



General Fisheries Commission for the Mediterranean
Commission Générale des Pêches pour la Méditerranée

LaMed-2 Project



FRANCE country report

by Henri FARRUGIO

Ifremer

Meeting on

Mediterranean coastal lagoons management:
interaction between aquaculture and capture
fisheries

Cagliari, Italy, 28-30 June 2011



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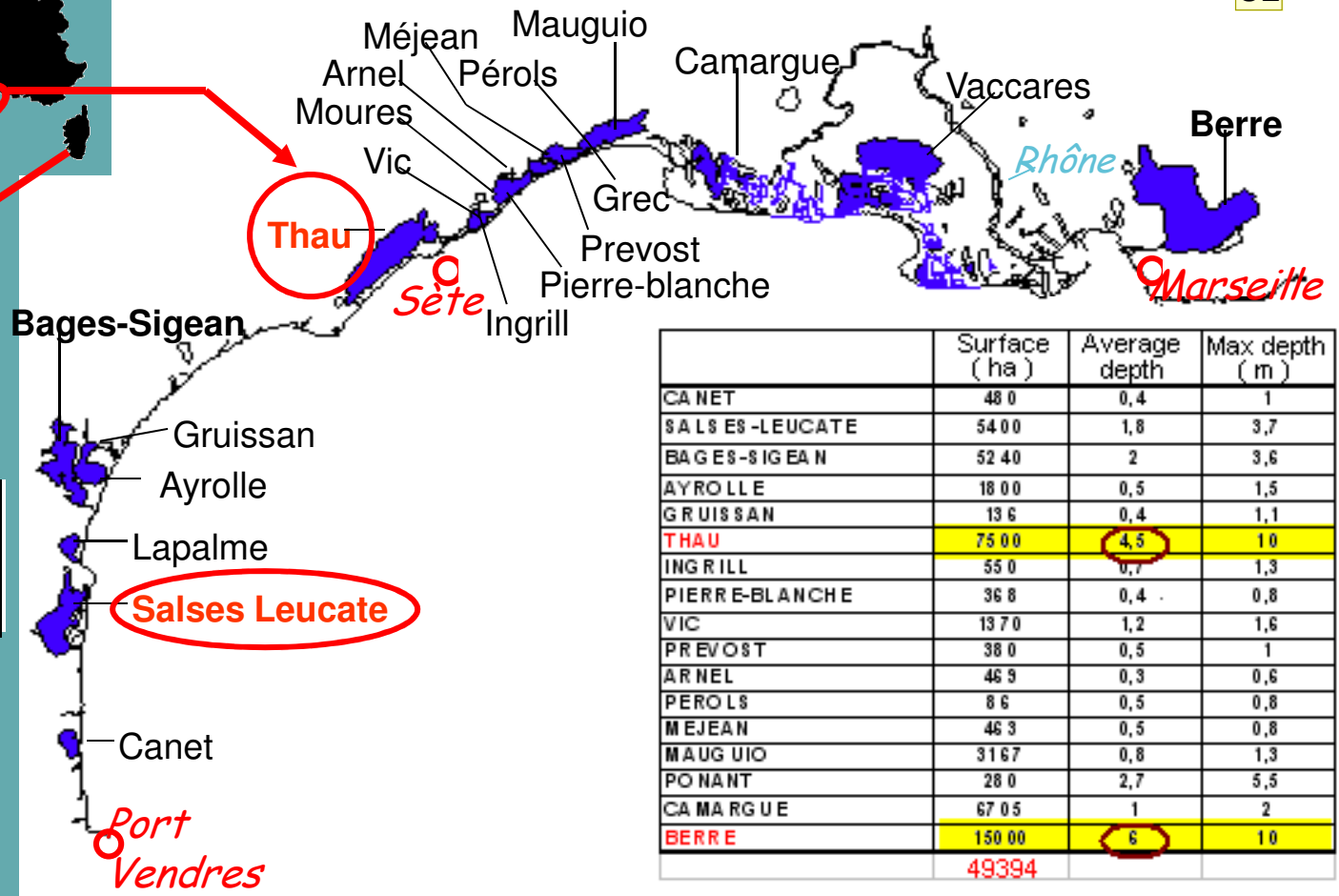
number, surface, distribution of lagoons in FRANCE

20 coastal lagoons, 53 000 hectares
In general very low depths

U2



	Surface (ha)	Average depth (m)	Max depth (m)
Biguglia	1450	1,5	2,5
Urbino	790	?	9
Diana	570	4	11



	Surface (ha)	Average depth (m)	Max depth (m)
CANET	480	0,4	1
SALS ES -LEUCATE	5400	1,8	3,7
BAGES-SIGEAN	5240	2	3,6
AYROLLE	1800	0,5	1,5
GRUISSAN	136	0,4	1,1
THAU	7500	4,5	10
INGRILL	550	0,7	1,3
PIERRE-BLANCHE	368	0,4	0,8
VIC	1370	1,2	1,6
PREVOST	380	0,5	1
ARNEL	469	0,3	0,6
PEROLS	86	0,5	0,8
MEJEAN	463	0,5	0,8
MAUGUIO	3167	0,8	1,3
PO NANT	280	2,7	5,5
CAMARGUE	6705	1	2
BERRE	15000	6	10
	49394		

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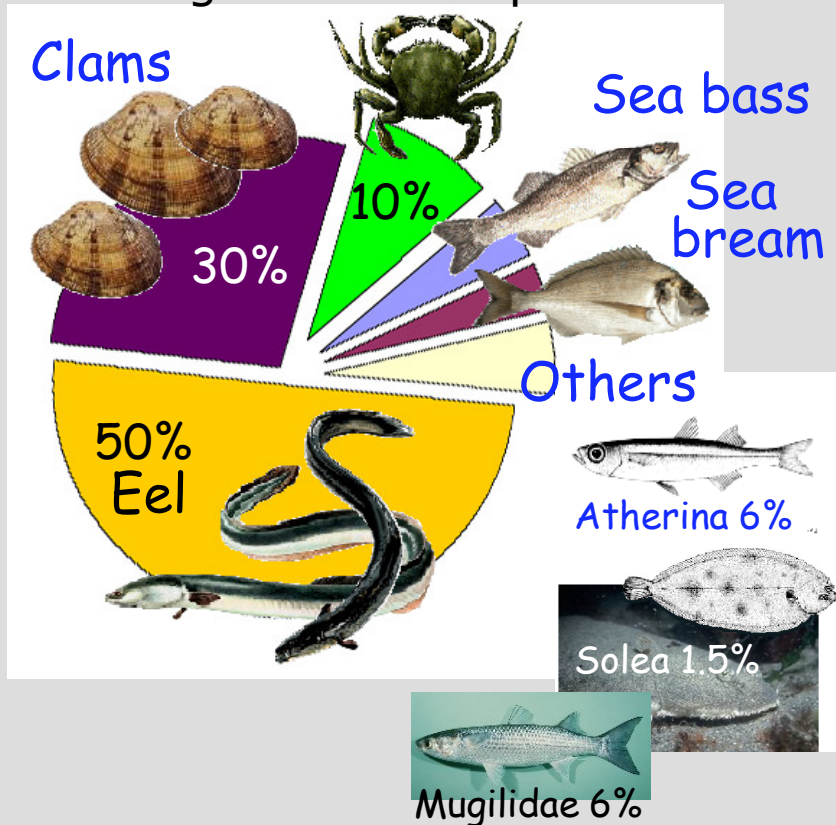
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Artisanal fisheries in all the lagoons

Shellfish aquaculture (+ some fish aquaculture) in some of them

Fishing ~ 1000 - 1500 tonnes/year
(yield = 30 - 200 kg/ha/year)

Average catch composition:



Shellfish aquaculture
~ 14000 tonnes/year

Oysters



Mussels

Lagoons	Leucate	Thau	Prévost	Corse	TOTAL
Production of OYSTERS (2010)	500	8200	17	300	9017
Production of MUSSELS (2010)	120	3500	23	1000	4643
Number of exploitations	26	566	1	3	596

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apart from capture fisheries and aquaculture

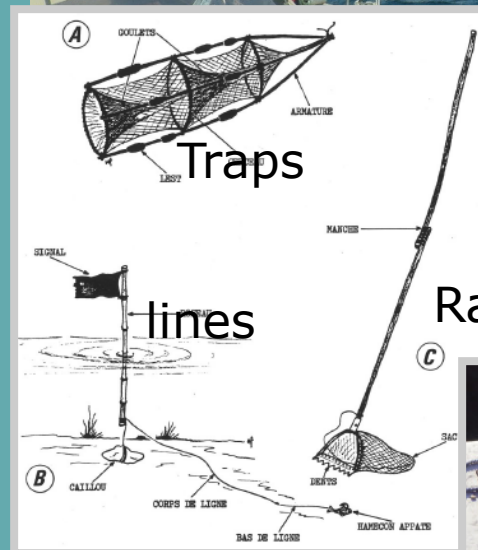
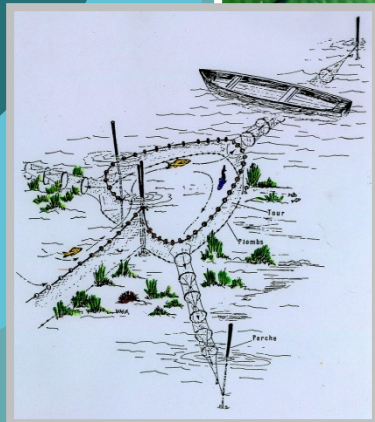
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Main fishing gears and boats



+ gillnets,
trammel
nets and
dredges

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ETANG DE THAU

Surface: 7 500 ha Average depth: 4.5 m Salinity: 30 – 40 ‰

Fishery: ~ 200 kg/ha/year

Aquaculture : oysters,
mussels, sea bass





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ETANG DE THAU : Shellfish culture

In 2010: 566 producers



8 200 tonnes of oysters
(*Crassostrea gigas*)

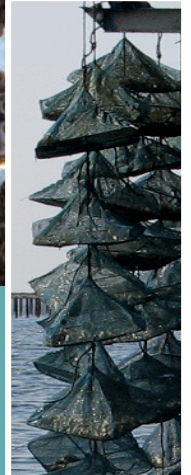


~ 60%
Triploids

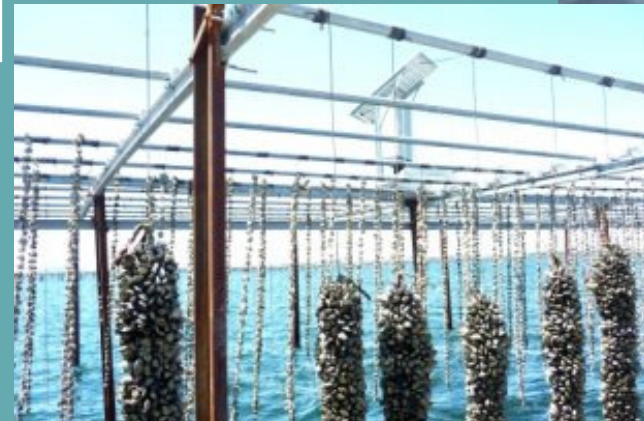
Ropes: 95%



3 500 tonnes of mussels
(*Mytilus galloprovincialis*)

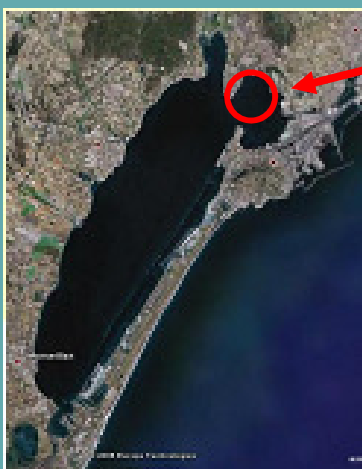


(+2 000 tonnes
of mussels at
sea)





ETANG DE THAU



Fish aquaculture « les poissons du soleil »
Created in 1975

Hatchery of sea bass sea bream
and croaker



Yearly production : 15 millions of fingerlings (5 to 15 grams)
of
sea bass (*Dicentrarchus labrax*)



sea bream (*Sparus aurata*)



croaker (*Argyrosomus regius*)





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ETANG DE LEUCATE

Surface 1 540 ha

Average Depth 2.10 m

Salinity 30-38‰

Fishing : average 30-40 kg/ha/year ?

Aquaculture: shellfish, sea bass

In 2010: 26 producers, 500 tonnes of oysters, 120 tonnes of mussels





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ETANGS PALAVASIENS

10 shallow water lagoons

Surface: 3 685 ha

Average depth: 0.50 – 1.60 m Salinity: 15 – 40 ‰

Fishery: 30 kg/ha/year ?

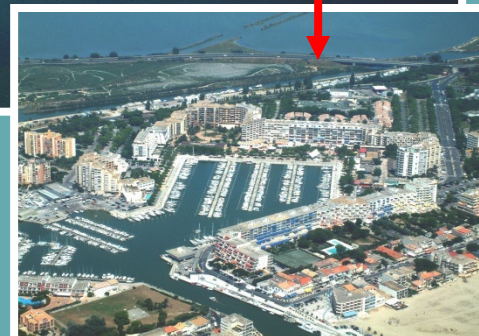
No Aquaculture



Channel from
Rhône river to
Thau



Huge
urbanisation



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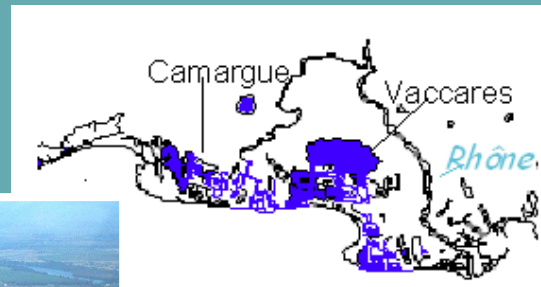
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ETANGS DE CAMARGUE

17 lagoons 6 700 ha

Average depth: 0.5 – 2.50 m

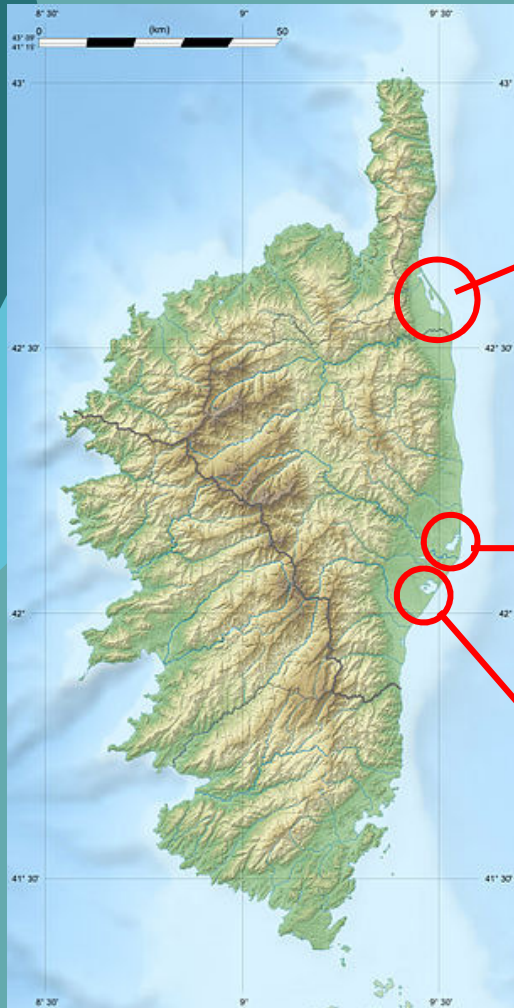
No Aquaculture





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LAGOONS OF CORSICA ISLAND



	Surface (ha)	Average depth (m)	Max depth (m)
Biguglia	1450	1,5	2,5
Urbino	790	?	9
Diana	570	4	11

Diana
Fishing + Aquaculture of oysters, mussels and sea bass



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other activities carried out in coastal lagoons

ETANG DE THAU

« Recreational » fishery on the
sea bream spawning migration
from lagoon to sea in autumn





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other activities carried out in coastal lagoons

ETANGS DE CAMARGUE : SALT PANS

10 800 ha 500 000 tonnes of salt/year



Aigues-Mortes, salins du midi



Camargue, salins de Giraud

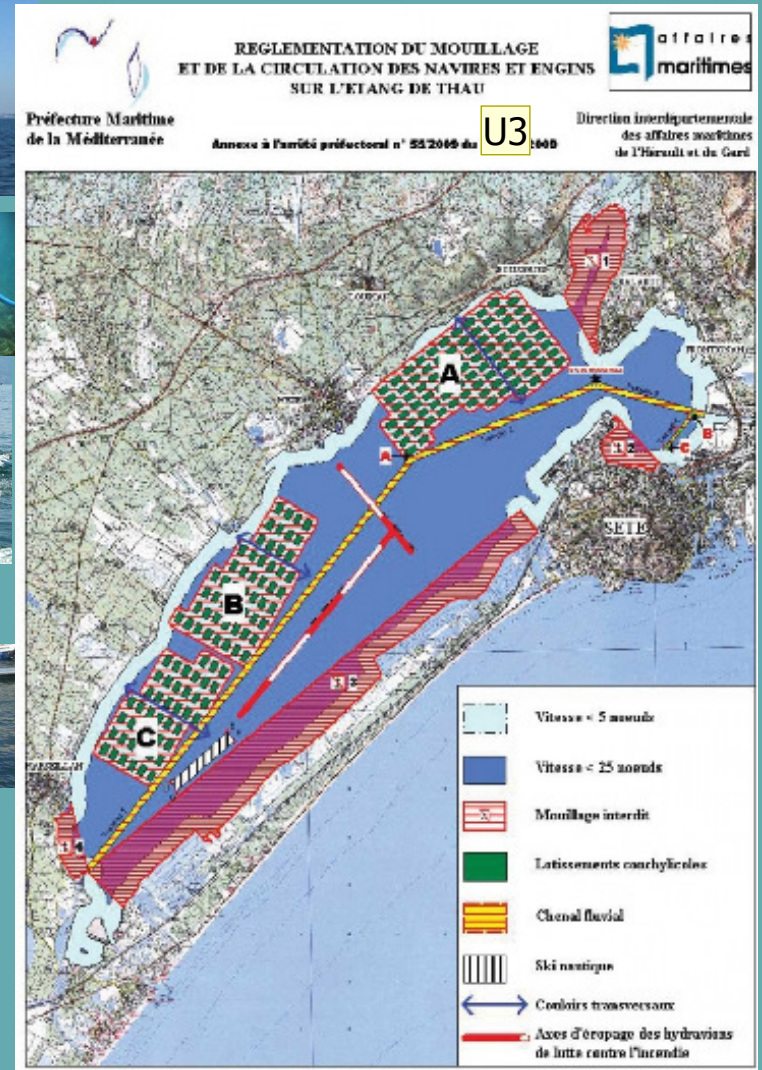
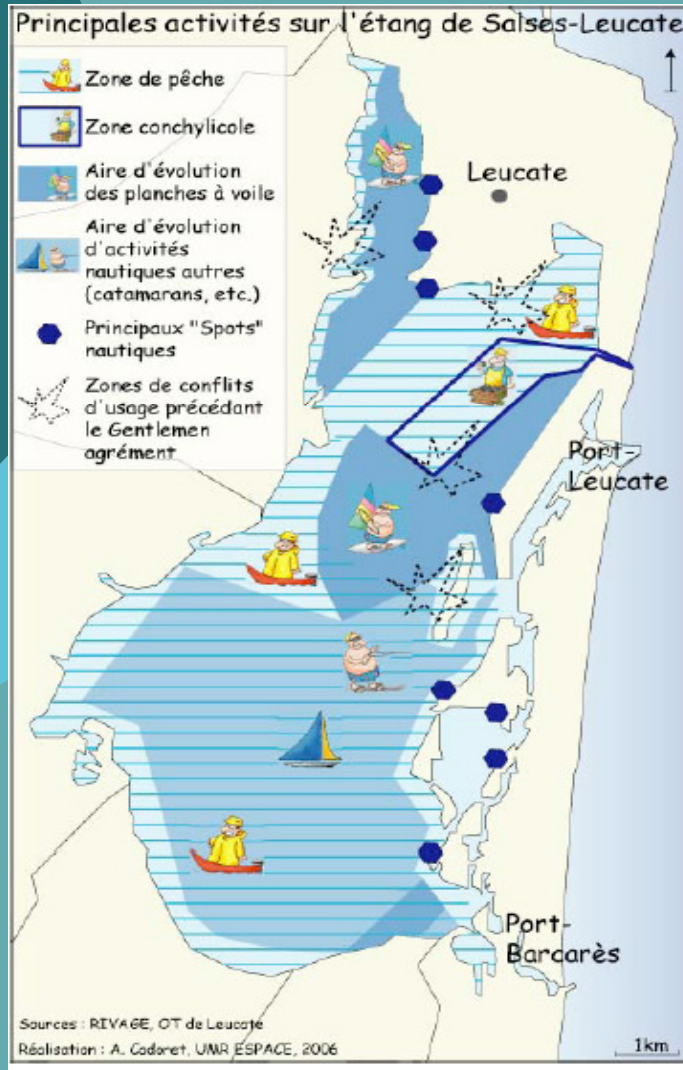


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other activities carried out in coastal lagoons



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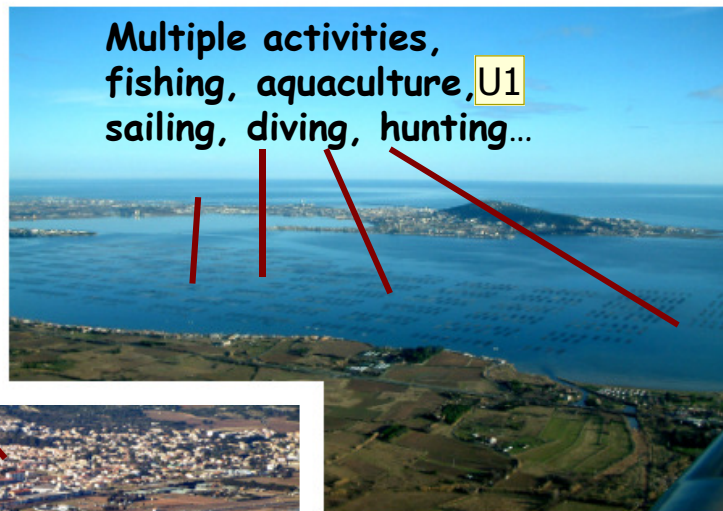
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environmental issues

Growing urbanisation



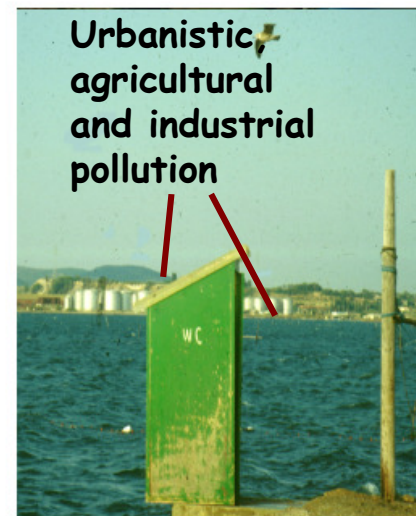
Multiple activities, fishing, aquaculture, U1 sailing, diving, hunting...



Coastal sandbank fragile



Urbanistic, agricultural and industrial pollution



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environmental issues
Blooms of toxic micro algae

DSP (Diarrhetic Shellfish Poison) in Leucate lagoon & PSP (Paralytic S.P) in Thau lagoon

Algal blooms, Anoxia, Eutrophication, shellfish mortality





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environmental issues

Sewage by organic matters
and chemical fertilizers
drained by the rain



Sewage sludge from
water-treatment plants





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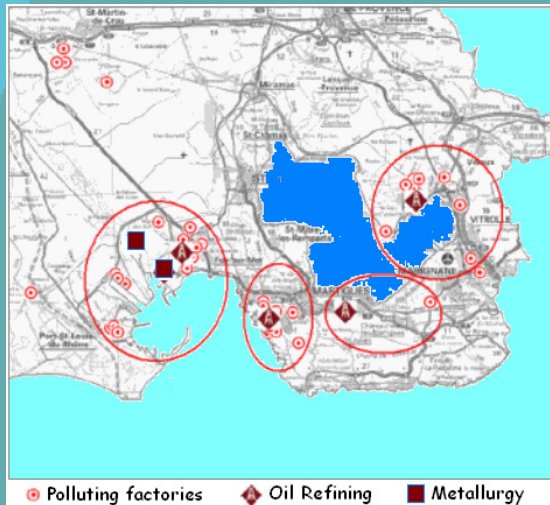
environmental issues: ETANG DE BERRE

Chemical pollution from oil & chemical industry,
massive freshwater inputs from hydroelectric plant

From 1966 to 1996 : 3.3 billiards m³ freshwater & 520 000 tonnes sediments per year

Nowadays limited to 2.1 billiards m³ & 310 000 tonnes per year

Eutrophication, Changes in biodiversity, Anoxia & disappearance of benthos

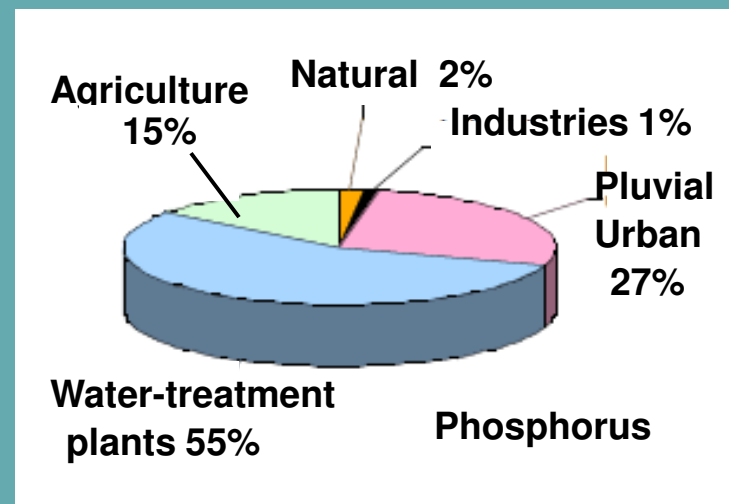
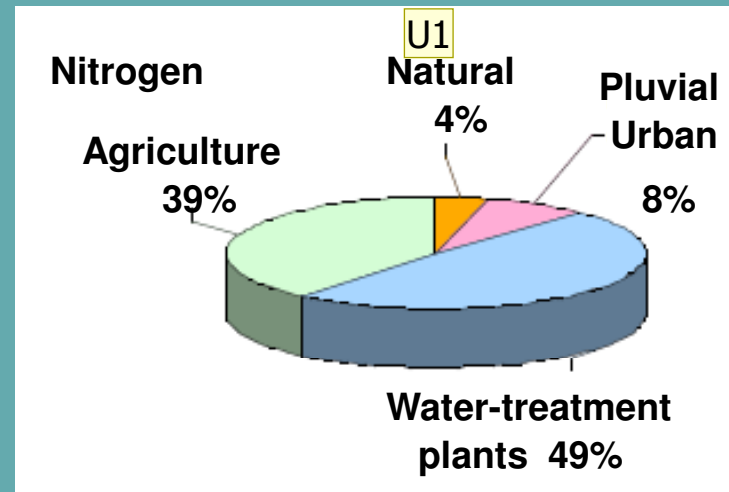
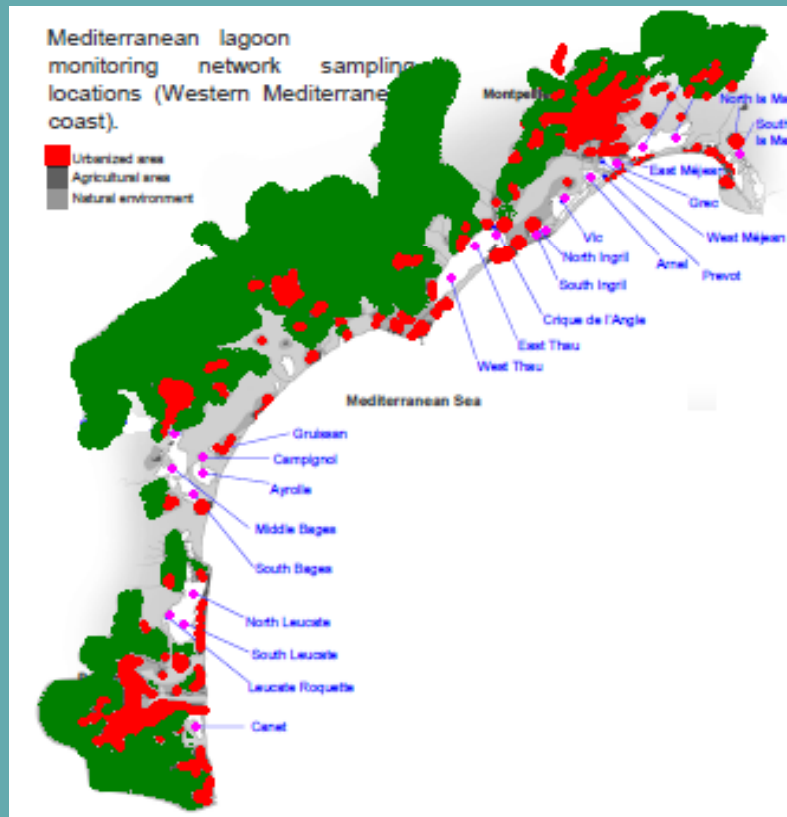




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environmental issues

IFREMER MONITORING NETWORK OF CONTROL STATIONS



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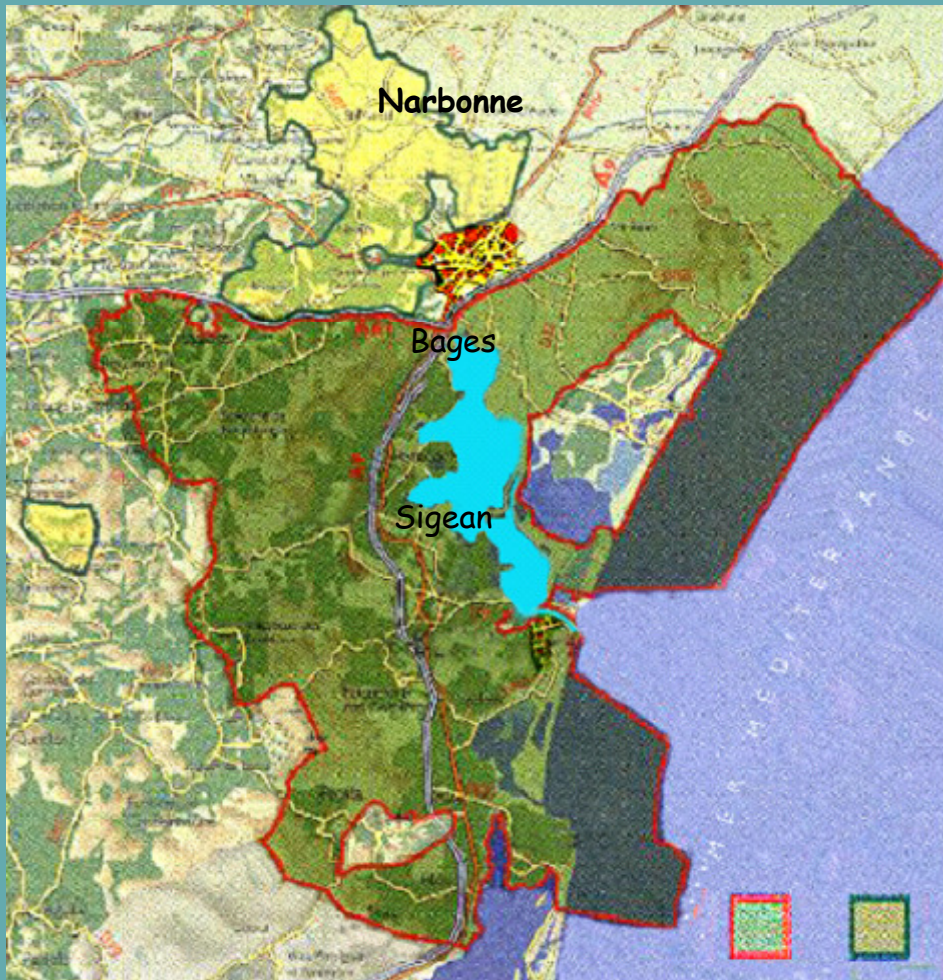
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From 1994: inclusion of the Bages lagoon in a natural park
(*Parc Naturel Régional de la Narbonnaise, Ministry of Environment*)

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Management Objectives:

Protect the natural environment

Maintain the artisanal fishery

Equilibrium between the various activities (professional & recreational fisheries, sailing & other touristic activities)

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emerging problems

Shellfishes mortalities due to

Herpes virus(OsHV-1)

Bactériás *Vibrio aesturianus* and *V. splendidus*

**THANKS
FOR YOUR
ATTENTION**

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