Fishing on the western coast of Cotentin peninsula: a fishery issue facing tourism pressure

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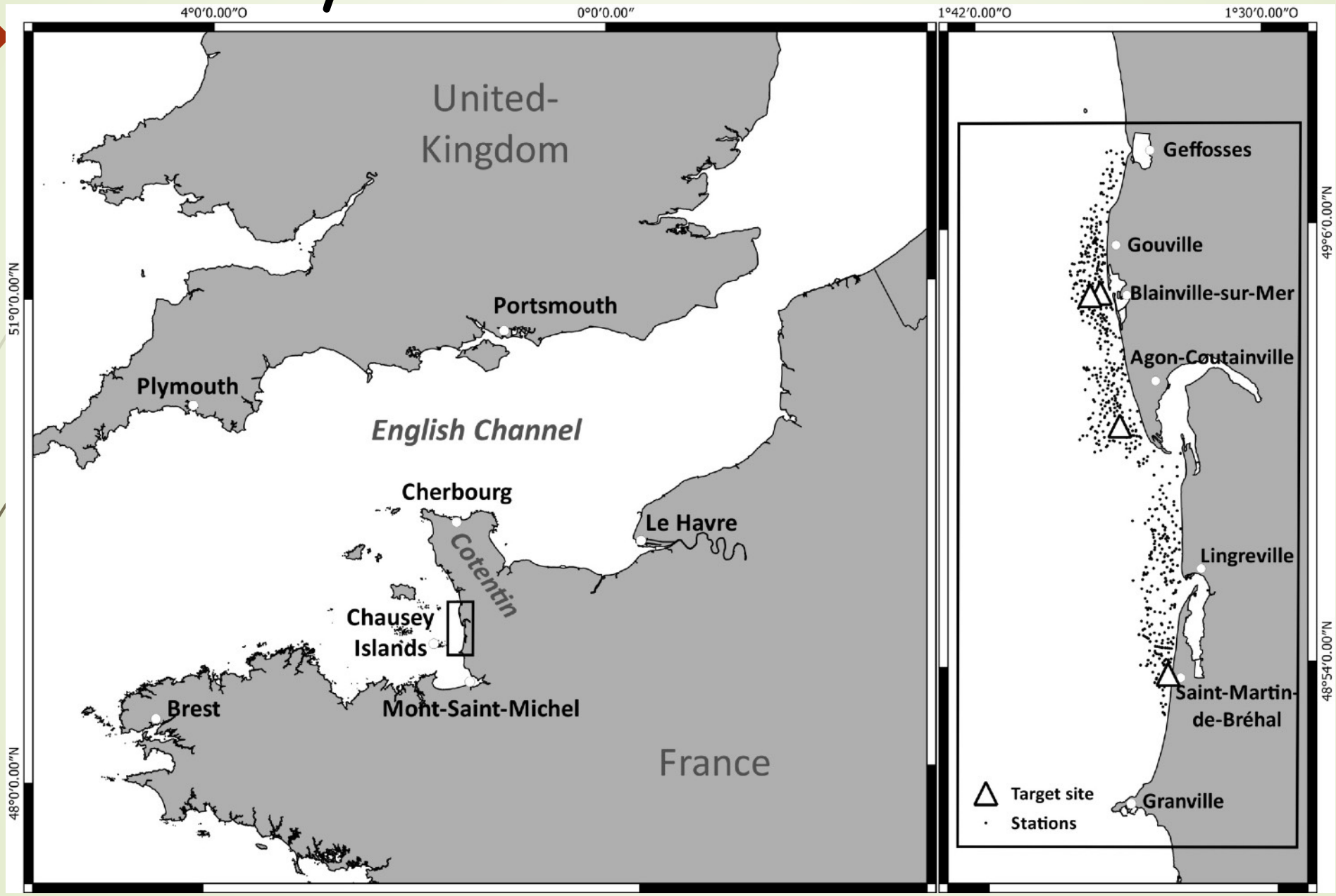
Photo CDPM 33

Coast 2017 Bordeaux Rencontres

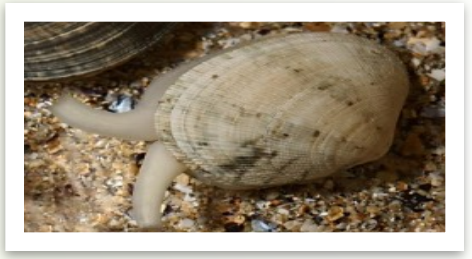
Study area: a vast intertidal zone



A vast intertidal zone with high fishing pressure

Three target species

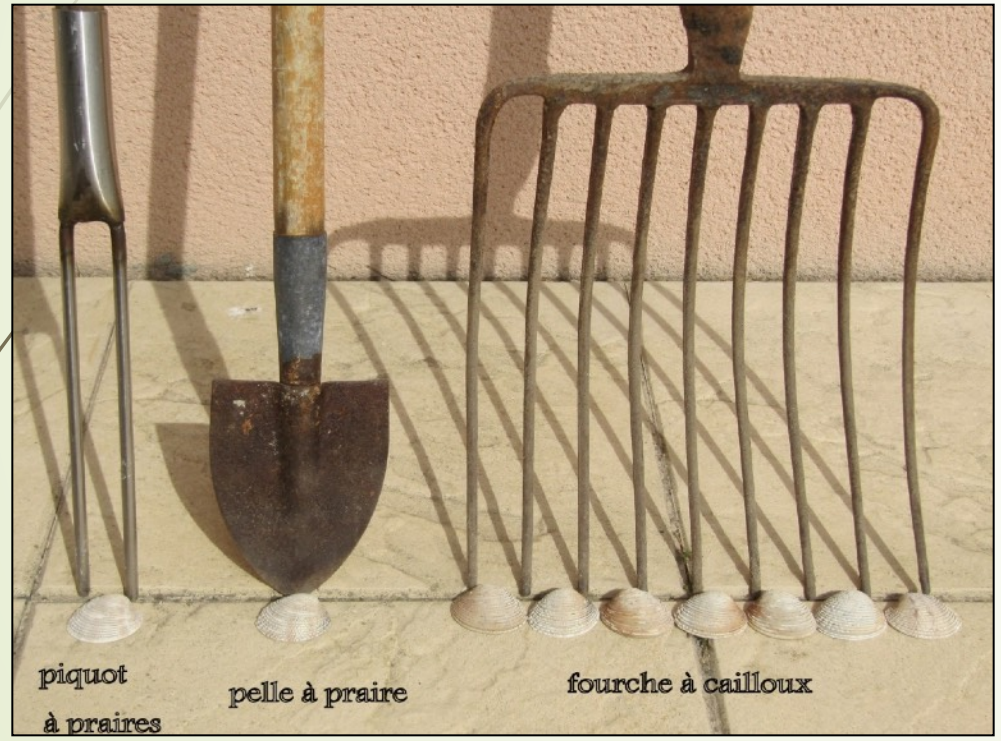
RuditapesdecussatusL., 1758
European clam (2%)



RuditapesphilippinarumAdam
s & Reeve, 1850
Manila (Japanese) clam
(98%)

Venus verrucosaL,, 1758
Warty venus

High diversity of fish gears with impact on benthic fauna for the rake (clams) and pebble forks (warty venus)



Do the fisheries are sustainable ?

Research goals on clams

Japanese clam: Ruditapesphilippinarum

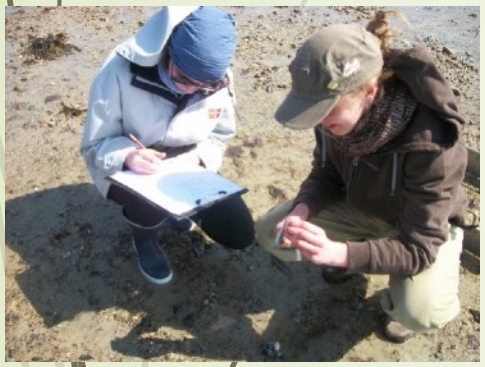
European clam: Ruditapesdecussatus

- Recreational and professional fishers harvesting mainly European and Japanese clams representing a major challenge for the western coast of Cotentin.
- The objectives of the study are to have a better knowledge about the resource, the development of stock indicators and of the trade of recreational and professional fishers.

Axe 1:Clam populations along the western coast in relation to the habitat

- Distribution of the species link with their sediment habitat.
- Population dynamics: size classes, growth, condition and pathology.
- Link between population movements sand sediment transport.

Axe 2: indicators of temporal changes of clam stocks



- Stock evaluation
- Growth studies
- Diseases and mortalities

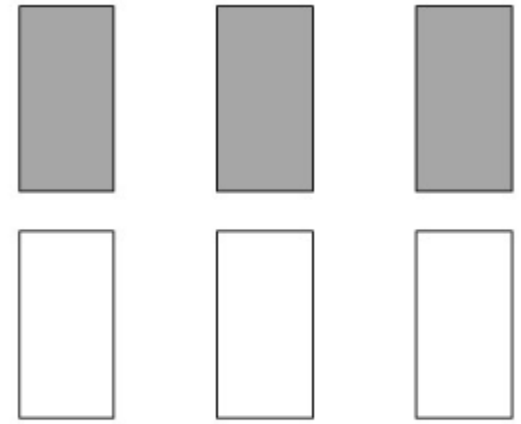
Axe 3: professional fishing

- Knowledge of the professional fish techniques
- Questionnaire on quantities of clam fish
- Research of optimal resource management

Main results

Axe 1:Clam populations along the western coast in relation to the habitat

Sampling strategy to estimate clam densities

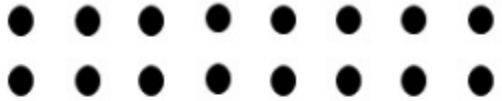


Station of 10 m²

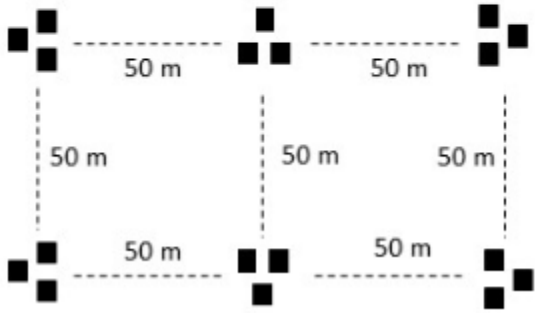
raked at T0

raked at T1

Quadrats sampling of 1 m²



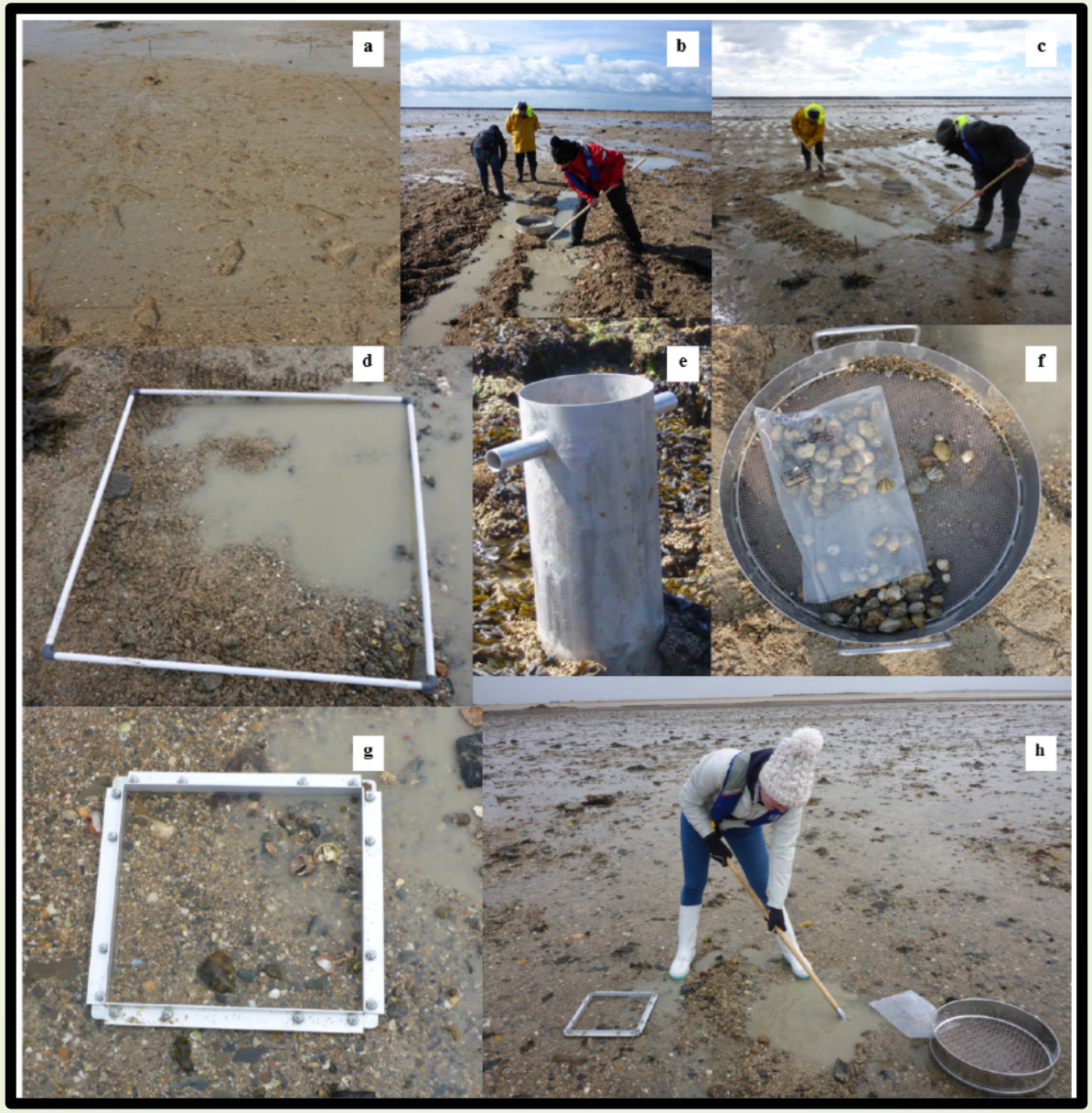
Hand corer sampling of 1/32 m²



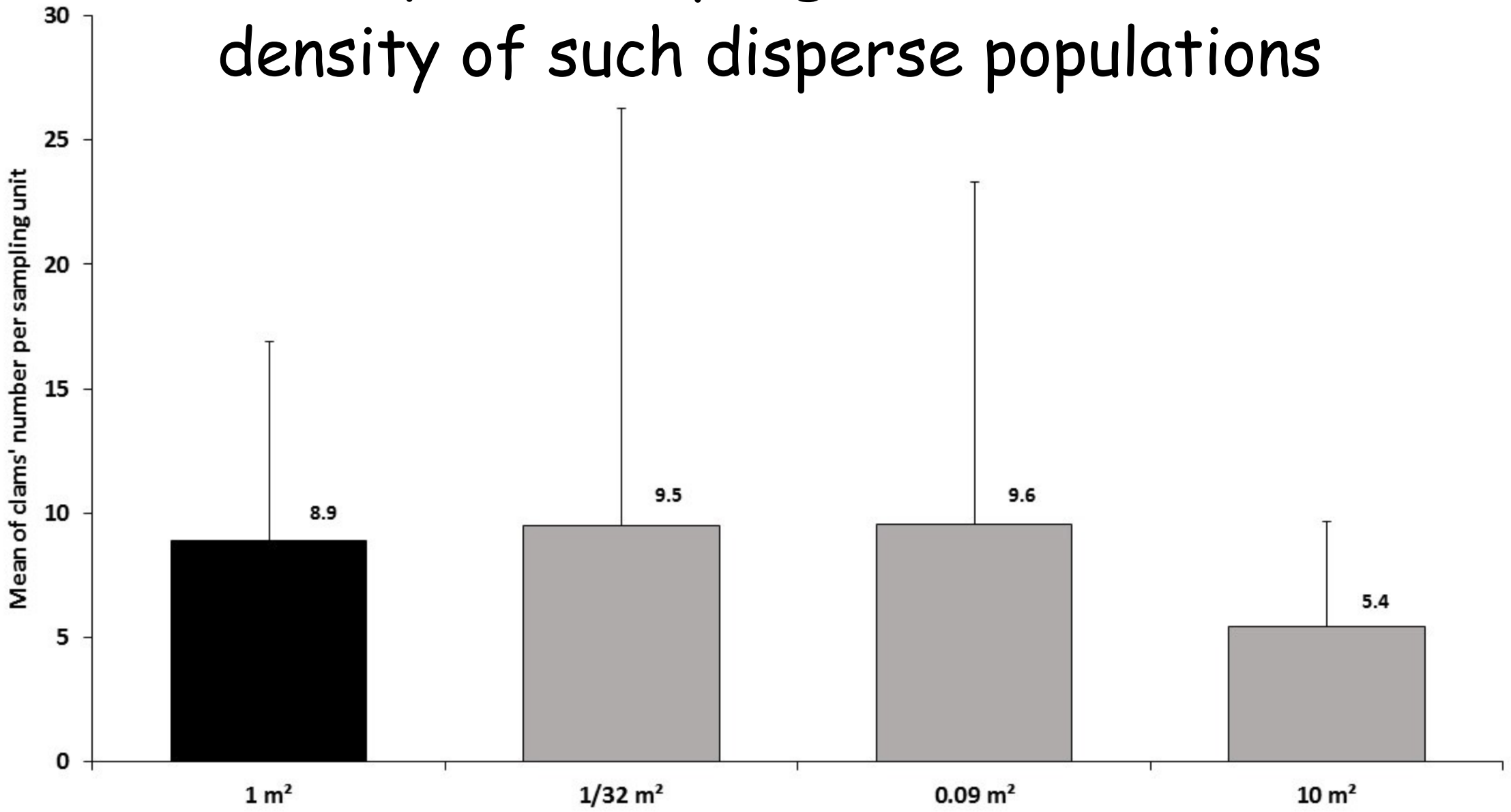
Quadrat sampling of 0.09 m²

Proposed by the « Fédération Nationale des Pêcheurs Plaisanciers et Sportifs Français »

Sampling strategy to estimate clam densities

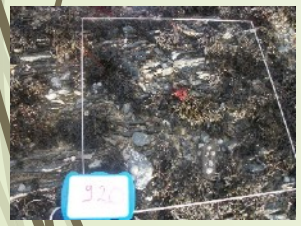


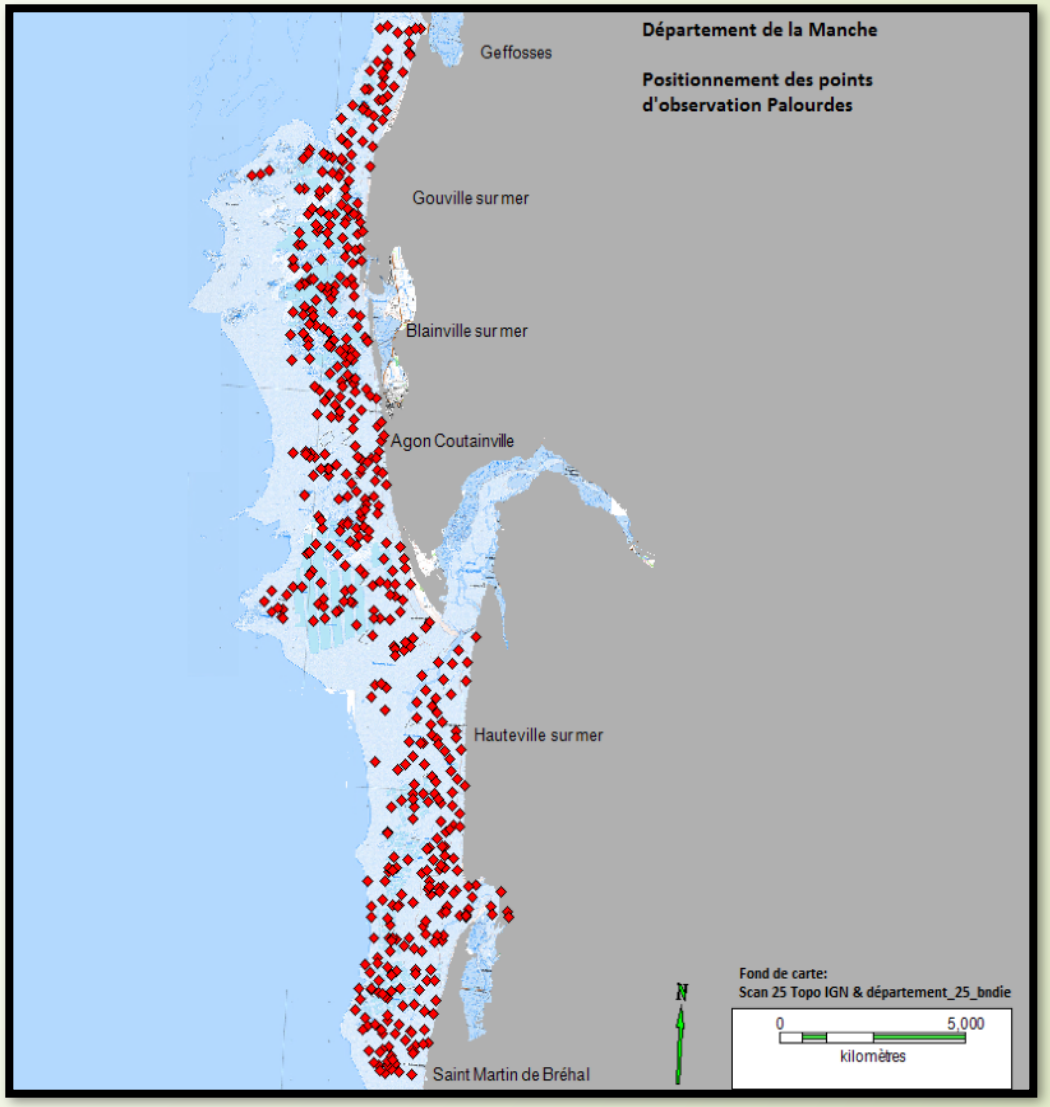
1 m² is an adequate sampling surface to estimate the density of such disperse populations



A first cartography of clam population

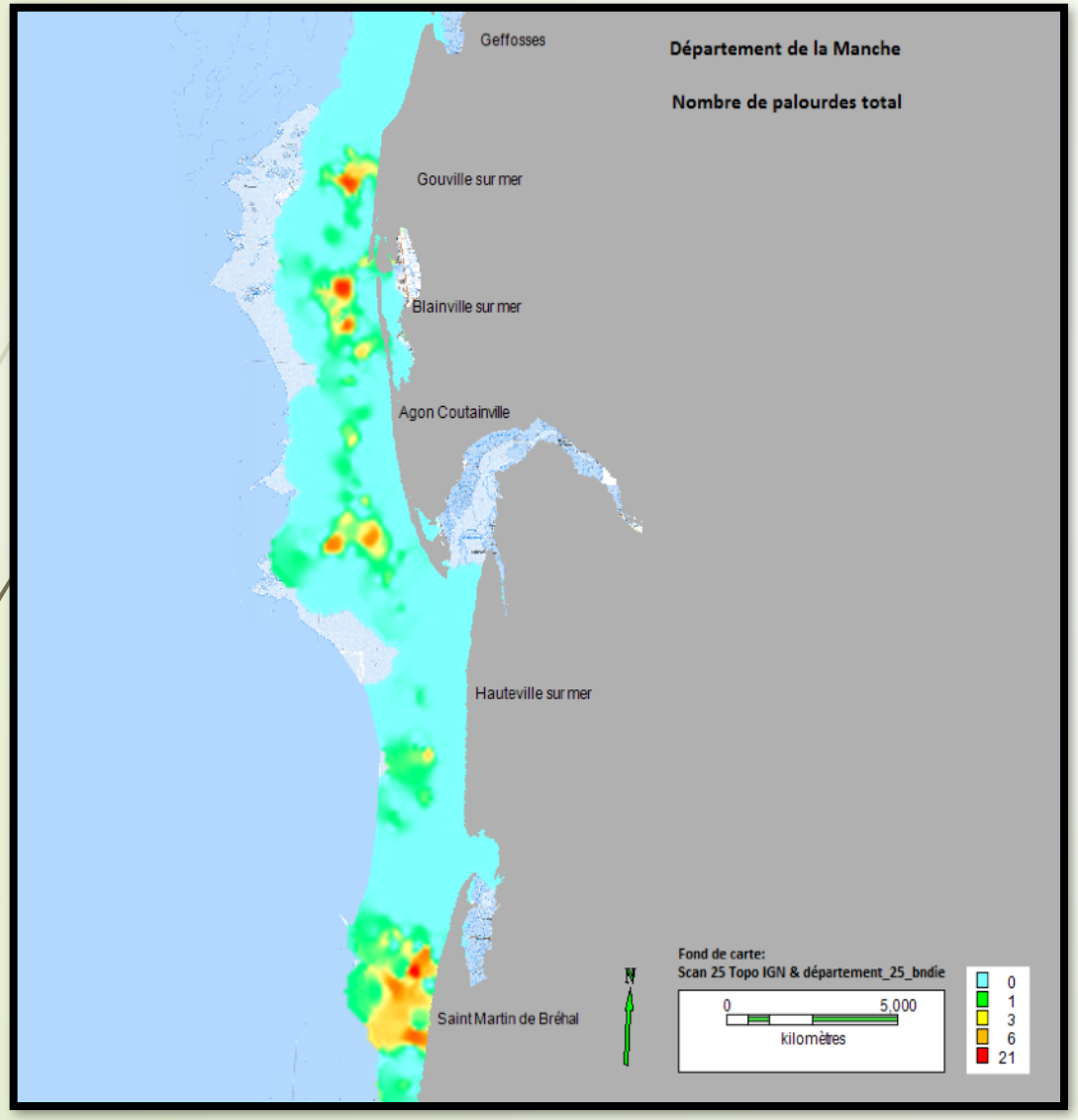
- Cartography
  - 424 points
  - 1 m² Quadrat
  - Size length of clams
  - Sédiment sampling
  - Photography of each quadrate

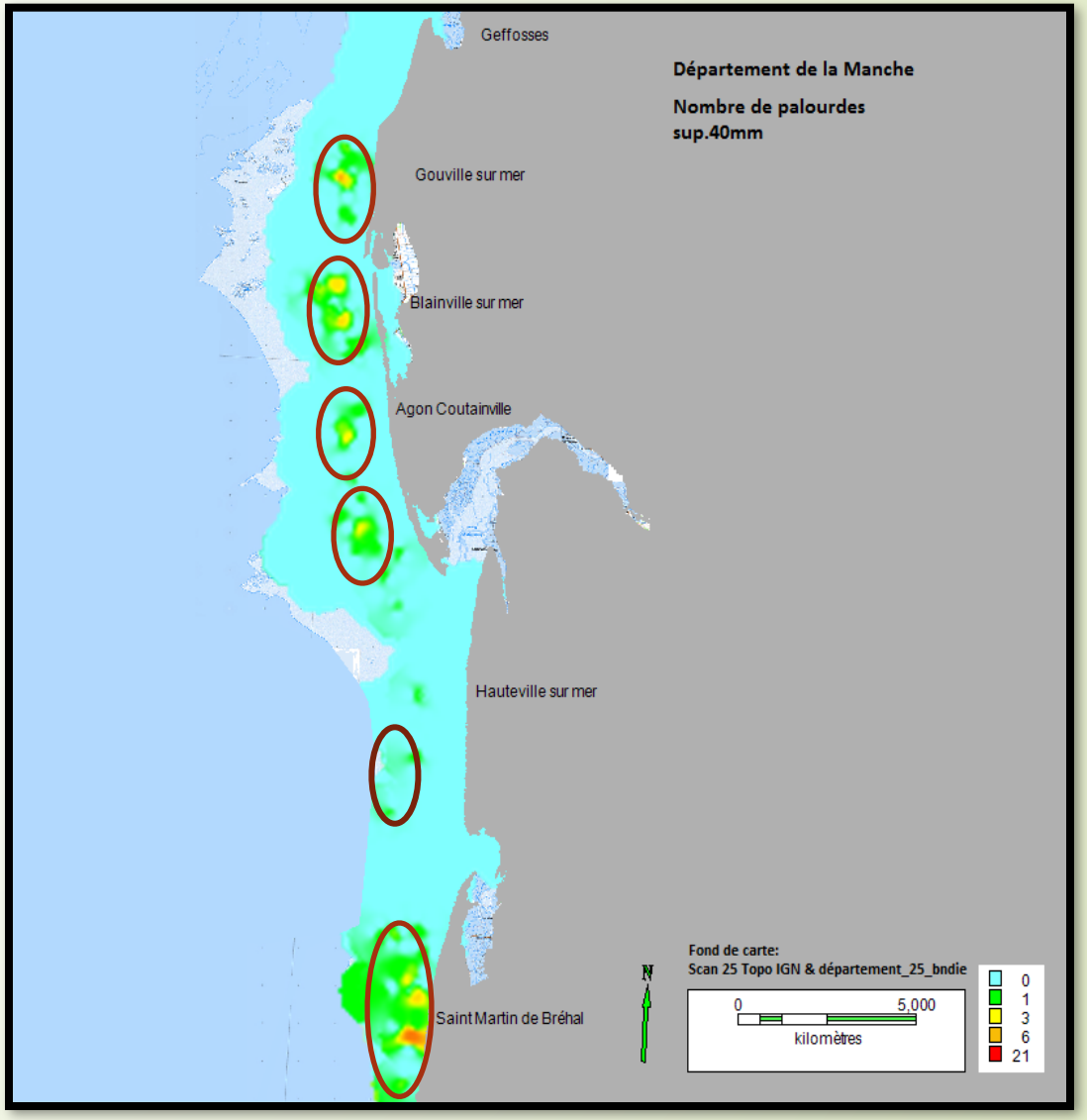


Total number of clams

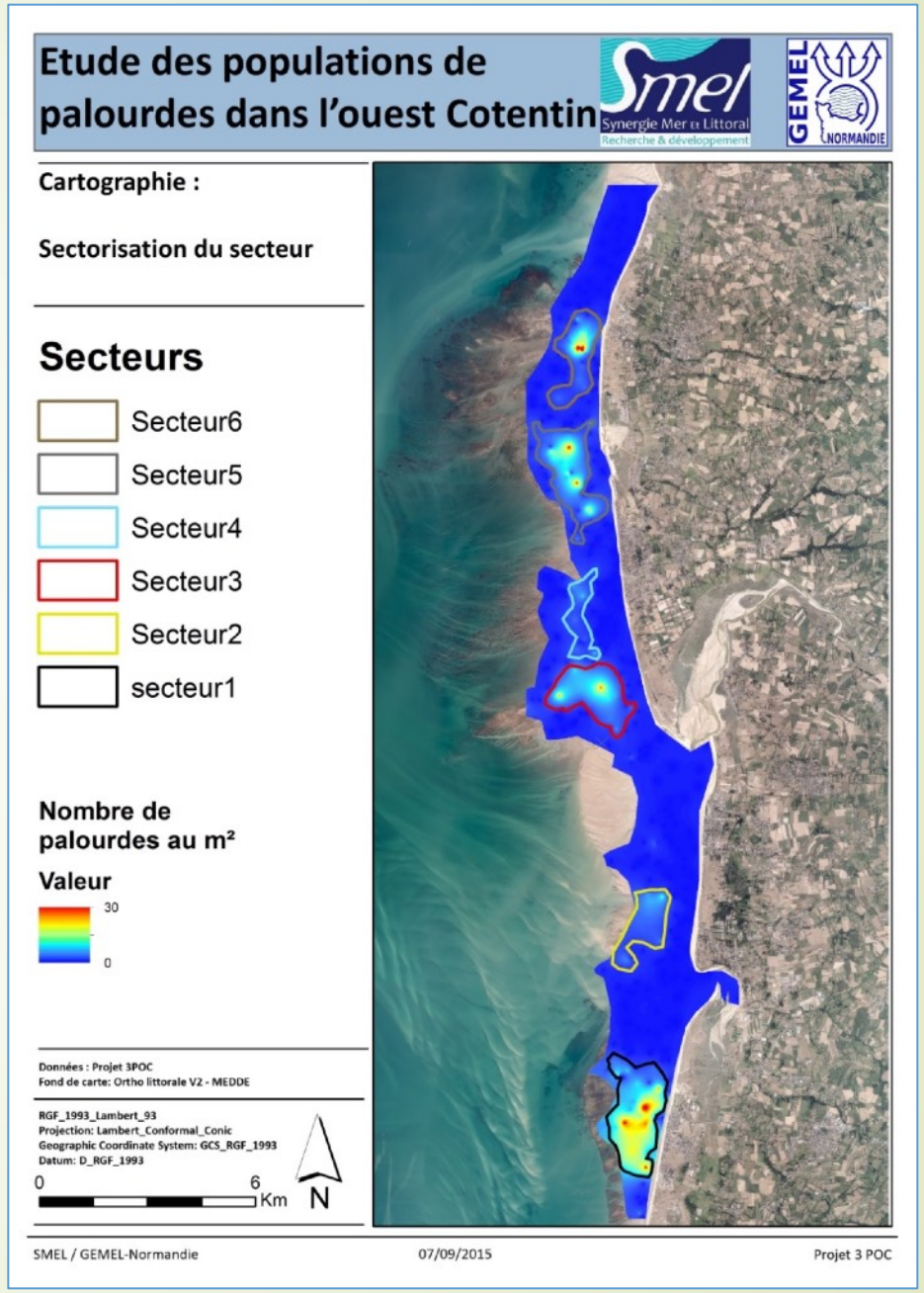
Number of clams > 40 mm





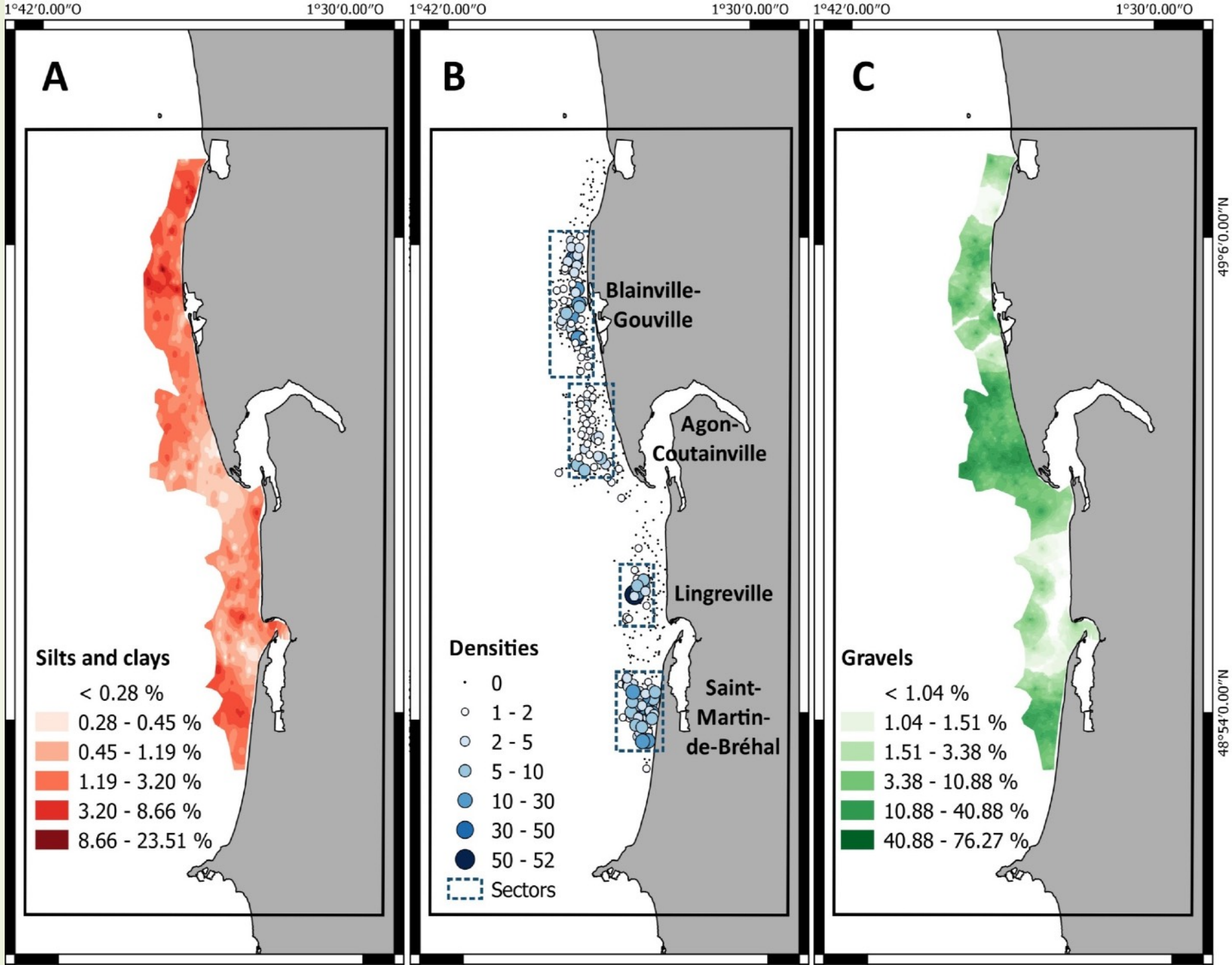
Axe1: an overall cartography

- Six main patches of densities (< 20 ind.m², mean about 5 m² with points having at least one clam and between 1-2 ind.m² with the totality of the sampling points), >200 ind.m² in some places of the Arcachon Bay



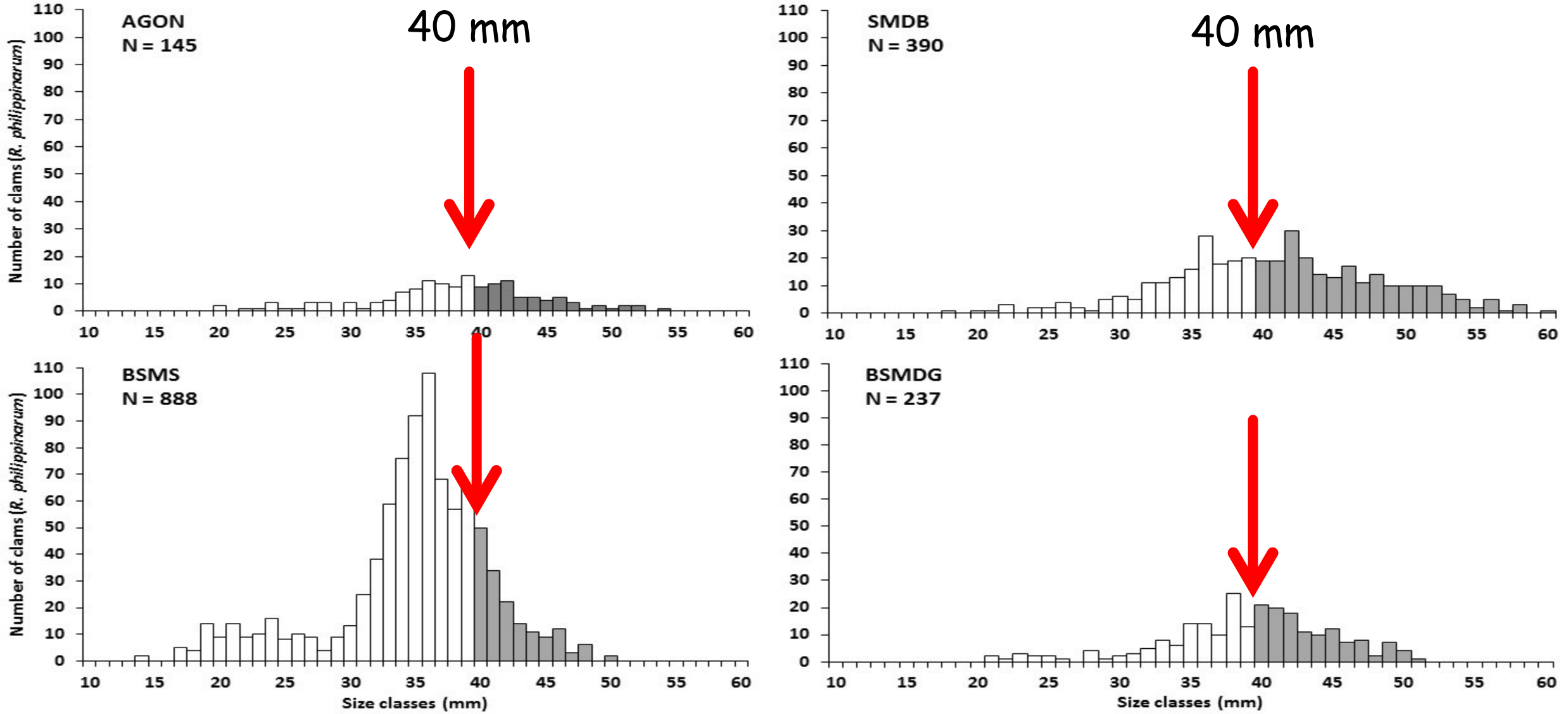
A link with sediment characteristics

A preference for heterometricsed iment: sandy and muddy gravels

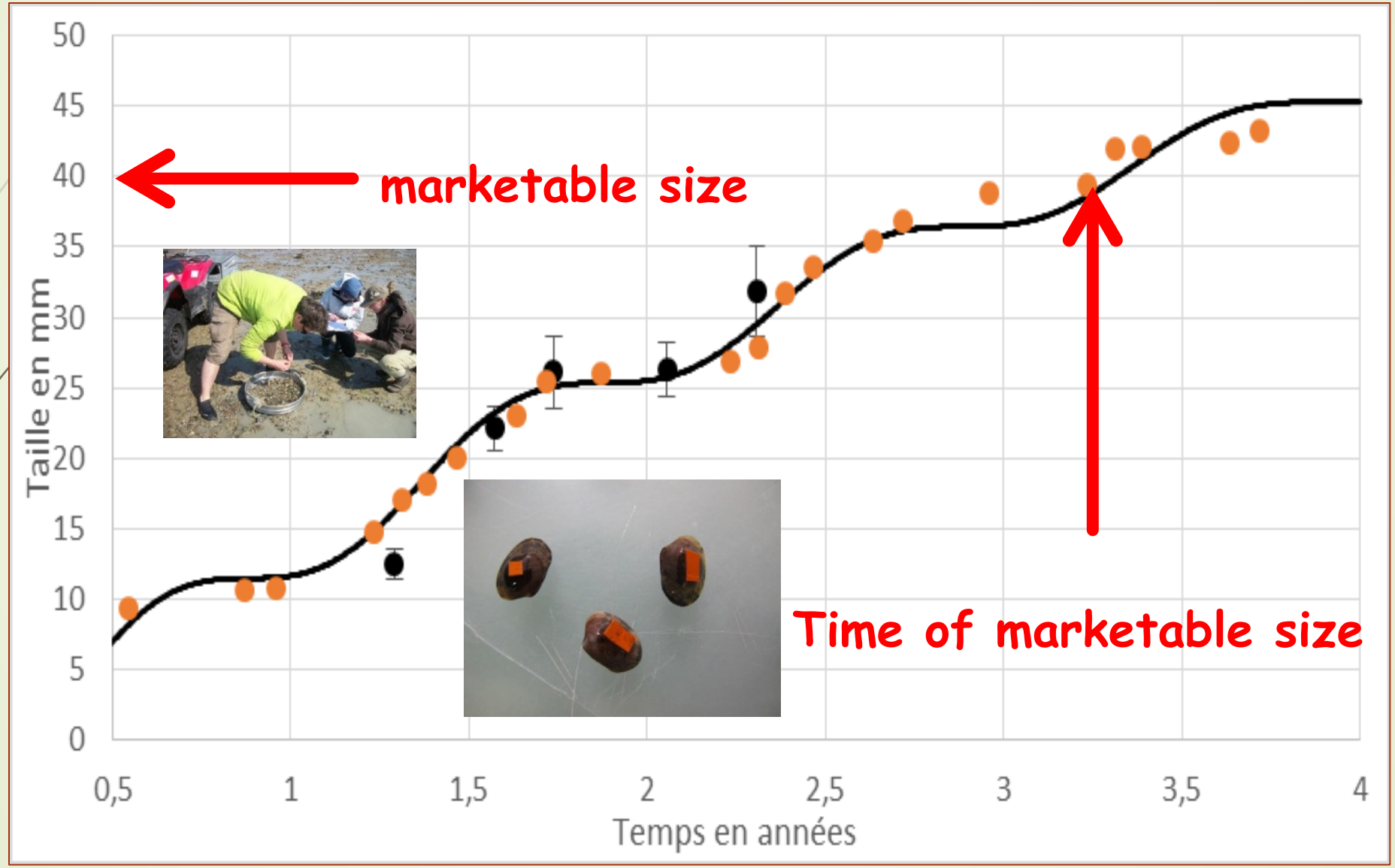


Axe 2: indicators of temporal changes of clam stocks

Size structure in four target sites

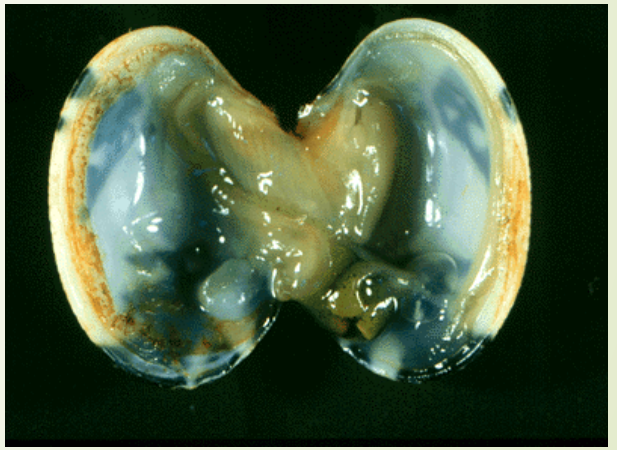


Clam growth at Gouville sur mer: survey with two methods, temporal changes of the population during one year (in black) and survey of marked clams from hatcheries (in orange).



Estimation of mortality causes

- Mortality causes
  - Perkinsosisdisease
  - Brown Muscle Disease
  - Snail predations
  - Capture by fishing
  - Mortality by raking

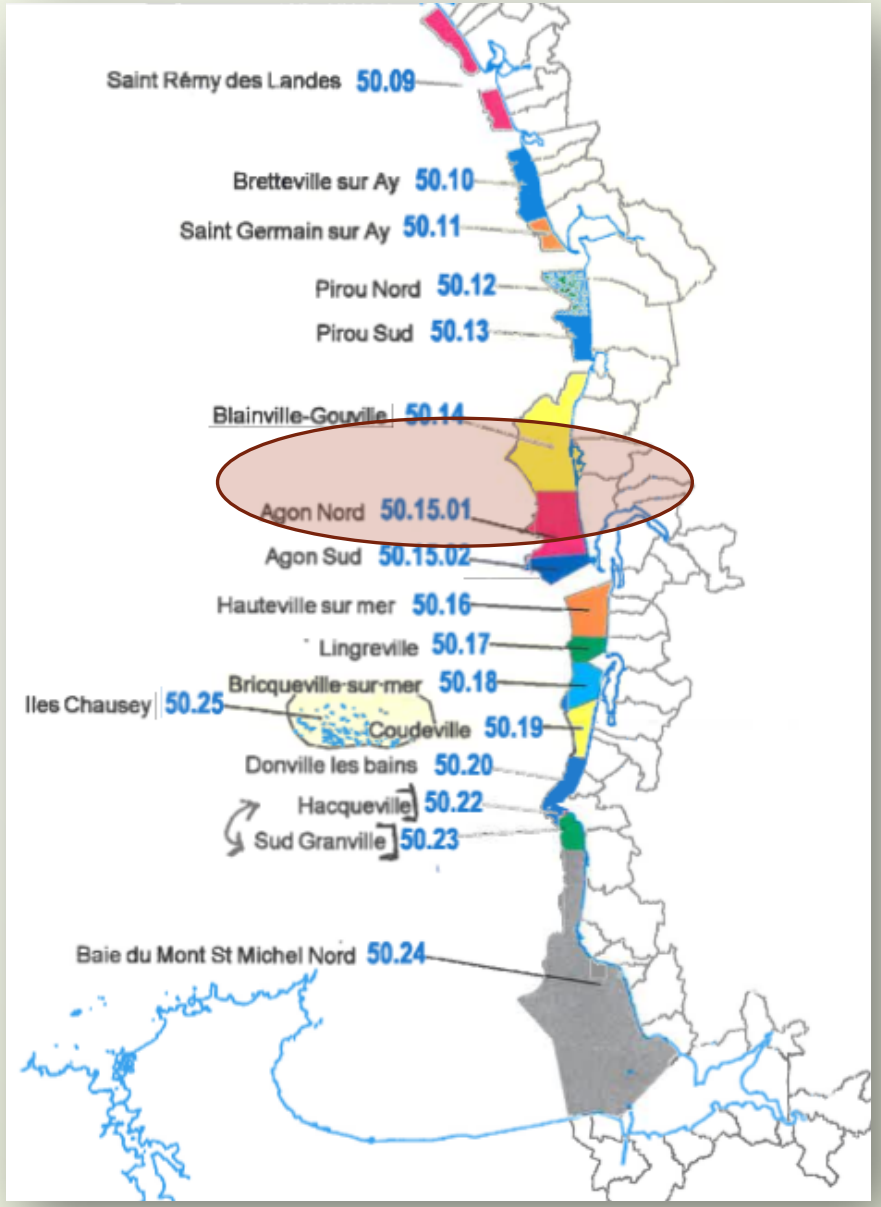


Axe 3: professional fishing and recreational pressure

Professional fish activity

- Low number of professional fishers
- 17 t per year
- 50% in the Blainville / Gouville zone
- Seasonal fishing
- 50% with a rake and 50% with eye detection of pits at the sediment surface

The fishing professional zones



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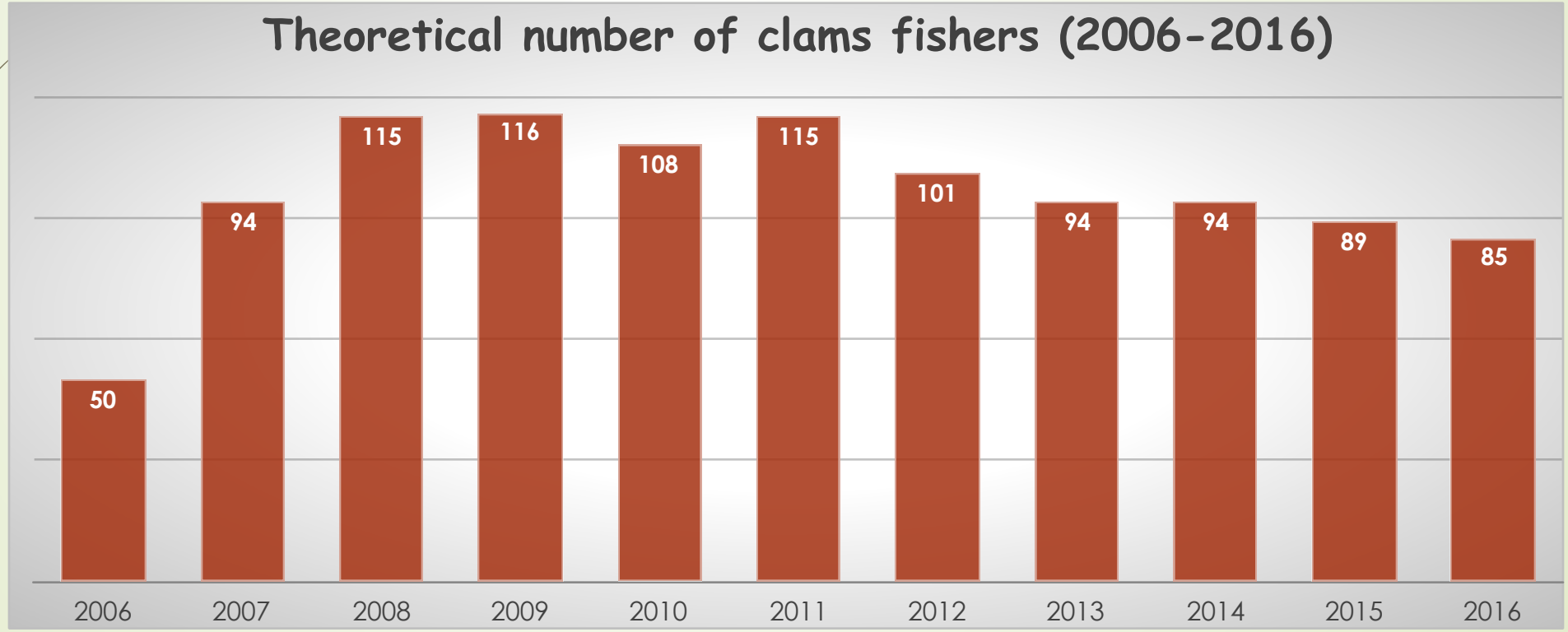
BASSE NORMANDIE

Present management

National authorization and regional licence « clams »

A regional management (AP 42/2008) : **20 kg/day – 40 mm**

A secondary activity (AP 49/2016) - **cockles is the first activity**



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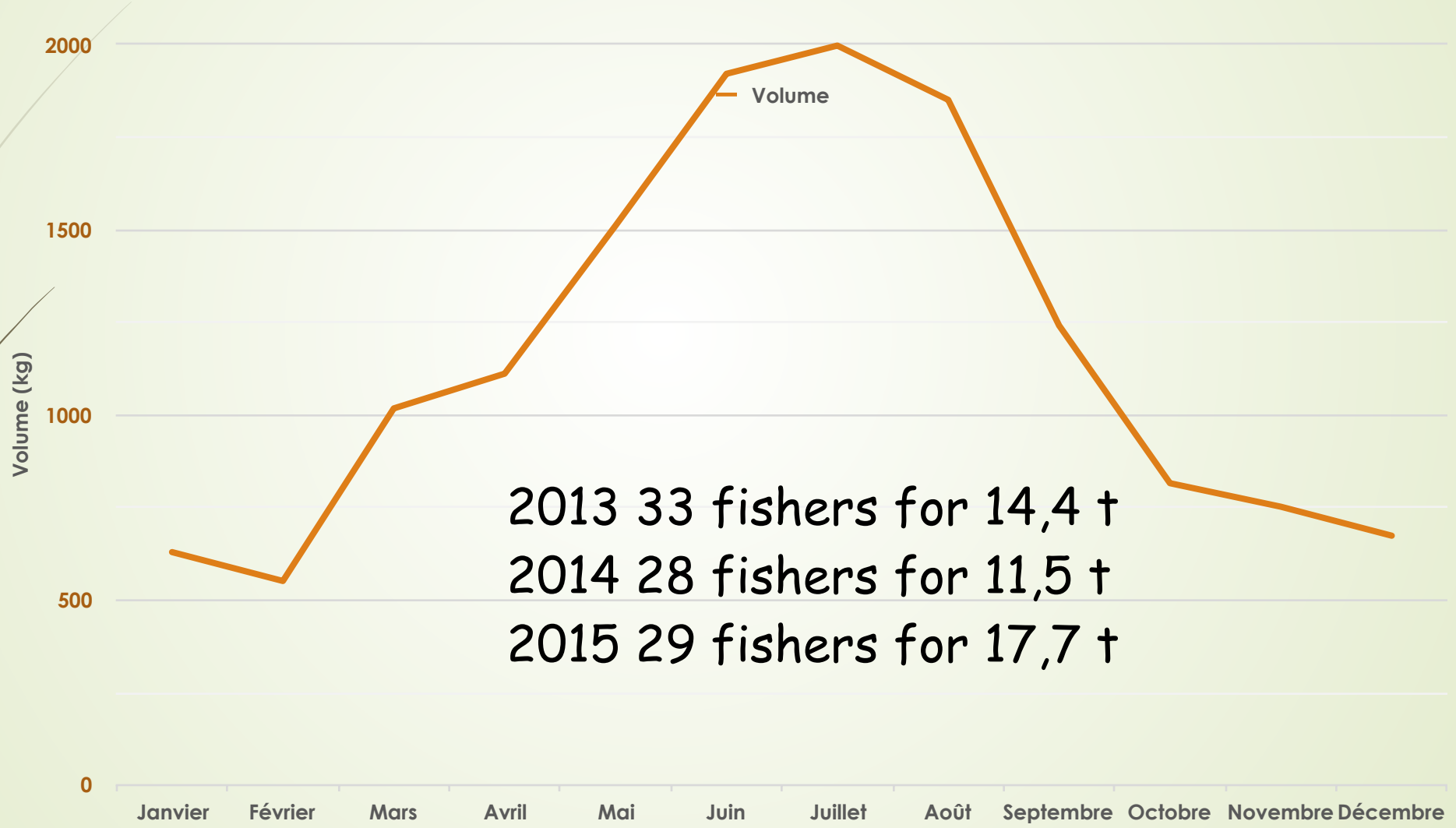
DES PECHES MARITIMES
BASSE NORMANDIE

A seasonal activity in Normandy



2013 33 fishers for 14,4 t
2014 28 fishers for 11,5 t
2015 29 fishers for 17,7 t

Source DDTM 50

The clam fisheries : how to evaluate the recreational catch / professional catch

Evaluation of recreational harvesting

- Very difficult to evaluate the recreative pressure but three main elements:
  - 1 average basket (number of clam / fisherman / day)
  - 2 medium-sized clams
  - 3 number of anglers
- Available data
  - LIFE accounts
  - National accounts
  - Two campaigns with specific indicators
  - Size of each zone
  - Tide effect
  - Weather effect
  - Knowledge of the field

Number of recreational fishers

LIFE estimation

Clam fishers: 66%

National estimation

Zones	October to March				April to September		
Tide coefficient	<70	70 à 95	>95		<70	70 à 95	>95
	84	70	28		82	77	24
St Martin de Bréhal	1	7	1310		8	85	1258
Lingreville							
Agon							
Coutainville	2	4	480		7	63	913

Zones	National estimation		
	08/04/2016	20/08/2016	10/09/2014
St Martin de Bréhal	2041	2000	3075
Lingreville	144	223	
Pt Agon	1231	210	2024
Coutainville			
Blainville	838	398	
Gouville	194	153	

Clam fishers per zone

Zones	October to March				April to September		
Tide coefficient	<70	70 à 95	>95		<70	70 à 95	>95
Number of days	84	70	28		82	77	24
St Martin de Bréhal	0	7	982		0	85	943
Lingreville	0	20	35		0	20	35
Pt Agon	0	3	10		0	3	10
Coutainville	0	3	10		0	3	10
Blainville	0	28	106		0	84	244

Average basket

Zones	Mean number of clams
St Martin de Bréhal	44.5
Lingreville	59.2
Pt Agon	10.5
Coutainville	47.5
Blainville	40.2

Mean size

zones	Wet weight in g
St Martin de Bréhal	29.4
Lingreville	25.4
Pt Agon	25.7
Coutainville	28.1
Blainville	26.2
Gouville	26.9

Biomass per recreational fishers

Zones	Biomass in t (wet weight)
St Martin de Bréhal	74.7
Lingreville	7.15
Pt Agon	0.26
Coutainville	1.28
Blainville	18.14
Gouville	11.03

Synthesis: stock and harvesting

	Zone 1 « St Martin »	Zoner 2 « Lingreville »	Zoner 3 « Pointe d'Agon »	Zone 4 « Coutainville »	Zone 5 « Blainville »	Zone6 « Gouville »	Total
Stock in t	216	19	19	27	63	48	382
Recreational catch	75	7,5	0,3	1	18	11	112
Professional catch					8		18

National evaluation:
Recreational fishers: 2300 t
Professional fishers: 961 t
Ratio 2.4

Ratio 6.2

Conclusions and perspectives

- Dispersed clams (two species) with low densities (< 2 ind.m^{-2}) structured in six main patches which support intensive professional and recreational hatching.
- A very attractive activity for tourisms during spring tide and along the time from the end to spring to the end of summer: several thousands of fishers.
- Difficulties to estimate recreational catch.
- An over-exploitation of stock mainly by recreational fishers (6 times higher than professional fishers, and three times higher than at a national level).
- A decreased stock supporting high fish effort (main patches especially in three of them Saint-Martin de Bréhal, Blainville sur mer and Gouville sur mer zones).

Conclusions and perspectives

- The need to manage the fishery: respect of the administrative obligations: numbers of clams per day per person (100) the minimum size (> 40 mm).
- To promote fish gear with low impact on the clam population and the benthic habitat (to forbidden the rake).
- To decrease the number of clam per day and per fisher ?
- To close the fish during some months ?
- To close during three years a local zone to show the effect of the protection on the clam stock ?
- But to promote a long-term survey of clam stock and catchment in the three target zones with very high fishing effort.
- The role of several fisher associations in the debate, with some of them proposing a sustainable and responsible fishing's but not other which promote natural heritage practises.

Thanks for your attention… and to the European, Regional and Department financial supports

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