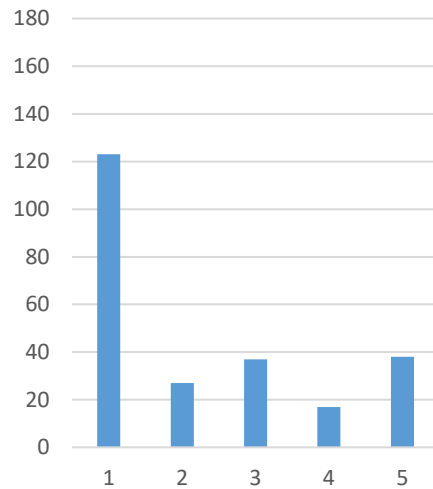
### Tourists



# OHM-LM : testing the conceptual framework

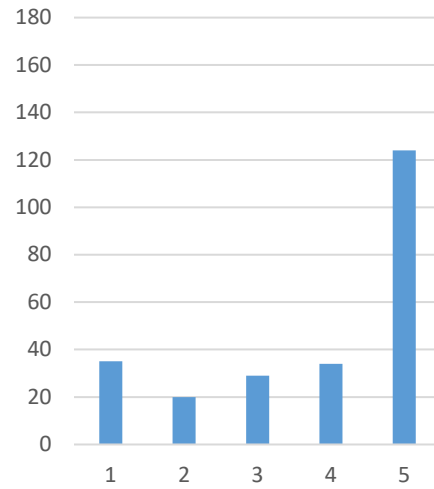
## General opinion concerning the booking of the access to the Calanque of Sugiton

1. Do not agree at all → 5. Agree totally



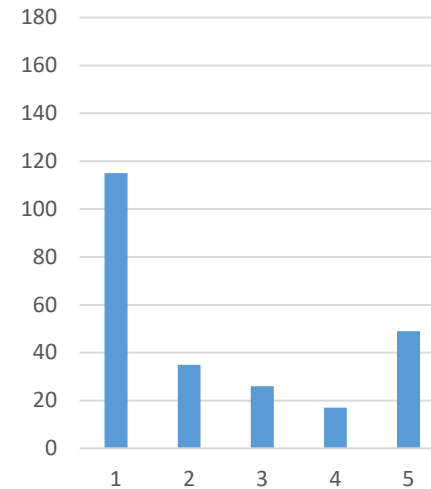
**mesure trop stricte**

*Strong consensus*



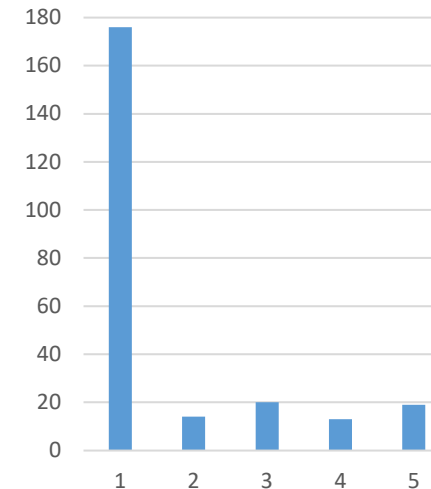
**permet de lutter  
contre l'érosion des  
sols**

*Strong consensus*



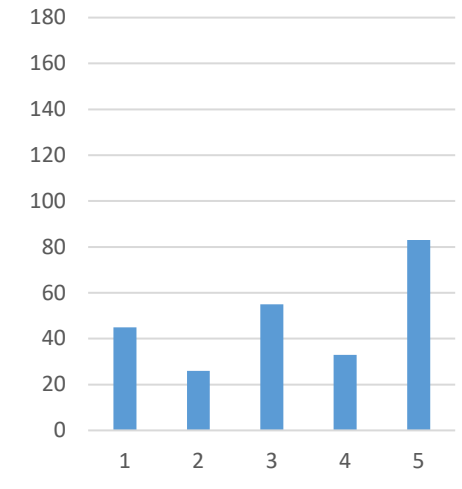
**ne devrait pas  
s'appliquer aux  
habitants de Mrs et  
alentours**

*2 opposite positions*



**devrait être payante**

*Very strong  
consensus*



**devrait pouvoir se  
faire autrement que  
sur internet**

*Balanced, indecised*

## ***Concluding remarks***

---

### **OHM-LM conceptual framework proves relevant to study the French Mediterranean coastal zone and its challenges**

1. social and ecological processes are often related to management measures
2. management measures are often based on integrated management principles
3. the disruptive event makes sense and allows for the study of the dynamics of change over a recent period, for which we can rely on existing data

***Merci de votre attention***

