



Liberté • Égalité • Fraternité

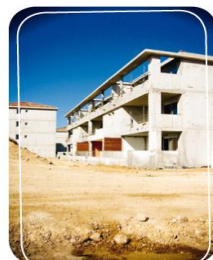
RÉPUBLIQUE FRANÇAISE

SPPPI/ PACSE - Réunion du 05/06/2014

REseau de surveillance des POrts Maritimes (REPOM)

-Golfe de Fos-

DDTM 13



REPOM (REseau de suivi des PORTs Maritimes)

- Objectifs du REPOM:

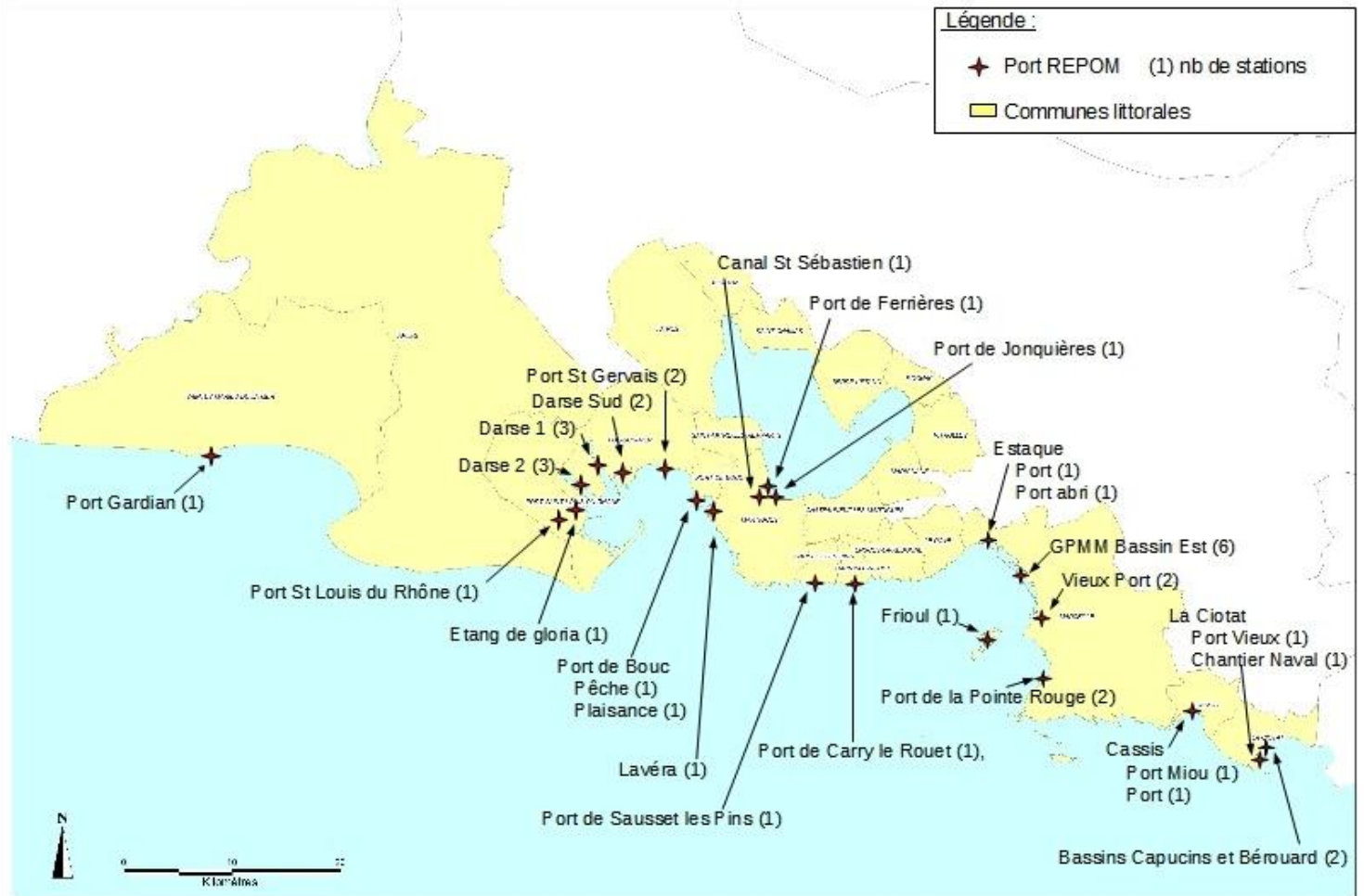
- ✓ Recueil de la donnée sur la qualité du milieu marin,
- ✓ Contribution à la connaissance de l'état des milieux imposée au niveau communautaire (DCE, DCSMM)
- ✓ Sensibiliser les gestionnaires sur la qualité du milieu,
- ✓ Connaître la contamination du milieu portuaire,
- ✓ Identifier les sources de pollution,
- ✓ Mettre en œuvre des actions pour limiter ou supprimer les sources de contamination,
- ✓ Si nécessaire éliminer la contamination .

- Maîtrise d'ouvrage : MEDDE
- Date de création : 1997 analyses eau et sédiments
- Evolution en 2010 : analyse sur sédiments et sur tous paramètres DCE pertinents
- Paramètres mesurés actuellement :
- granulométrie, métaux, PCB, HAP, organostanniques (TBT...), pesticides, organochlorés, phénols, composés bromés, phtalates.
- Nombre de points : 40
- Fréquence : 1 fois par an

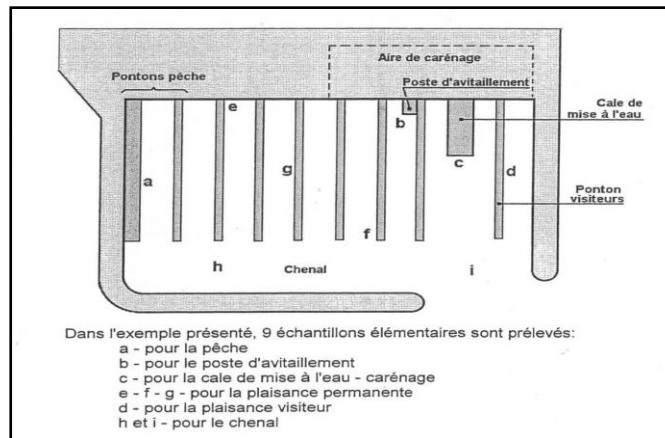
Les Ports concernés par le REPOM

REseau national de surveillance des Ports Maritimes (REPOM)

Campagne sédiments - Bouches-du-Rhône - 2013



L'échantillonnage



Méthode de prélèvements des sédiments d'après le document
de cadrage du REPOM, octobre 1997, MATE

Échantillons élémentaires

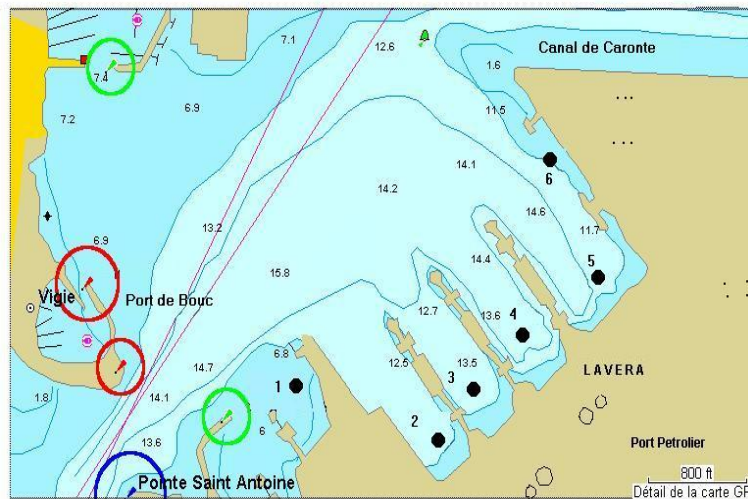
Port St Louis du Rhône (2010)



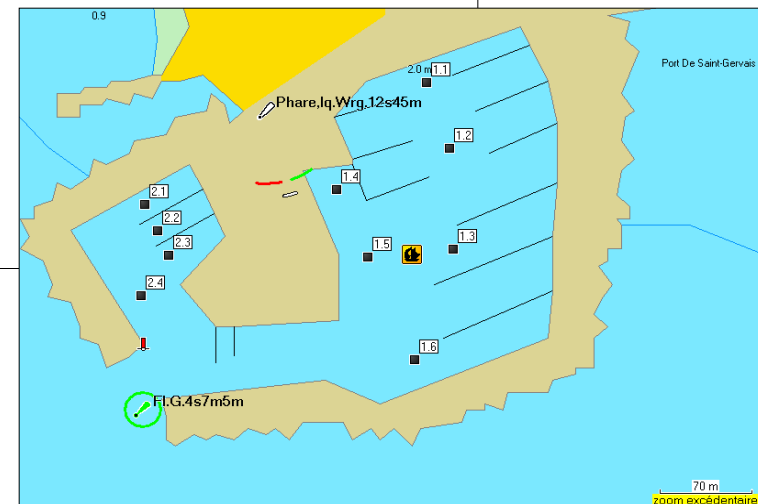
Etang de Gloria (2010)

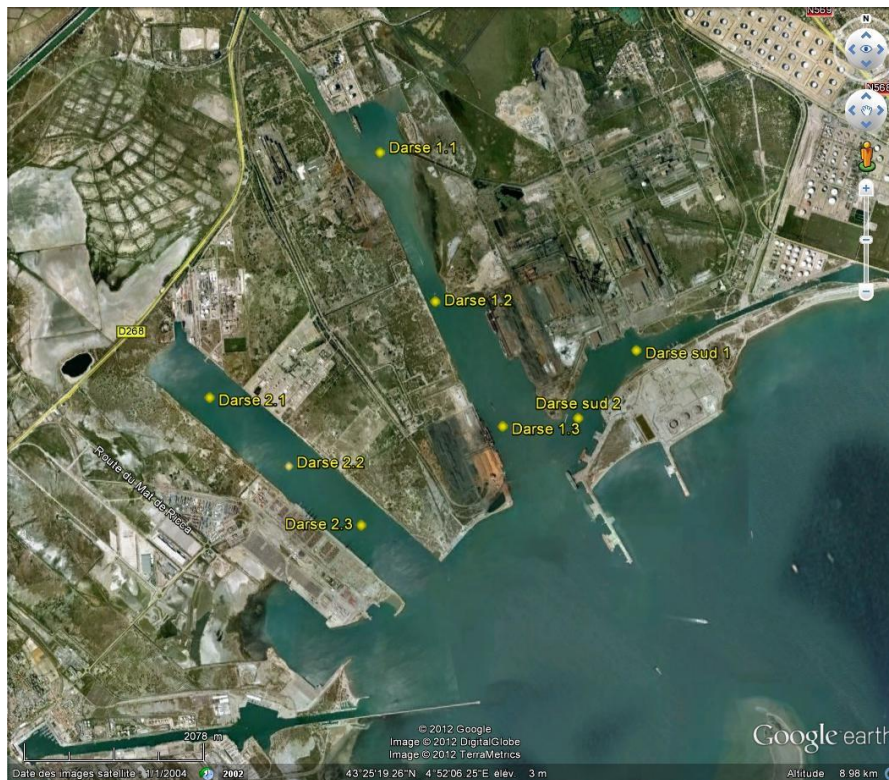


Port Pétrolier de Lavéra (1999)



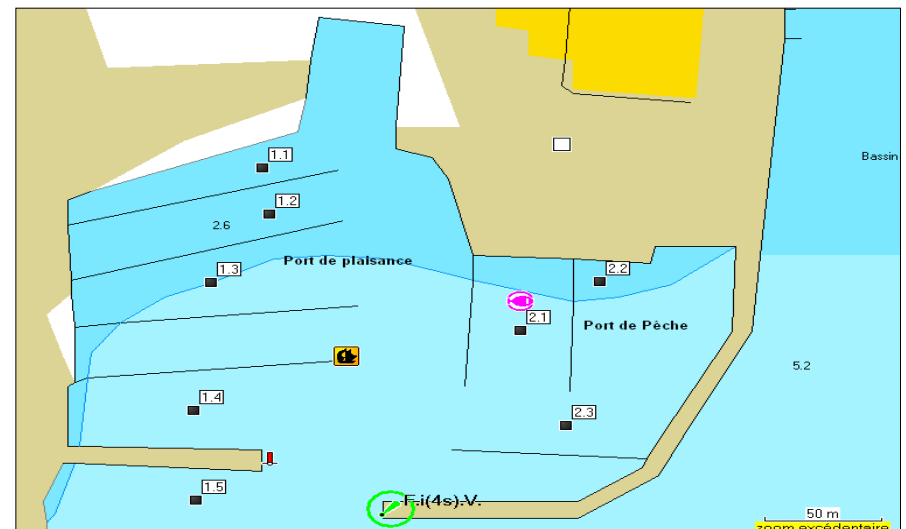
Port Fos St Gervais (1999)





Les darses du GPMM (2010)
(l'échantillon moyen est constitué par 3 échantillons élémentaires prélevés sur une radiale)

Port de Bouc (1999)



Liste des paramètres suivis:

Paramètres descripteurs du sédiment	Densité	Organostanniques	TBT	Composés bromés	pentabromo diphenyléther	Dioxines et furanes	12,3,6,7,8-HxCDF
	Granulométrie		DBT		octabromo diphenyléther		12,3,7,8,9-HxCDF
	Matières sèches		MBT		DBE-28(PBDE)		2,3,4,6,7,8-HxCDF
	COT		acétate de triphénylétain		DBE-47(PBDE)		12,3,4,6,7,8-HpCDF
	Aluminium		chlorure de triphénylétain		DBE-99(PBDE)		12,3,4,7,8,9-HpCDF
	Lithium		hydroxyde de triphénylétain		DBE-100(PBDE)		OCDF
Métaux	Arsenic	Polychlorobiphényles	PCB totaux		DBE-153(PBDE)		
	Cadmium		PCB 28		DBE-154(PBDE)		
	Chrome		PCB 52		DBE-153(PBDE)		
	Cuivre		PCB 101		DBE-157(PBDE)		
	Mercure		PCB 118		DBE-206(PBDE)		
	Nickel		PCB 138		DBE-207(PBDE)		
	Plomb		PCB 153		DBE-209(PBDE)		
	Zinc		PCB 180		HB CD (HexaBromoCycloDecanes)		
	Etain	Organochlorés	Alpha HCH		Alpha-HBCD		
			Béta HCH		Beta-HBCD		
HAP	HAP totaux		Gamma HCH		Gamma-HBCD		
	Anthracène	Pesticides	Delta HCH		diéthylhexaphtalate(DEHP)		
	Benzo(a)anthracène		aldrine		Méthyle-Hg		
	Benzo(a)pyrène		dieldrine	Dioxines et furanes	tétrabromobisphénol-A (TBBP-A)		
	Benzo(b)fluoranthène		endrine		Perfluorooctane sulphonate (PFOS)		
	benzo(ghi)perylène		isodrine		2,3,7,8-TCDD		
	benzo(k)fluoranthène		HCB (hexachlorobenzène)		12,3,7,8-PeCDD		
	chrysène		DDT		12,3,4,7,8-HxCDD		
	Fluoranthène		alpha endosulfan		12,3,6,7,8-HxCDD		
	indeno(123cd)pyrène		beta endo sulfan		12,3,7,8-HxCDD		
	Naphtalène		endo sulfan sulfate		12,3,4,6,7,8-HpCDD		
	Phénanthrène		endo sulfan total		OCDD		
	Pyrène		trifluraline		2,3,7,8-TCDF		
	Acénaphthylène	Phénols et dérivés	nonylphénols		12,3,7,8-PeCDF		
	Acénaphthène		octylphénols		2,3,4,7,8-PeCDF		
	Fluorène		pentachlorophénol		12,3,4,7,8-HxCDF		
	Dibenzo(a,h)anthracène						

Quelques résultats:

En l'absence de NQE sédiments, comparaison avec les seuils N1 et N2 de l'arrêté du 09/08/2006 relatif aux niveaux à prendre en compte lors d'une analyse de rejets dans les eaux de surface ou sédiments marins.

$\leq$ N1 : impact potentiel en principe jugé d'emblée neutre ou négligeable, les teneurs étant « normales » ou comparables au bruit de fond environnemental.

$>$ N1 et $\leq$ N2 : investigation complémentaire peut s'avérer nécessaire en fonction du projet considéré et du degré de dépassement du niveau N1.

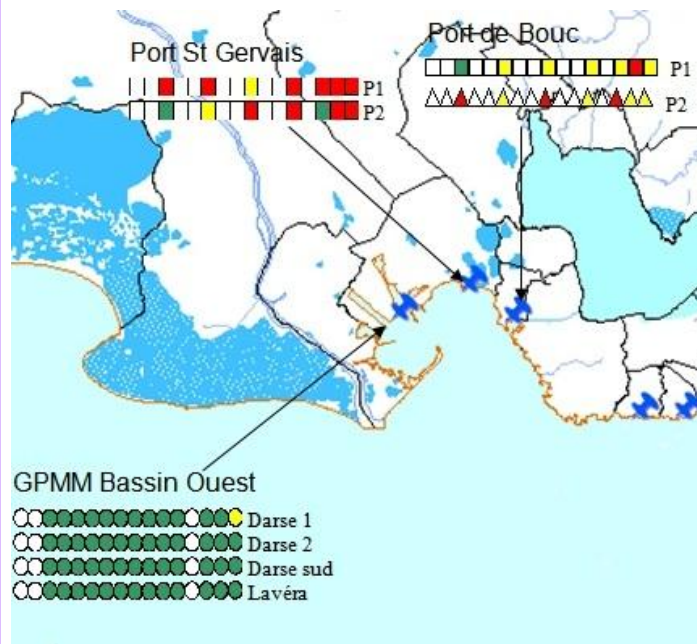
$>$ N2 : investigation complémentaire généralement nécessaire car des indices notables laissent présager un impact potentiel négatif de l'opération

Seuls les résultats d'analyses $>$ N1 sont présentés.

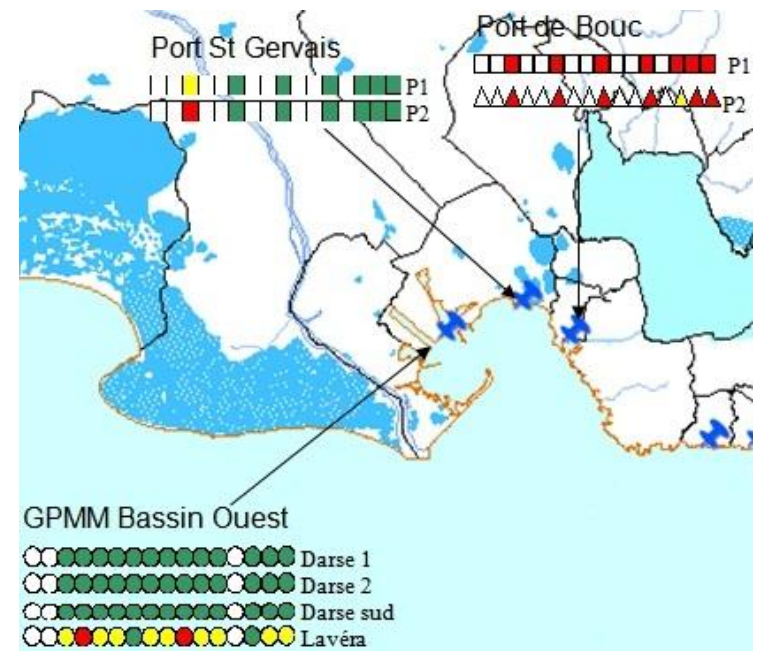
Seuils N1 et N2

sur sédiment sec analysé sur la fraction inférieure à 2 mm									
FAMILLES	Paramètres	unités	N1	N2	FAMILLES	Paramètres	unités	N1	N2
METAUX	Arsenic	mg/kg	25	50	Hydrocarbures Aromatiques Polycycliques	Naphtalène	µg/kg	160	1130
	Cadmium	mg/kg	1,2	2,4		Acénaphtylène	µg/kg	40	340
	Chrome	mg/kg	90	180		Acénaphène	µg/kg	15	260
	Cuivre	mg/kg	45	90		Fluorène	µg/kg	20	280
	Mercure	mg/kg	0,4	0,8		Phénanthrène	µg/kg	240	870
	Nickel	mg/kg	37	74		Anthracène	µg/kg	85	590
	Plomb	mg/kg	100	200		Fluoranthène	µg/kg	600	2850
	Zinc	mg/kg	276	552		Pyrène	µg/kg	500	1500
Polychloro biphényles	PCB 28	µg/kg	25	50		Benzo(a)anthra cène	µg/kg	260	930
	PCB 52	µg/kg	25	50		Chrysène	µg/kg	380	1590
	PCB 101	µg/kg	50	100		Benzo(b)fluora nthène	µg/kg	400	900
	PCB 118	µg/kg	25	50		Benzo(k)fluora nthène	µg/kg	200	400
	PCB 138	µg/kg	50	100		Benzo(a)pyrèn e	µg/kg	430	1015
	PCB 153	µg/kg	50	100		Dibenzo(a,h)an thracène	µg/kg	60	160
	PCB 180	µg/kg	25	50		Benzo(g,h,i)pér ilène	µg/kg	1700	5650
Organostan niques	TBT	µg/kg	100	400		Indéno(1,2,3- cd)pyrène	µg/kg	1700	5650

Cuivre



Mercure



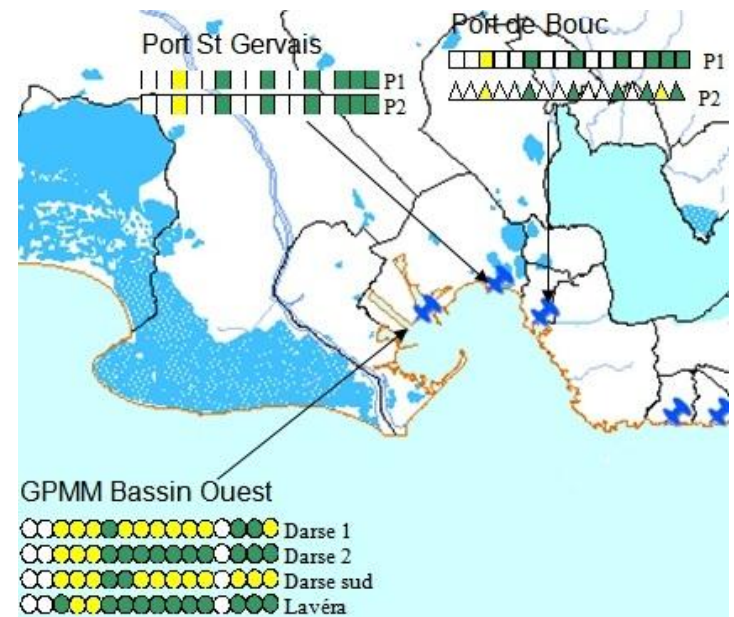
Nickel

Qualité chimique des sédiments : (Selon l'arrêté du 9 août 2006)

- ≤N1
- N1 < x < N2
- ≥N2
- pas de mesure

Année d'étude :

97 98 99 00 01 02 03 04 05 06 07 ...



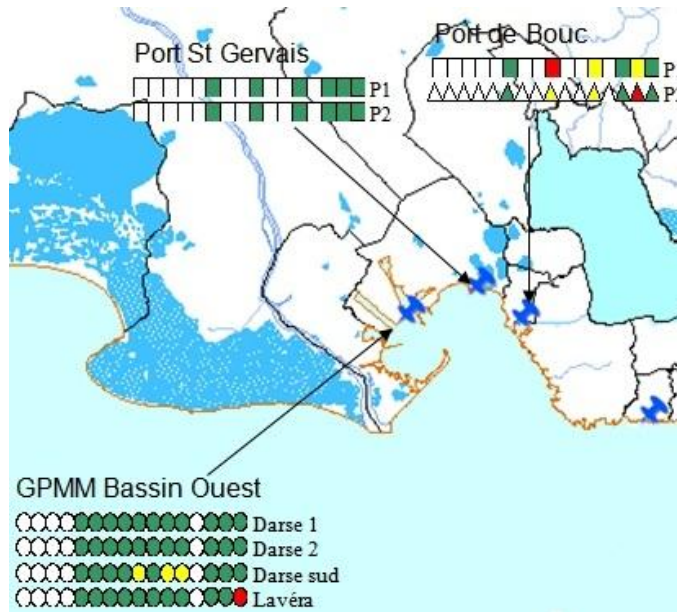
The map displays the GPM Bassin Ouest, a coastal area with several sampling stations marked by colored dots. A legend at the top identifies the stations and the water quality indicators used. The legend includes:

- Port St Gervais:** A series of colored dots (red, yellow, green) representing different sampling stations.
- Port de Bouc:** A series of colored dots (red, yellow, green) representing different sampling stations.
- Legend:**
 - P1:** Red dots
 - P2:** Green dots
 - P3:** Yellow dots
 - P4:** Red dots
 - P5:** Green dots
 - P6:** Yellow dots
 - P7:** Red dots
 - P8:** Green dots
 - P9:** Yellow dots
 - P10:** Red dots
 - P11:** Green dots
 - P12:** Yellow dots
 - P13:** Red dots
 - P14:** Green dots
 - P15:** Yellow dots
 - P16:** Red dots
 - P17:** Green dots
 - P18:** Yellow dots
 - P19:** Red dots
 - P20:** Green dots
 - P21:** Yellow dots
 - P22:** Red dots
 - P23:** Green dots
 - P24:** Yellow dots
 - P25:** Red dots
 - P26:** Green dots
 - P27:** Yellow dots
 - P28:** Red dots
 - P29:** Green dots
 - P30:** Yellow dots
 - P31:** Red dots
 - P32:** Green dots
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 - P36:** Yellow dots
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 - P251:** Green dots
 - P252:** Yellow dots
 - P253:** Red dots
 - P254:** Green dots

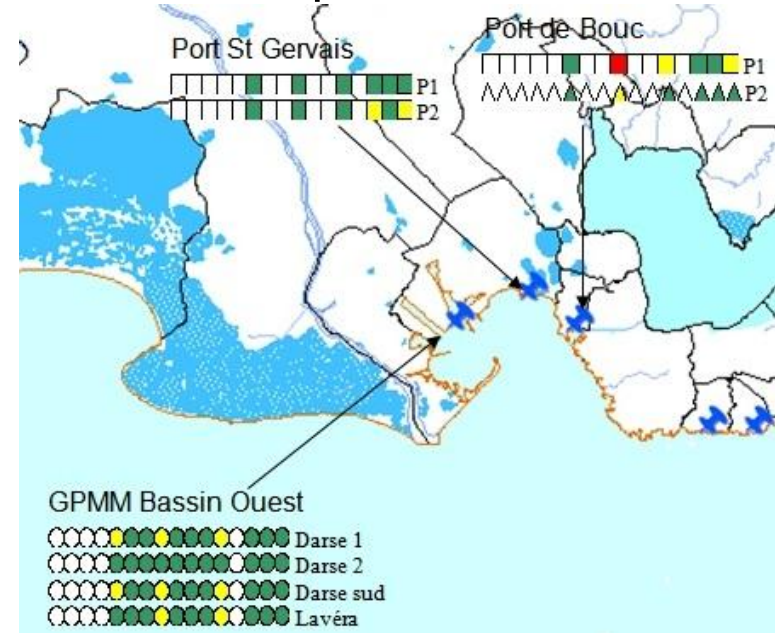
The map illustrates the GPM Bassin Ouest, a coastal area with various sampling stations. Two main stations are highlighted: Port St Gervais and Port de Bouc. Each has a corresponding legend with two rows of symbols (P1 and P2) representing different sampling points. The map also shows a detailed view of the GPM Bassin Ouest, which includes four specific areas: Darse 1, Darse 2, Darse sud, and Lavéra. Each of these areas has its own legend with two rows of symbols (P1 and P2) representing different sampling points. The map uses a color-coded system to represent different types of sampling points, with green and yellow symbols indicating specific locations. The map also shows the coastline and the surrounding water bodies.

The map displays the GPM Bassin Ouest, a coastal area with various sampling stations marked by colored symbols. A legend at the top left identifies the symbols for Port St Gervais (P1 and P2) and Port de Bouc (P1 and P2). The legend at the bottom left identifies the symbols for the GPM Bassin Ouest stations: Darse 1, Darse 2, Darse sud, and Lavéra. The map shows the coastline and the location of these stations relative to the GPM Bassin Ouest.

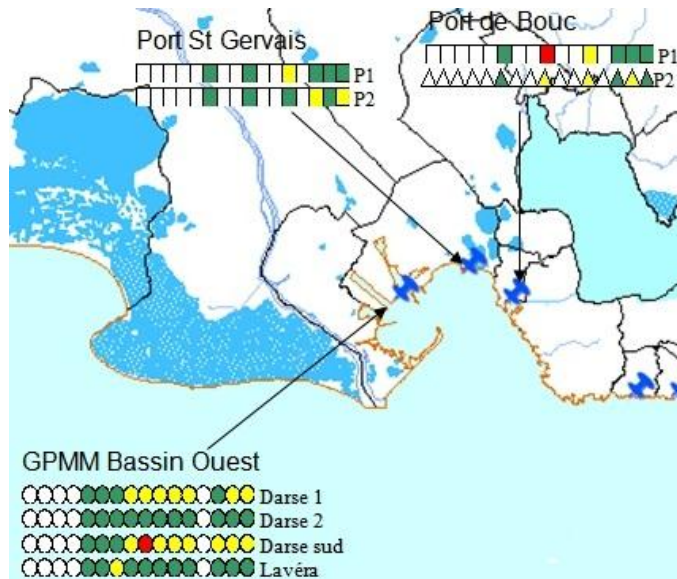
Dibenzo(a,h)anthracène



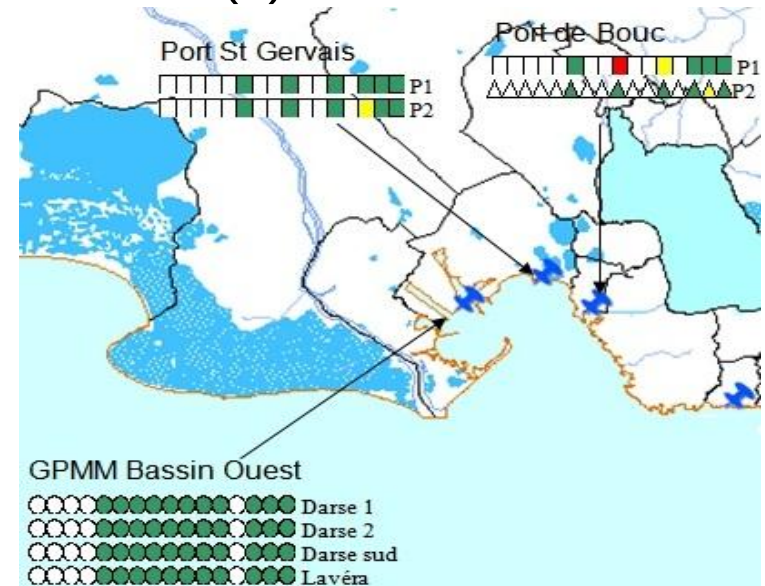
Acénaphthène



Phénanthrène



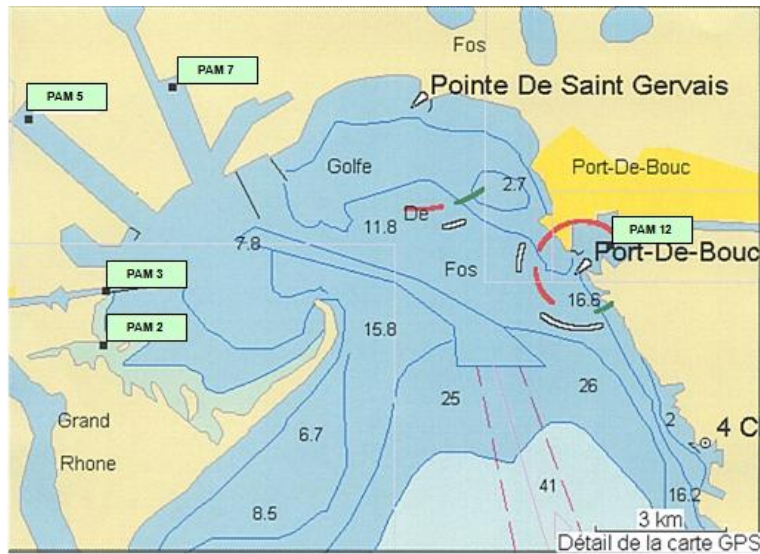
Benzo(a)anthracène



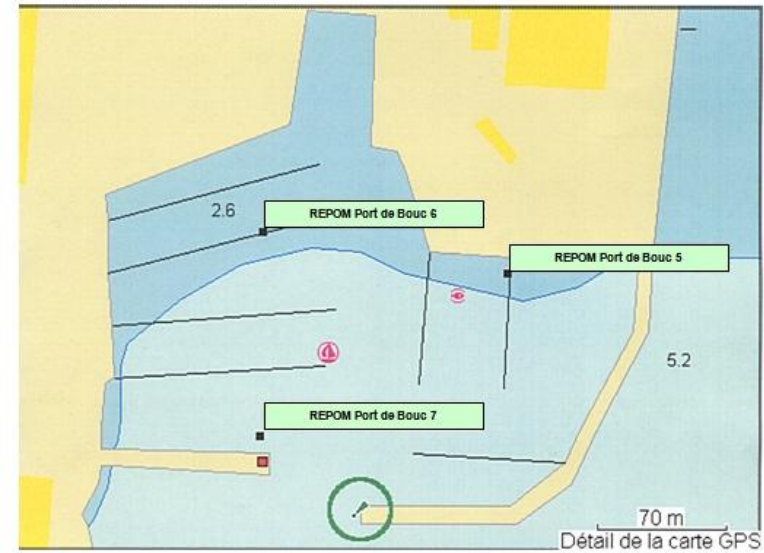
Résultats dans la matrice EAU 2000-2008

Plans d'échantillonnage (REPOM eau)

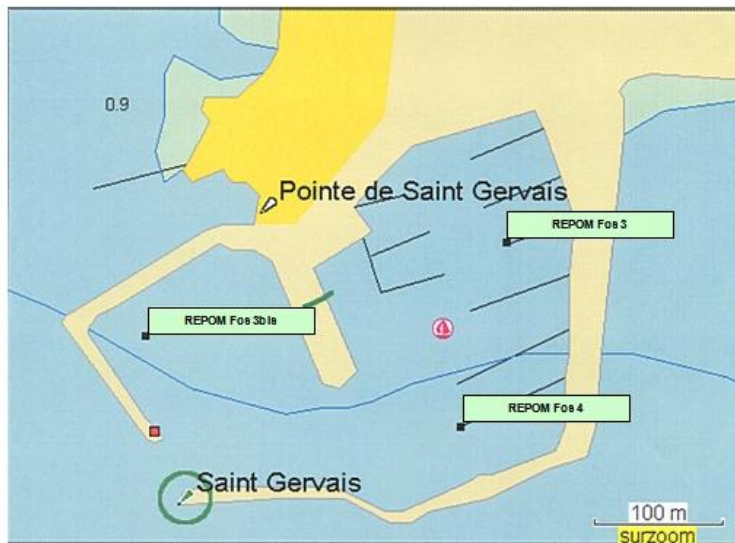
Bassin ouest GPM



Port de Bouc



Port de Fos-St Gervais

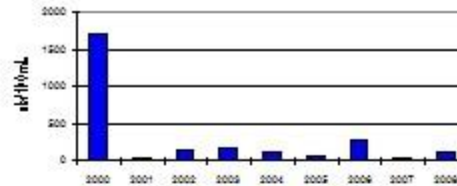


Escherichia coli Période 2000 à 2008

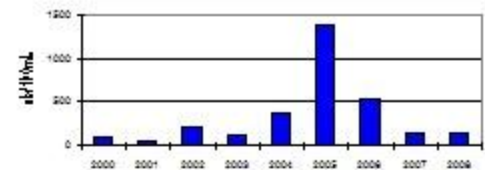
Légende :

■ Concentration moyenne observée au cours de l'année
(Unité: nb/100mL)

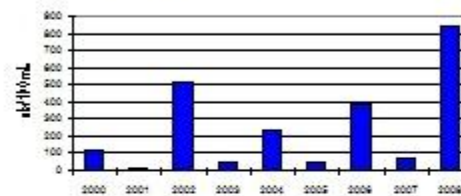
GPMM Bassin Ouest - Station 2



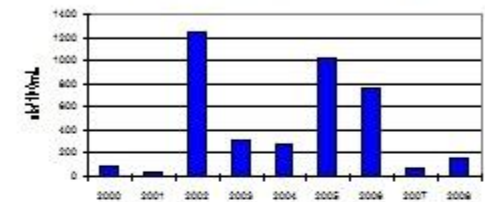
Port de Bouc - Station 6



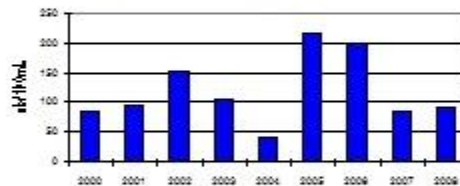
GPMM Bassin Ouest - Station 3



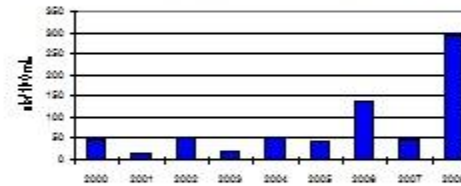
Port de Bouc - Station 7



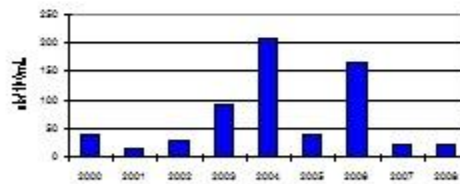
Port St Gervais - Station 3



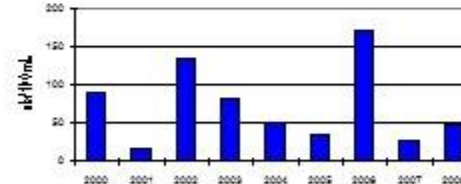
GPMM Bassin Ouest - Station 5



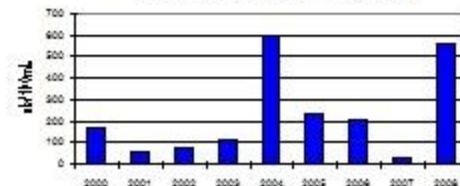
Port St Gervais - Station 3bis



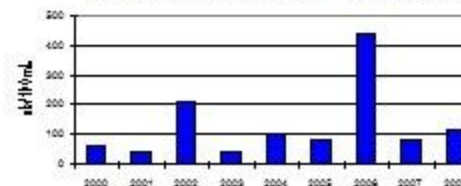
GPMM Bassin Ouest - Station 7



Port St Gervais - Station 4



GPMM Bassin Ouest - Station 12

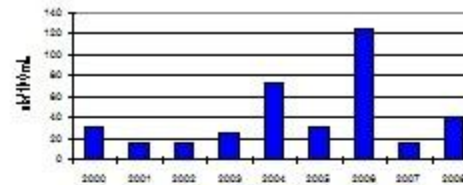


Stréptocoques fécaux Période de 2000 à 2008

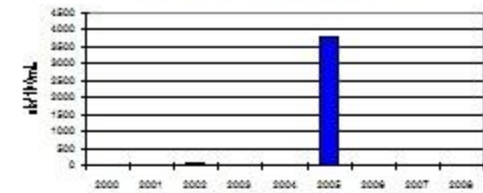
Légende :

 Concentration moyenne observée au cours de l'année
(Unité: nb/100mL)

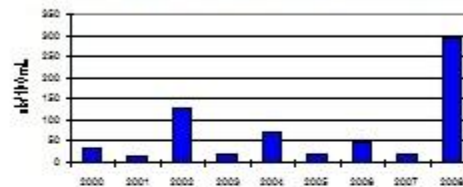
GPMM Bassin Ouest - Station 2



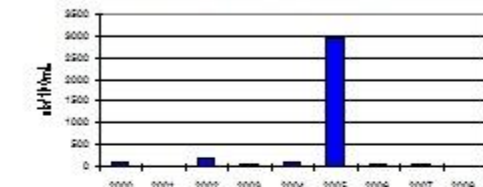
Port de Bouc - Station 6



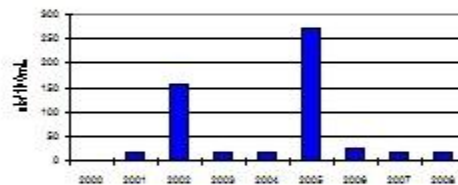
GPMM Bassin Ouest - Station 3



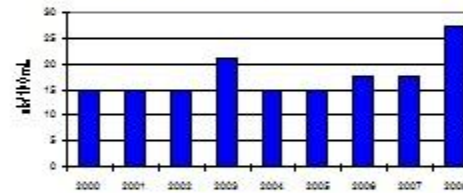
Port de Bouc - Station 7



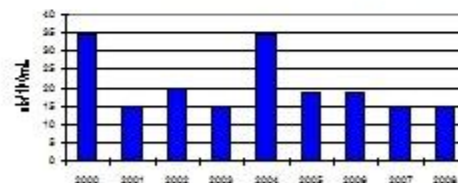
Port St Gervais - Station 3



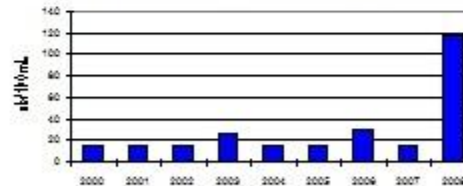
GPMM Bassin Ouest - Station 5



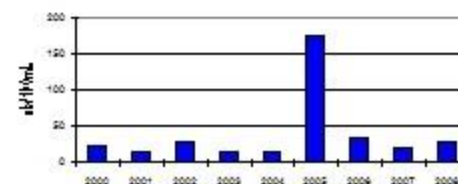
Port St Gervais - Station 3bis



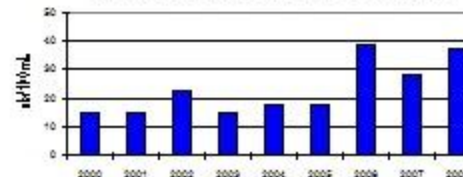
GPMM Bassin Ouest - Station 7



Port St Gervais - Station 4



GPMM Bassin Ouest - Station 12

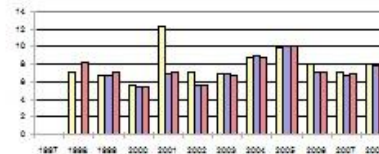


Oxygène dissous (1997 à 2008)

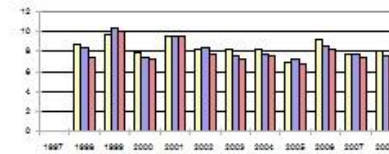
Légende :

- Oxygène dissous moyen en surface
 - Oxygène dissous moyen en demi-fond
 - Oxygène dissous moyen en fond
- (Unité : mg/L)

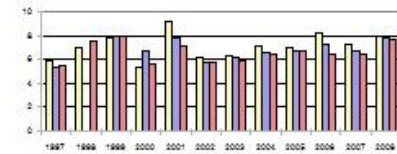
Port St Gervais - Station 3bis



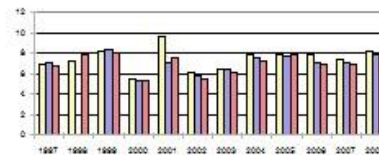
GPMM Bassin Ouest - Station 5



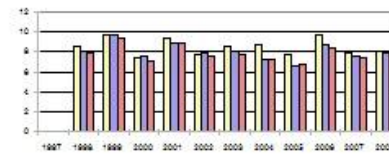
Port de Bouc - Station 6



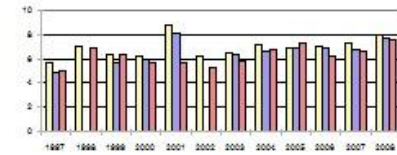
Port St Gervais - Station 4



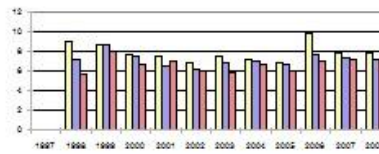
GPMM Bassin Ouest - Station 7



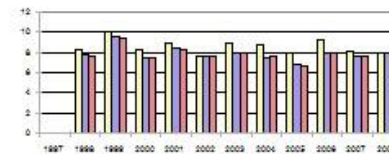
Port de Bouc - Station 7



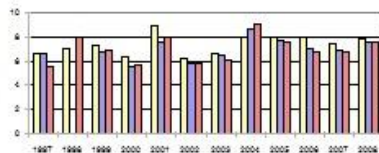
GPMM Bassin Ouest - Station 2



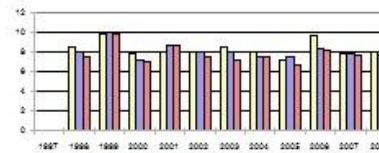
GPMM Bassin Ouest - Station 12



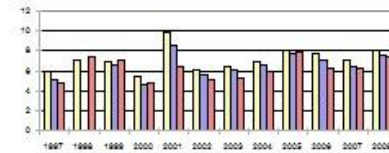
Port St Gervais - Station 3



GPMM Bassin Ouest - Station 3



Port de Bouc - Station 5

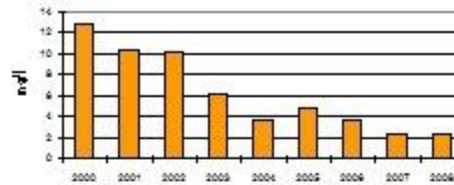


Matières en suspension (2000 à 2008)

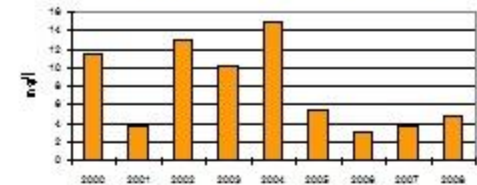
Légende :

 Concentration moyenne observée au cours de l'année
(Unité: mg/L)

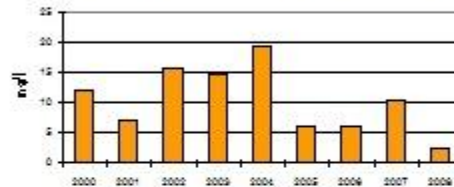
Port St Gervais - Station 4



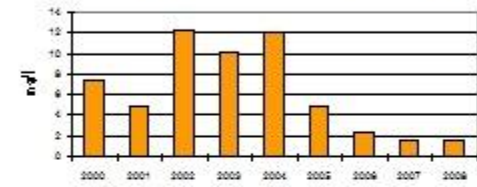
GPMM Bassin Ouest - Station 7



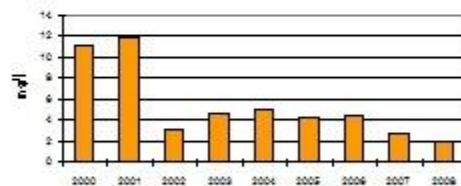
GPMM Bassin Ouest - Station 2



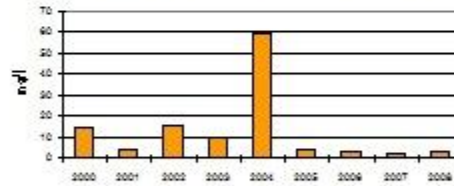
GPMM Bassin Ouest - Station 12



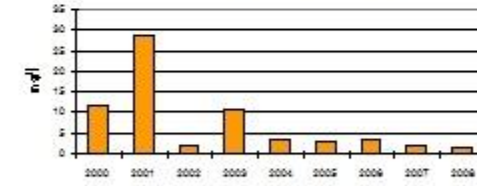
Port St Gervais - Station 3



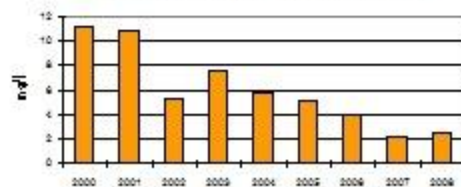
GPMM Bassin Ouest - Station 3



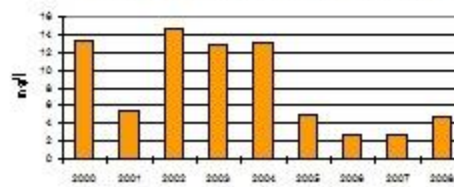
Port de Bouc - Station 6



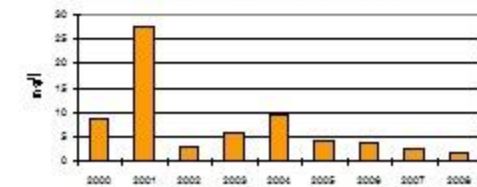
Port St Gervais - Station 3bis



GPMM Bassin Ouest - Station 5



Port de Bouc - Station 7

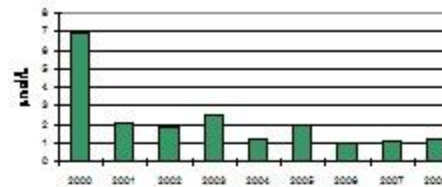


NH4 (2000 à 2008)

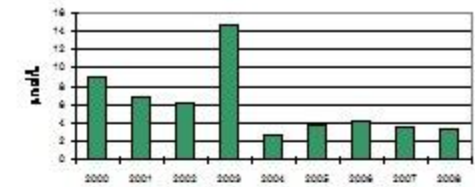
Légende :

 Concentration moyenne observée au cours de l'année (Unité: $\mu\text{mol/L}$)

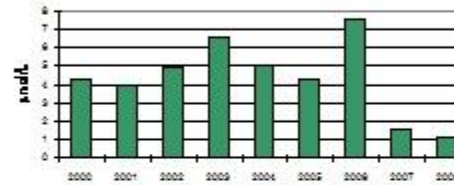
Port St Gervais - Station 4



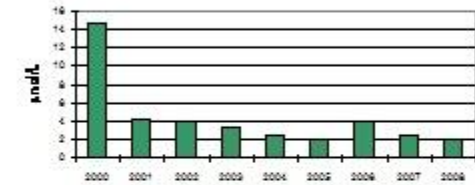
GPMM Bassin Ouest - Station 7



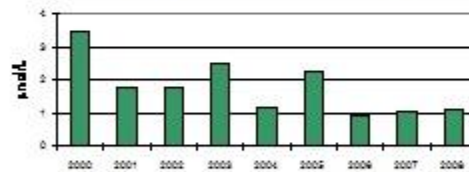
GPMM Bassin Ouest - Station 2



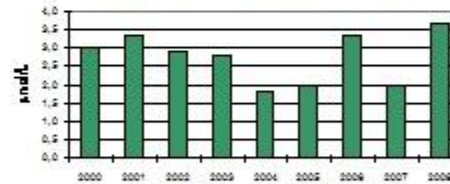
GPMM Bassin Ouest - Station 12



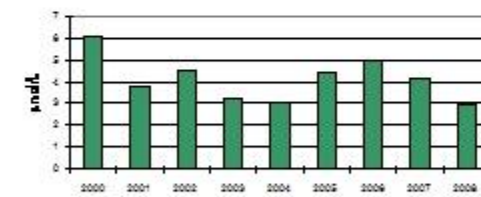
Port St Gervais - Station 3



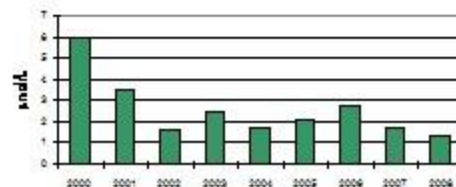
GPMM Bassin Ouest - Station 3



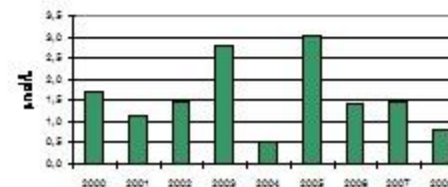
Port de Bouc - Station 6



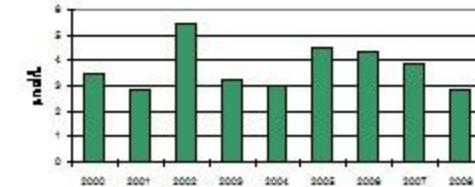
Port St Gervais - Station 3bis



GPMM Bassin Ouest - Station 5



Port de Bouc - Station 7

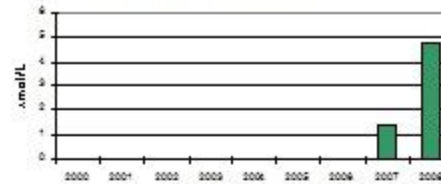


NO3 (2000 à 2008)

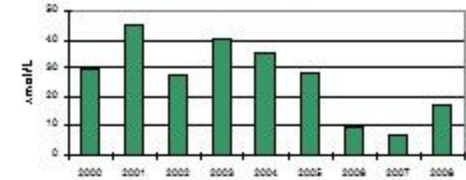
Légende :

 Concentration moyenne observée au cours de l'année
(Unité: $\mu\text{mol/L}$)

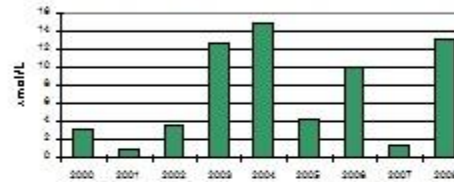
Port St Gervais - Station 4



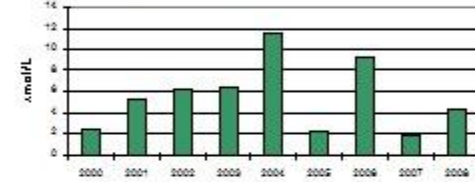
GPMM Bassin Ouest - Station 7



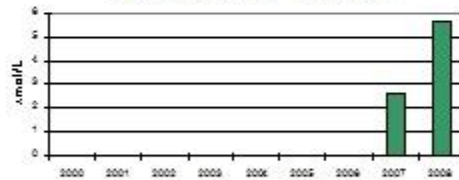
GPMM Bassin Ouest - Station 2



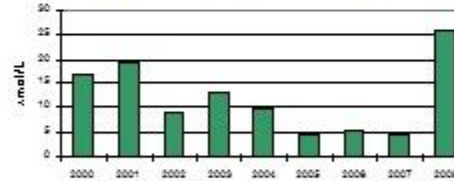
GPMM Bassin Ouest - Station 12



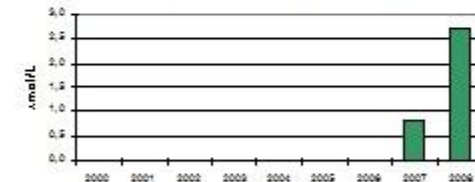
Port St Gervais - Station 3



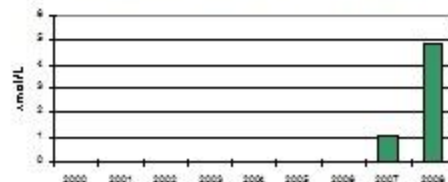
GPMM Bassin Ouest - Station 3



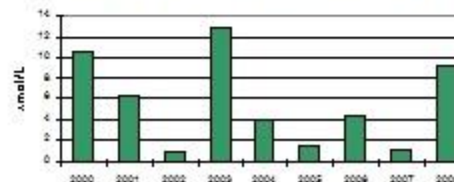
Port de Bouc - Station 6



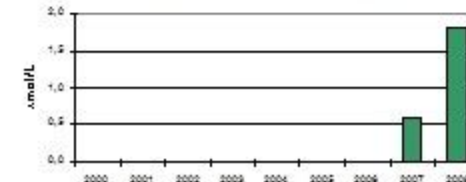
Port St Gervais - Station 3bis



GPMM Bassin Ouest - Station 5



Port de Bouc - Station 7

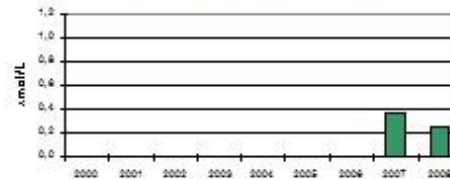


PO4 (2000 à 2008)

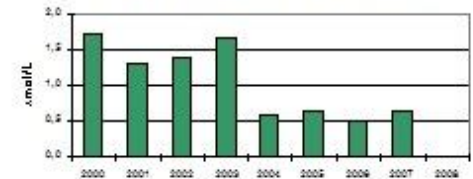
Légende :

 Concentration moyenne observée au cours de l'année
(Unité: $\mu\text{mol/L}$)

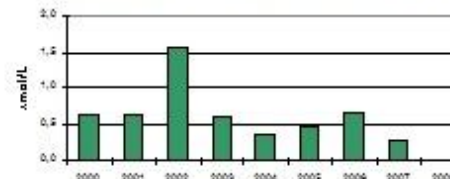
Port St Gervais - Station 4



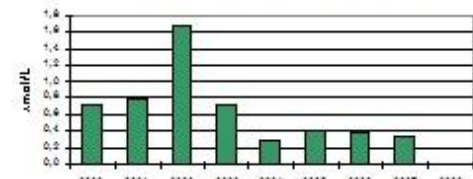
GPMM Bassin Ouest - Station 7



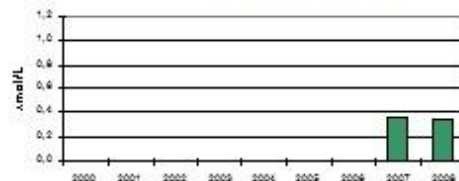
GPMM Bassin Ouest - Station 2



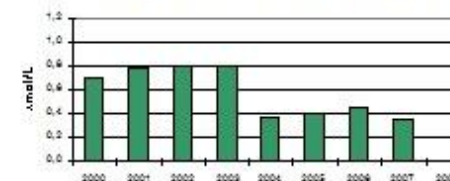
GPMM Bassin Ouest - Station 12



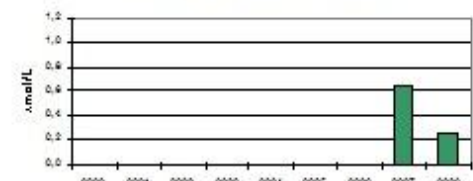
Port St Gervais - Station 3



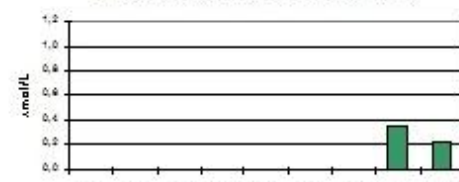
GPMM Bassin Ouest - Station 3



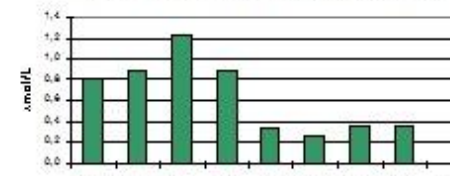
Port de Bouc - Station 6



Port St Gervais - Station 3bis



GPMM Bassin Ouest - Station 5



Port de Bouc - Station 7

