

Habitat Mapping

National Status Report, France

Preliminary Report, Avril 2003

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This report is a preliminary report about habitat mapping and physical data commonly used in habitat mapping sequence. At the present time, it is not exhaustive. Only benthic habitats of metropolitan waters have been investigated.

The biological data inventory is well advanced in Brittany. On the other coasts, namely the channel and atlantic ones, only the main data are shown. A biological data inventory is starting along the mediterranean coast where a lot of maps are available concerning mainly posidonia beds.

Organisation, name of contact person	Geographical coverage (country, region)	Project title (code)	Date of work, expected year of reporting	Techniques used (e.g. acoustics, ground-truthing)	Datasets generated (e.g. bathymetry, physical habitat, biological, photographic)	Brief description of work (including depth range)	Outputs: Reports, publications, maps, reference lists	Classification used; local (within project), national (state), EUNIS	Targeted end-users
SHOM / GG	French metropolitan waters (data available on other seas)	BDBS, BDTPO and BDPS databases	Data acquisitions since XIXe century; the most part is digitized	Subtidal : multibeam, echosounding, lead-line survey Intertidal (not complete): topography photogrammetry	Bathymetric and topographic measurements	All depth range	Bathymetric plotting sheet and point geo-referenced data base Annex 1- figure 1		Drawing up of navigation charts, scientists
SHOM and partly IFREMER/SISMER Bellouis Michel	French metropolitan waters Annex 1- figure 2 and 3 (data available on others seas)	BDSIGMA (SHOM), SEXTANT data server (IFREMER)	French metropolitan waters digitized since 2000	Manual interpretation resulting from BDBS, BDTPO and BDPS data bases	Isobaths (navigation safe)	All depth range	Geo-referenced isobaths (5, 10, 20, 30, 50, 100, 200 m) and polygons		Coastal managers and scientists
IFREMER Populus Jacques	Intertidal waters (scarce) Annex 2 figure 1	LIDAR	2002-2003	Topographic Lidar	Topography	Intertidal	Geo-referenced data base, isohypse, gridded DTM		Coastal managers and scientists
IFREMER/SISMER Moussa Éric	French EEZ off the continental shelf (data available on others seas) Annex 3 figure 1	IFREMER/SISMER Data Centre	Since 1969	Multibeam bathymetry	Bathymetry, physical habitat	Deep waters	Metadata and data, maps and grids Annex 3 figure 2 and table 1 and 2		Drawing up of navigation charts, scientists
			Since 1991	Bottom imagery					
			Since 2002	Seismic					
Various: CNEXO, BRGM, Universities,	French continental shelf, subtidal zones	Various	Since 1960	Grab samples, coring, Vertical echosounder, submarine photography	Sedimentological maps, low scale maps are geo-referenced on vector form	Intertidal to 200 m	Maps 1/25000 to 1/500000 scale Annex 4 figures 1, 2 & 3	local	Various
IFREMER Augris Claude	French continental shelf, subtidal zones	Geological synthesis on the french continental shelf	Since 1982	Sidescan, multibeam imagery, seismic, submarine video, coring, grab samples	Sedimentological and bedform dynamic mapping	5-30m	Maps 1/15000 to 1/100000 scale Annex 4 figures 1, 2 & 3	local	Various
					Not completely interpreted	5-200 m	Publications Annex 4 figures 4, 5 & 6	local	Various
SHOM Garlan Thierry	French coastal zone (including intertidal areas)	Maps G project	Since 1991	Sidescan, multibeam imagery, seismic, grab samples, old lead observations, cores	Sedimentological and bedform dynamic mapping	Intertidal to 50 m	Annex 5 figure 1	local	Fishermen
Various : Universities, Marine laboratories, IFREMER Guillaumont Brigitte	Low scale maps: French territorial waters (not complete) ; High scale maps (REBENT): intertidal and shallow bottom (Annexe 6, Figure 1 & 2); Mediterranean coast inventory is under development	Various, IFREMER REBENT project	Data acquisition since 1960, first Rebent digitized product: 2003 for Brittany ; national Rebent planification under development	Low scale and old data: grab and dredges samples; submarine video; photographs; Current high scale mapping: (REBENT) based on acoustic imagery; Orthophotographs; DTM; ground-truthing.	Biological samples or photographs, maps of biocenosis	Low scale data: 10m to 200m ; High scale data: intertidal to 30-50 m.	Maps, publications REBENT : digitization and synthesis of old data (low scale, territorial sea) high scale mapping of biocenosis, geo-referenced maps and databases	Various EUNIS (REBENT)	Coastal managers and scientists (modelling and long term changes),

Annex 1

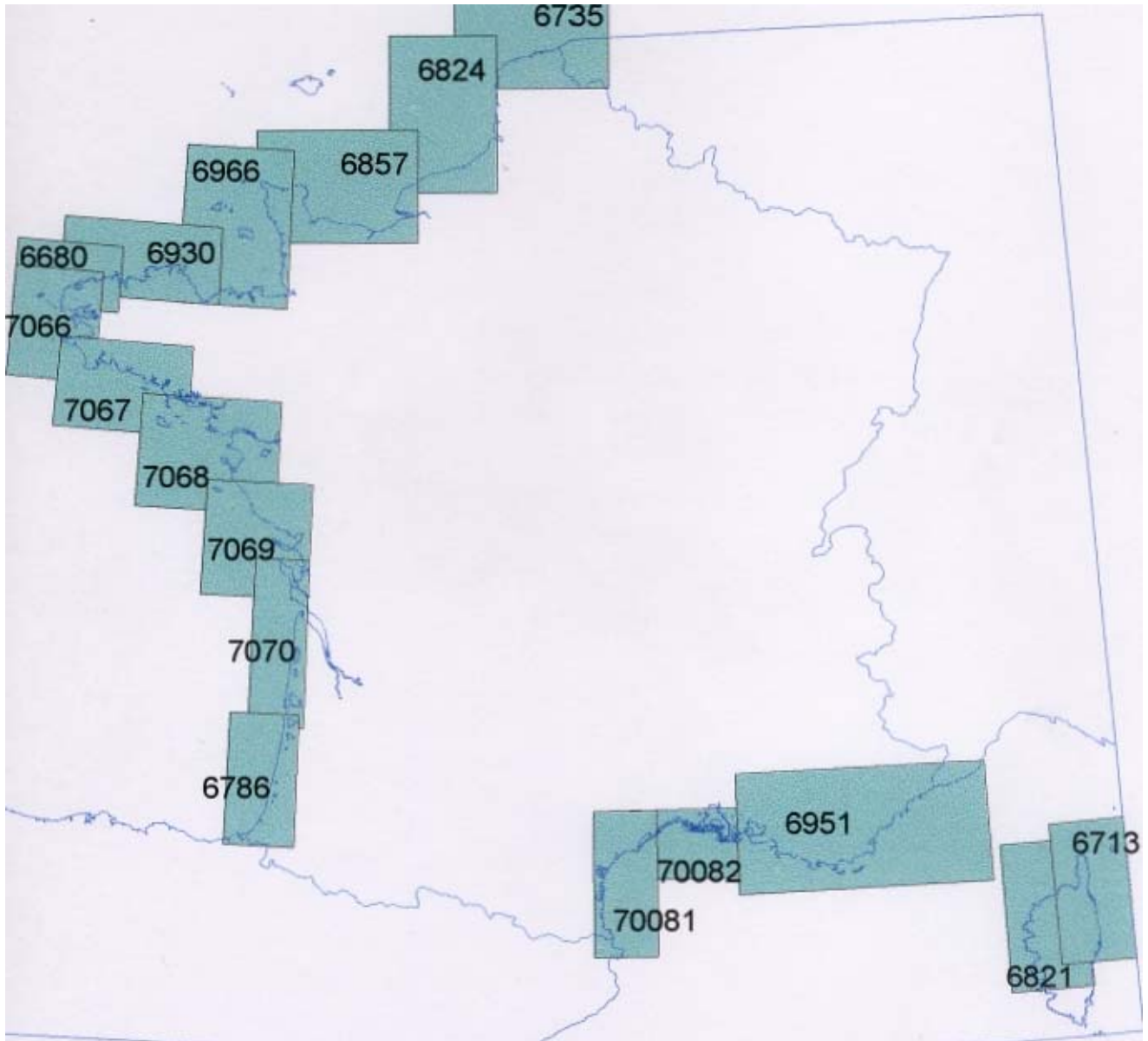
Figure 1: example of SHOM* BDBS data



* Address: EPSHOM (Établissement Principal du Service Hydrographique Océanographique de la Marine): 13 rue du Chatellier, BP30316, 29603 BREST CEDEX

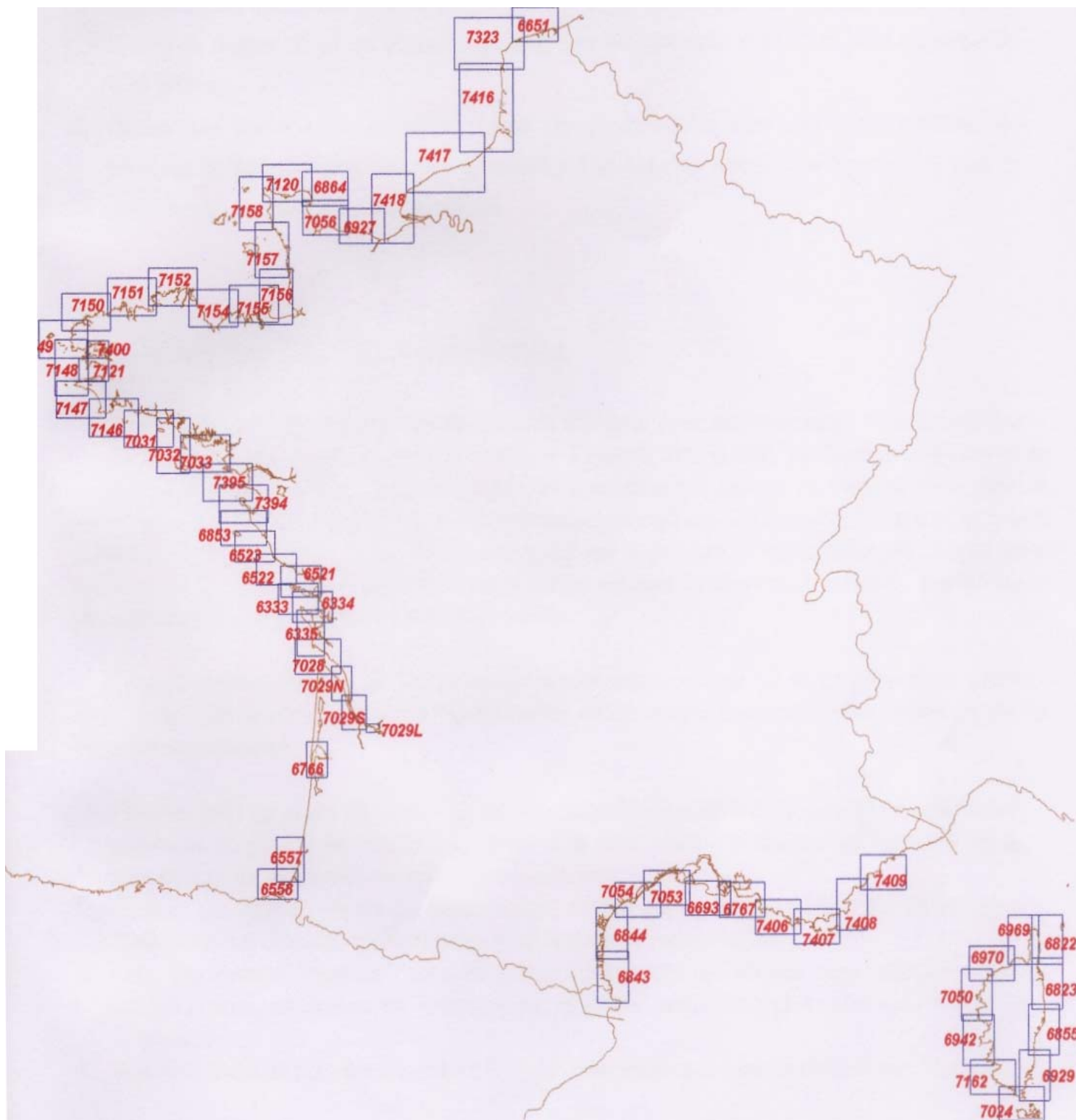
Annex 1

**Figure 2: geo-referenced isobaths and bathymetric polygons
(SHOM Marine charts 1 : 150 000)**



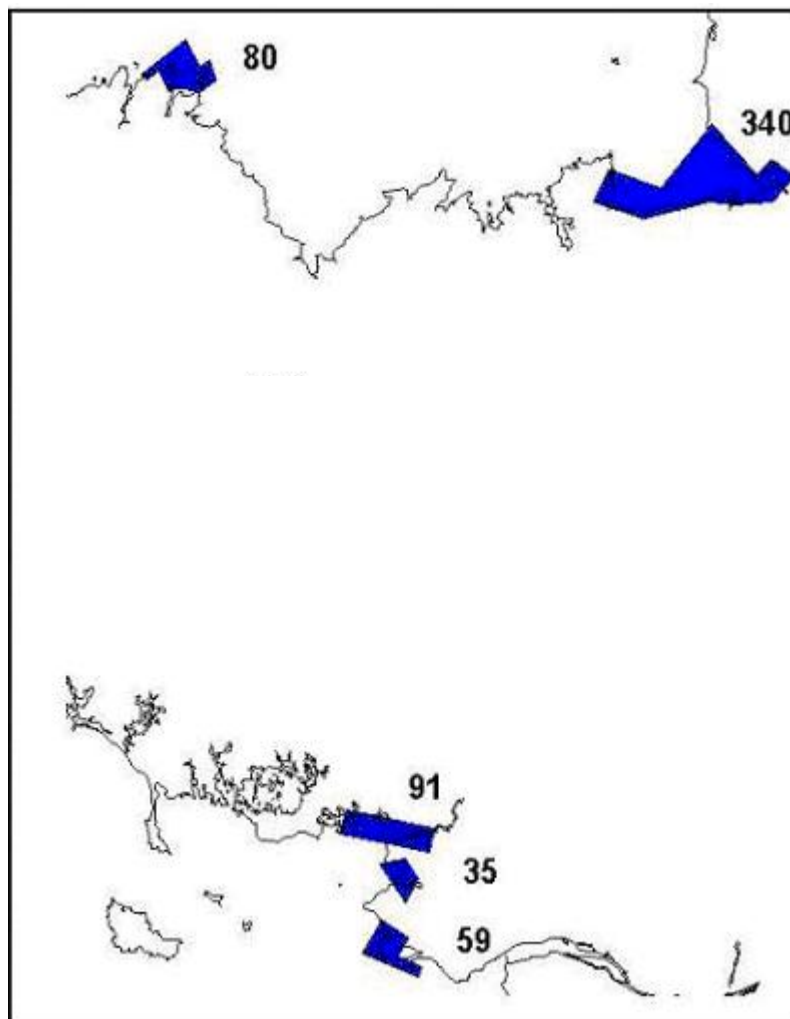
Annex 1

Figure 3: geo-referenced isobaths and bathymetric polygons (SHOM marine charts 1: 50 000)



Annex 2

**Figure 1: topographic Lidar coverage (km²)
Tidal area, Brittany, France
Ifremer, 2002**



Annex 3

Data Centre IFREMER/SISMER

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1. Data Centre description

SISMER (Systèmes d'Informations Scientifiques pour la Mer) Data Centre (www.ifremer.fr/sismer) has the national responsibility of archiving systematically the national data and meta data of:

- Oceanographic information and catalogues
- National Geophysical Data Bank
- National Physical and Chemical Data Bank
- Operational oceanography data management.

Sea cruise information (meta-data) and conventional data collected during national projects are systematically compiled, safeguarded and disseminated. It participates in European and international programmes of long duration and several shorter term national or European projects. Standardised Quality Assurance procedures data formatting and checking, based on IOC and ICES recommendations, are systematically performed on the data archived at SISMER. The data products and services include data and value added gridded fields and maps disseminated on internet and or on Cdrom databases. Future prospects are directed towards the operational management of biological and fisheries data.

2. Oceanographic Information and Catalogues

Directory	Internet address	Comment
ROSCOP/CSR Cruise summary reports	www.ifremer.fr/sismer/catal/campagne/campagna.htm	annual dissemination to ICES, WDCs & JODC (Pacific subset)
EDMED/MEDI Marine Environmental Data Sets	www.ifremer.fr/sismer/catal/base/basea.htm	Sending to BODC for integration in the European directory
SEA-SEARCH	www.sea-search.net/	Oceanographic and Marine Data & Information in Europe

Table I: permanent catalogues fed by SISMER

3. National Geophysical Data bank

<http://www.ifremer.fr/sismer/program/geophys/geow3a.html>

SISMER archives the raw data and calibration parameters collected on board of the research vessels. The data are transmitted directly from the ships by GENAVIR, a subsidiary of IFREMER (CNEXO before 1984), and by the French Polar Institut (Institut Polaire Français Paul Emile Victor, IPEV) under the responsibility of the chief scientists. These data are archived since 1969 and content of the archives is given in table II, by decades of data collection.

Data Type/Decade	1969-1978	1979-1988	1989-1998	1999->
Multibeam bathymetry	13	141	122	61
Vertical Bathymetry	97	145	110	104
Gravity	36	69	102	90
Magnetics	70	108	74	23
Imagery (*)			80	58
Seismics (**)				1

Table II: Geophysical data archived by time period of the observations
(*) starting in 1991 ; (**) starting in 2002

As shown in Fig. 1, the data hold by SISMER cover all oceans, continental margins and deep-sea sedimentary basins. About 10 millions of km² of seafloor of multibeam echosounder survey are archived. All the French metropolitan Exclusive Economic Zone off the continental shelf is covered. Large parts of the Exclusive Economic Zones of the French overseas territories are already covered and their surveys are in progress.

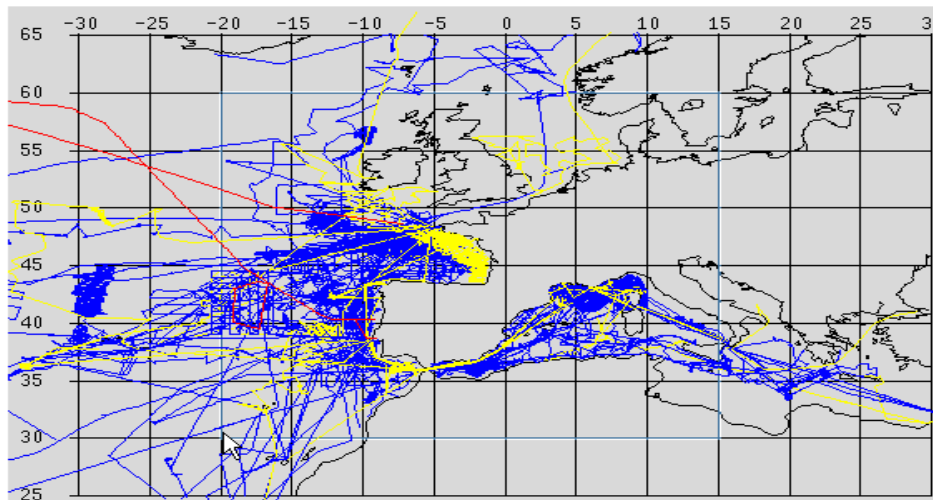


Fig. 1: Space distribution of the archived French geophysical data (North East Atlantic and Mediterranean sea)

A series of Quality Checks related to the following items are applied before archiving at SISMER and for the archiving:

- completeness of data and metadata, data format, time and position of data
- detection of errors (min-max, picks), data consistency (comparison of values at track crosses)

These Quality Checks are included since September 2002 in the CARAIBES data processing software of IFREMER. For further information on this software and its conditions of availability, refer to http://www.ifremer.fr/flotte/equipements_sc/logiciels_embarques/index.html.

Data products (maps and gridded fields) are available on line (fig 2) or on Cdrom databases.

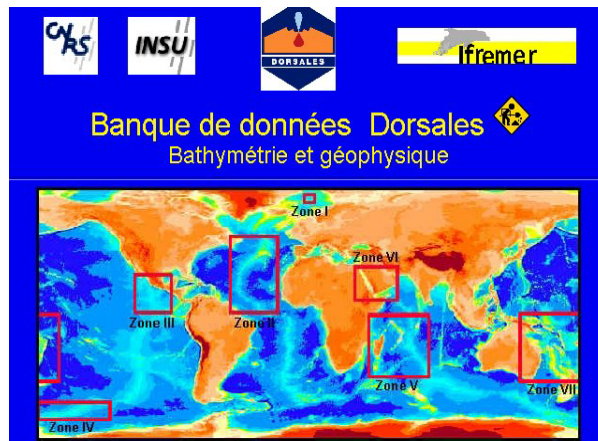


Fig. 2: Maps and gridded fields server from the DORSALES/RIDGE project (<http://www.ifremer.fr/sismer/program/dorsale/>)

Other geophysical surveys collected by vessels of other French organizations are described in the cruise summary reports. Data not hold by SISMER can be requested to the chief scientists and their laboratories.

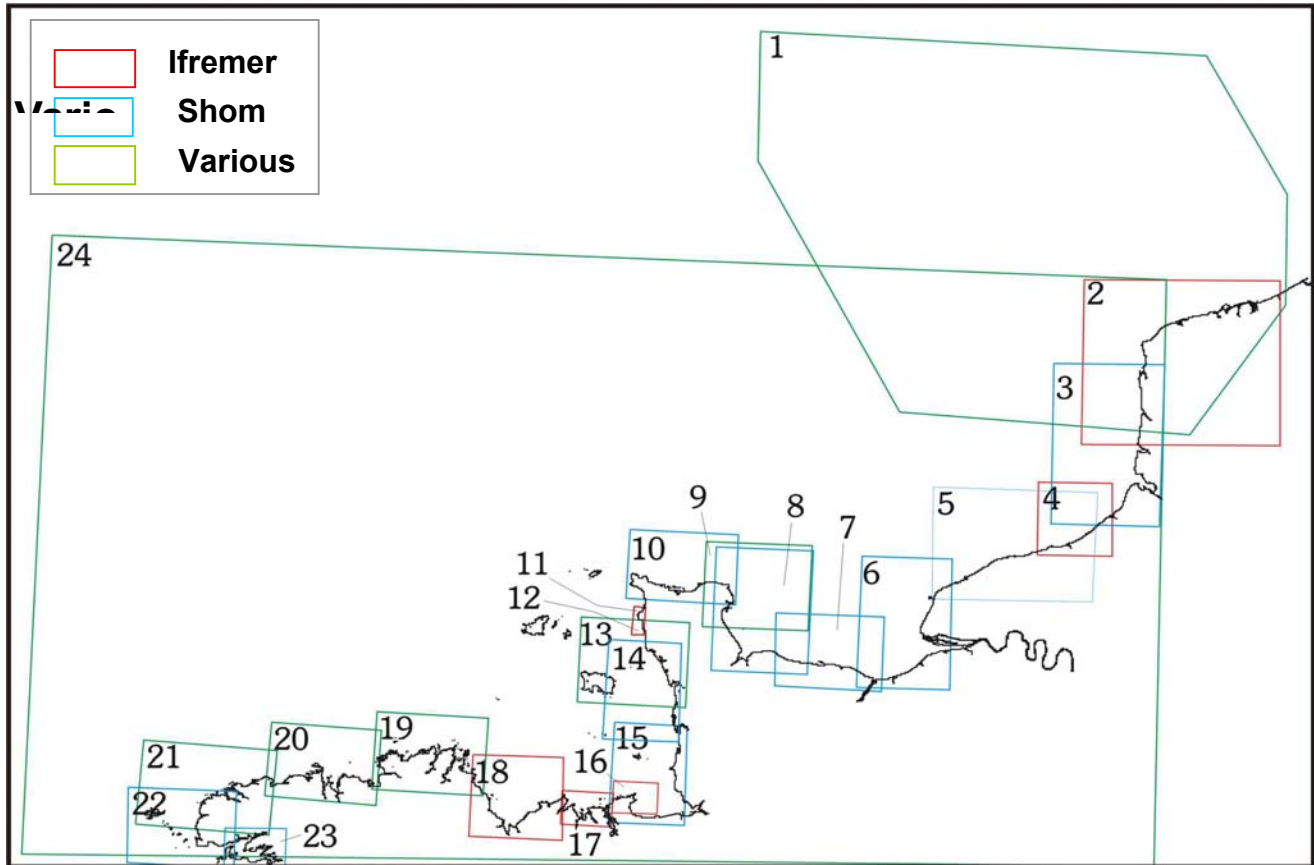
4. Others data

- National Physical and Chemical Data Bank (<http://www.ifremer.fr/sismer/program/phys/donocepa.htm>)
- Operational oceanography data management (<http://www.coriolis.eu.org/coriolis/cdc/>)

Annex 4

A. EHRHOLD

**Figure 1: sedimentological and bedform dynamic mapping
Limits of sedimentological maps on Channel coast (Ehrhold, 2002)**

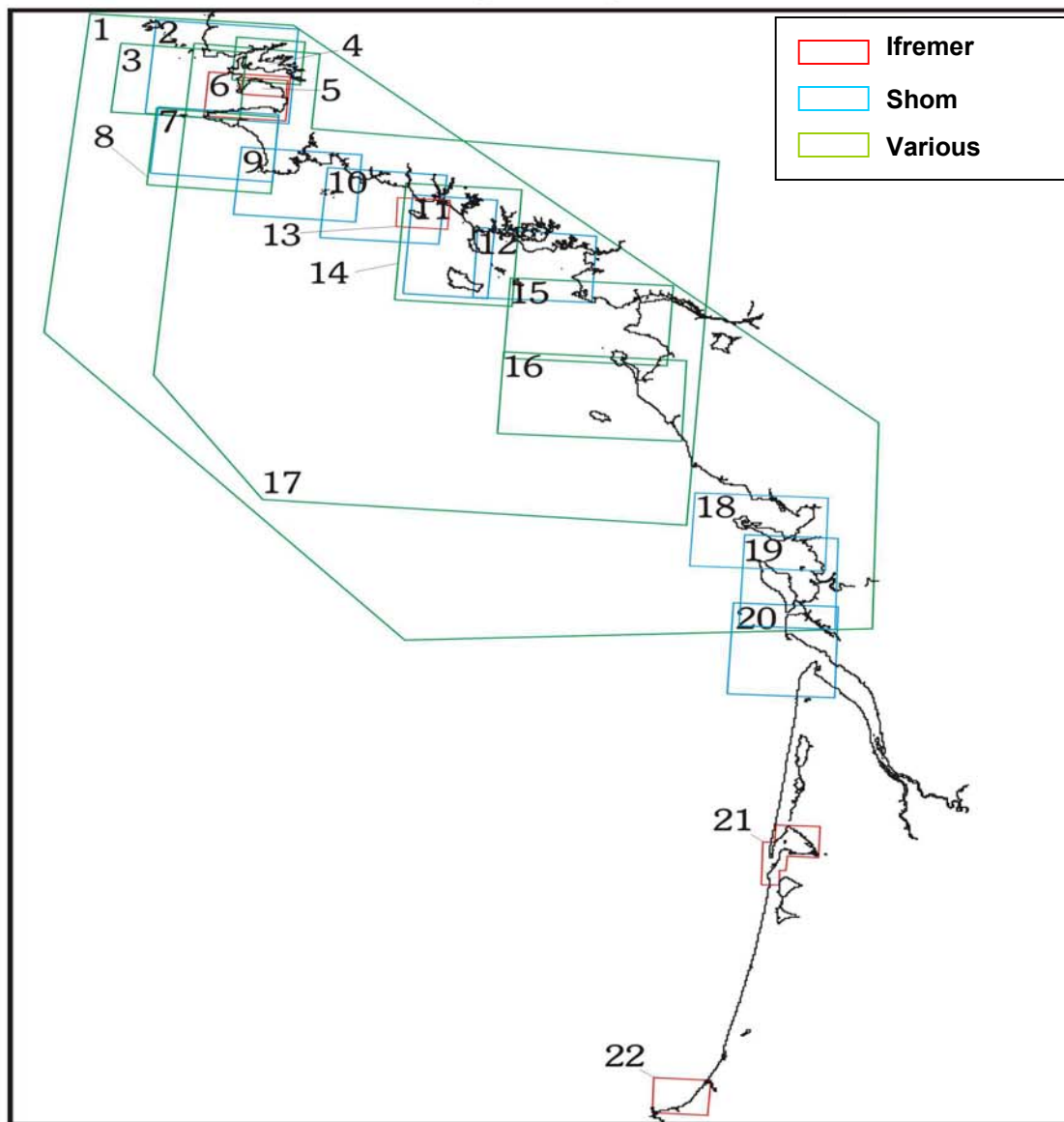


N°	Title	Scale	Auteurs/Date	Editor source
1	Carte extraite du projet GEOSYNTH	-	2002	BRGM
2	Carte des formations superficielles sous-marines du Nord-Pas-de-Calais	1/100 000	Augris et al./1995	Ifremer
3	Abords sud de Boulogne-sur-Mer - 7416G	1/75 000	Bizien/2000	Epshom
4	Carte morpho-sédimentaire entre Dieppe et le Tréport	1/150 000	Augris et al./1993	Ifremer
5	Abords de Fécamps et de Dieppe - 7417G	1/75 000	in project	Epshom
6	Abords du Havre et d'Antifer - 7418G	1/60 000	Laignel et al./1999	Epshom
7	De la pointe de la Percée à Ouistreham - 7421G	1/50 000	Ehrhold et al./to be published	Epshom
8	De la pointe de Barfleur à la Pointe de la Percée - 7422G	1/50 000	Auffret et al./1995	Epshom
9	Carte sédimentologique sous-marine de St-Vaast-la-Hougue -	1/100 000	Larsonneur/1968	CNEXO
10	Abords de Cherbourg - 7120G	1/50 000	Duval et al./to be published	Epshom
11 to 12	Abords de Flamanville	-	to be published	Ifremer
13	Carte sédimentologique sous-marine de Carteret	1/100 000	Hommeril/1968	CNEXO
14	De la pointe d'Agon au Cap de Carteret - 7157G	1/50 000	in project	Epshom
15	Baie du Mont Saint-Michel - 7156G	1/50 000	Ehrhold et al./to be published	Epshom
16	Carte de répartition de la crépidule et des sédiments superciels	1/25 000	Blanchard et al./1997	Ifremer
17	Carte des formations superficielles sous-marines entre le Cap Frehel et St-Malo	1/20 000	Augris et al./2000	Ifremer
18	Carte extraite de l'Atlas thématique en Baie de Saint-Brieuc	1/100 000	Houlgate/1996	Ifremer
19	Carte sédimentologique sous-marine de Perros-Guirec Guingamp	1/100 000	Cressard/1973	CNEXO
20	Carte sédimentologique sous-marine de Morlaix	1/100 000	Cressard/1973	CNEXO
21	Carte sédimentologique sous-marine de Plabennec	1/100 000	Marec et Hinschberger/1975	CNEXO
22	Du Goulet de Brest à Portsall - Ile d'Ouessant - 7149G	1/50 000	Armand/to be published	Epshom
23	Rade de Brest - 7400G	1/25 000	to be published	Epshom
24	Carte des sédiments superficiels de la Manche	1/500 000	Vaslet et al./1978	BRGM

Annex 4

A. EHRHOLD

Figure 2: sedimentological and bedform dynamic mapping
Limits of sedimentological maps on Atlantic coast (Ehrhold, 2002)

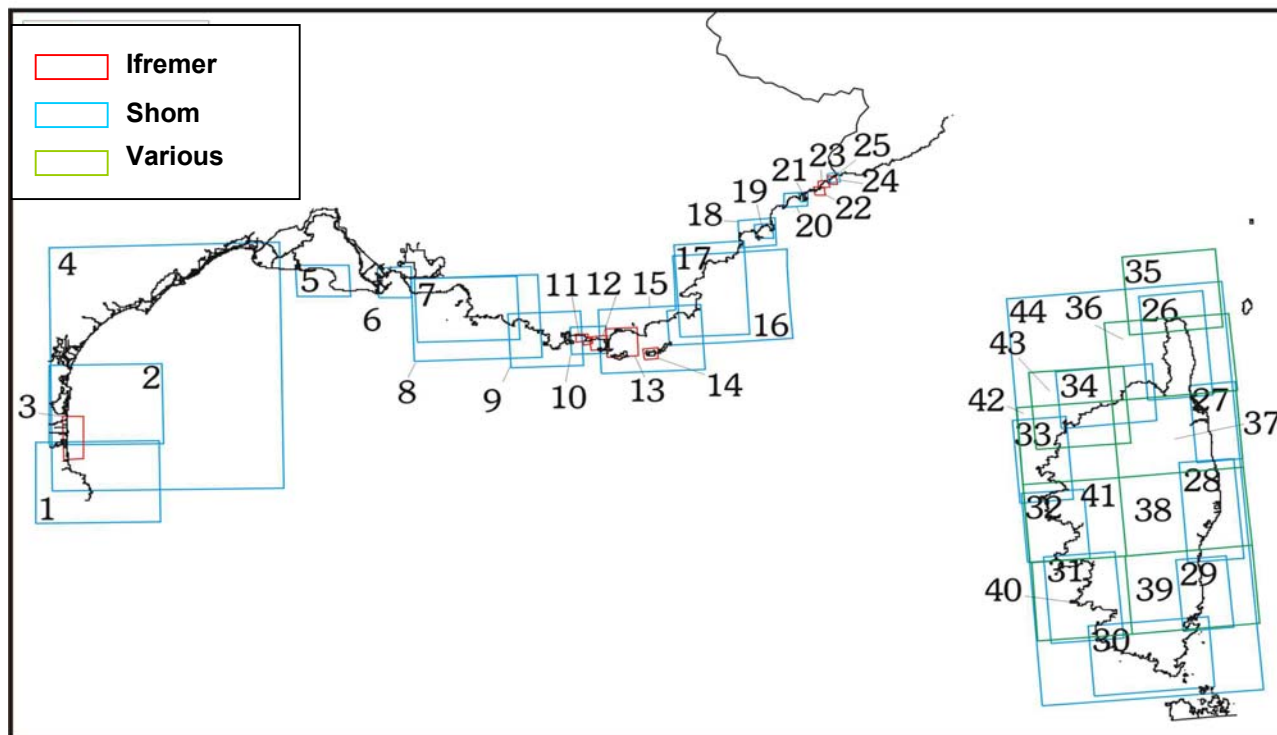


N°	Title	Scale	Auteurs/Date	Editor source
1	Carte des sédiments superficiels du plateau continental du Golfe de Gascogne	1/500 000	Lesueur et al./1986	BRGM/Ifremer
2	De la pointe de St-Mathieu à la Chaussée de Sein - 7172G	1/50 000	Cordier/2001	Epsom
3	Carte sédimentologique sous-marine de Brest	1/100 000	Hinschberger et al./1968	CNEXO
4	Carte sédimentologique de la rade de Brest	-	Fichaut/1996	Report (CUB)
5	Carte des sédiments superficiels de la baie de Douarnenez - partie nord	1/15 000	Augris et al./1988	Ifremer
6	Carte des sédiments superficiels de la baie de Douarnenez	-	Augris et al./to be published	Ifremer
7	Baie d'Audièrene - 7147G	1/50 000	Gabeloteau/1996	Epsom
8	Carte sédimentologique sous-marine de Pont-Croix	1/100 000	Saint-Réquier/1969	CNEXO
9	De la pointe de Penmarc'h à la pointe de Trévignon - 7146G	1/50 000	Lefaou/1996	Epsom
10	De l'île de Penfret au plateau des Birvideaux - 7031G	1/50 000	Ehrhold et al./1994	Epsom
11	De l'île de Groix à Belle-Ile - 7032G	1/50 000	Dupont-Nivet/1998	Epsom
12	De Quiberon au croisic - 7033G	1/50 000	Enet/1999	Epsom
13	Carte des formations superficielles sous-marines aux abords de l'île de Groix	1/20 000	Augris et al./1996	Ifremer
14	Carte sédimentologique sous-marine de Lorient à Quiberon	1/100 000	Pnot et Vanney/1972	CNEXO
15	Carte sédimentologique sous-marine de St-Nazaire	1/100 000	Vanney/1968	CNEXO
16	Carte sédimentologique sous-marine de l'île d'Yeu	1/100 000	Vanney/1971	CNEXO
17	Atlas des fonds meubles du plateau continental du Golfe de Gascogne.	1/100 000	Chassé et Glemarec/1976.	Atlas UBO/CNEXO
18	De la pointe du Grouin du Cou à la pointe de Chassiron - 7404G	1/50 000	Garnaud/1998	Epsom
19	De la Rochelle à la pointe de la Coubre - 7405G	1/50 000	Weber et al./to be published	Epsom
20	Embouchure de la Gironde - 7028G	1/50 000	Mallet/1998	Epsom
21	Bassin d'Arcachon : carte de l'environnement marin	1/25 000	Bouchet/1995	Ifremer
22	carte des formations superficielles sous-marines devant la côte basque	1/20 000	Augris et al./1999	Ifremer

Annex 4

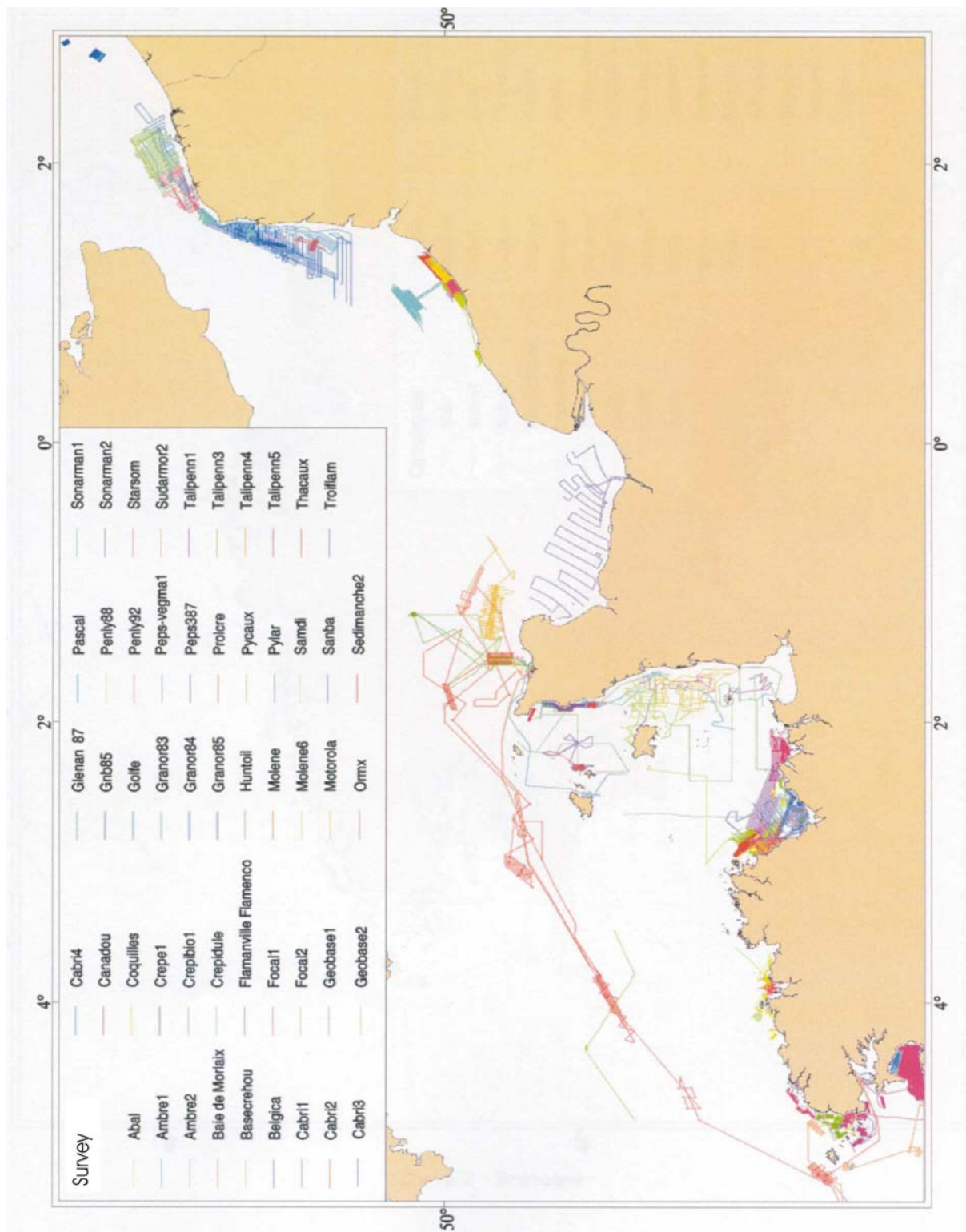
A. EHRHOLD

Figure 3: sedimentological and bedform dynamic mapping
Limits of sedimentological maps on Mediterranean coast (Ehrhold, 2002)



N°	Title	Scale	Auteurs/Date	Editor Source
1	Carte sédimentologique sous-marine d'Argeles-sur-Mer	1/100 000	Duboul-Razavet et al./1970	BRGM/CNEXO
2	Carte sédimentologique sous-marine de Perpignan	1/100 000	Duboul-Razavet et al./1970	BRGM/CNEXO
3	Carte des formations superficielles entre Port Barcares et St-Cyprien	1/20 000	Augris et Mear/1993	Ifremer
4	Compilation travaux Aloisi	-	-	Ifremer
5	Nature des fonds meubles sous-marins au sud de la camargue	-	Roux et Vernier	cnexo
6	Carte des sédiments superficiels du golfe de Fos	-	Roux/1983	Scientific documentation
7	Nature des dépôts marins du cap Couronne au bec d'Aigle (dans CSCF)	-	Blanc	Scientific documentation
8	Nature des dépôts meubles superficiels de la baie de marseille	1/100 000	Blanc et al./1972	CNEXO
9	Nature des dépôts marins du bec d'Aigle au cap Cepet (dans CSCF)	-	Muschotti et blanc	Scientific documentation
10	Nature des dépôts marins du cap Cepet au golfe de Giens (dans CSCF)	-	Blanc et al.	Scientific documentation
11	Carte de l'herbier de Posidonie et des fonds marins environnants - Toulon	1/10 000	Paillard et al./1993	Ifremer
12	Carte de l'herbier de Posidonie et des fonds marins environnants - Giens	1/10 000	Paillard et al./1994	Ifremer
13	Carte de l'herbier de Posidonie et des fonds marins environnants - Hyères	1/50 000	Paillard et al./1995	Ifremer
14	Carte des formations superciels du parc national de Port Cros	1/7500	Belsher et Houlagte/2001	Ifremer
15	Nature des dépôts marins de la presqu'île de Giens au cap Camarat (dans CSCF)	-	Blanc et al.	Scientific documentation
16	Nature des dépôts meubles superficiels de la baie de St-Tropez	1/50 000	Bellaiche/1974	CNEXO
17	Nature des dépôts marins du cap Camarat au cap Roux (dans CSCF)	-	Blanc et al.	Scientific documentation
18	Nature des dépôts marins des golfes Juan et de la Napoule	-	Nesteroff/1965	Scientific documentation
19	Nature des fonds du golfe Juan	-	Bourgeois et al./1975	Scientific documentation
20	Nature des sédiments des baies de Nice et de Villefranche-sur-Mer	-	Rapin/1980	Scientific documentation
21	Nature des dépôts marins de la rade de Villefranche	-	Baglinière/1978	Scientific documentation
22 to 24	Cartes des sédiments superficiels marins de Menton au cap d'Ail	1/7500	Belsher et Houlagte/2000	Ifremer
25	Fonds de la baie de Menton	-	Kremer/1975	Scientific documentation
26 to 34	Cartes des principaux peuplements et types de fonds	-	Pasqualini/1997	Scientific documentation
35	Carte de nature de fond - Nord Corse	1/100 000	LIMA Project	Brgm
36	Carte de nature de fond - Bastia	1/100 000	LIMA Project	Brgm
37	Carte de nature de fond - Cervione	1/100 000	LIMA Project	Brgm
38	Carte de nature de fond - Aléria	1/100 000	LIMA Project	Brgm
39	Carte de nature de fond - Porto-Vecchio	1/100 000	LIMA Project	Brgm
40	Carte de nature de fond - Ajaccio	1/100 000	LIMA Project	Brgm
41	Carte de nature de fond - Cargèse	1/100 000	LIMA Project	Brgm
42	Carte de nature de fond - Calvi	1/100 000	LIMA Project	Brgm
43	Carte de nature de fond - Nord Calvi	1/100 000	LIMA Project	Brgm
44	Carte sédimentaire du plateau corse (compilation des données au plomb soufflé)	-	Fluquet et al./2001	Scientific documentation

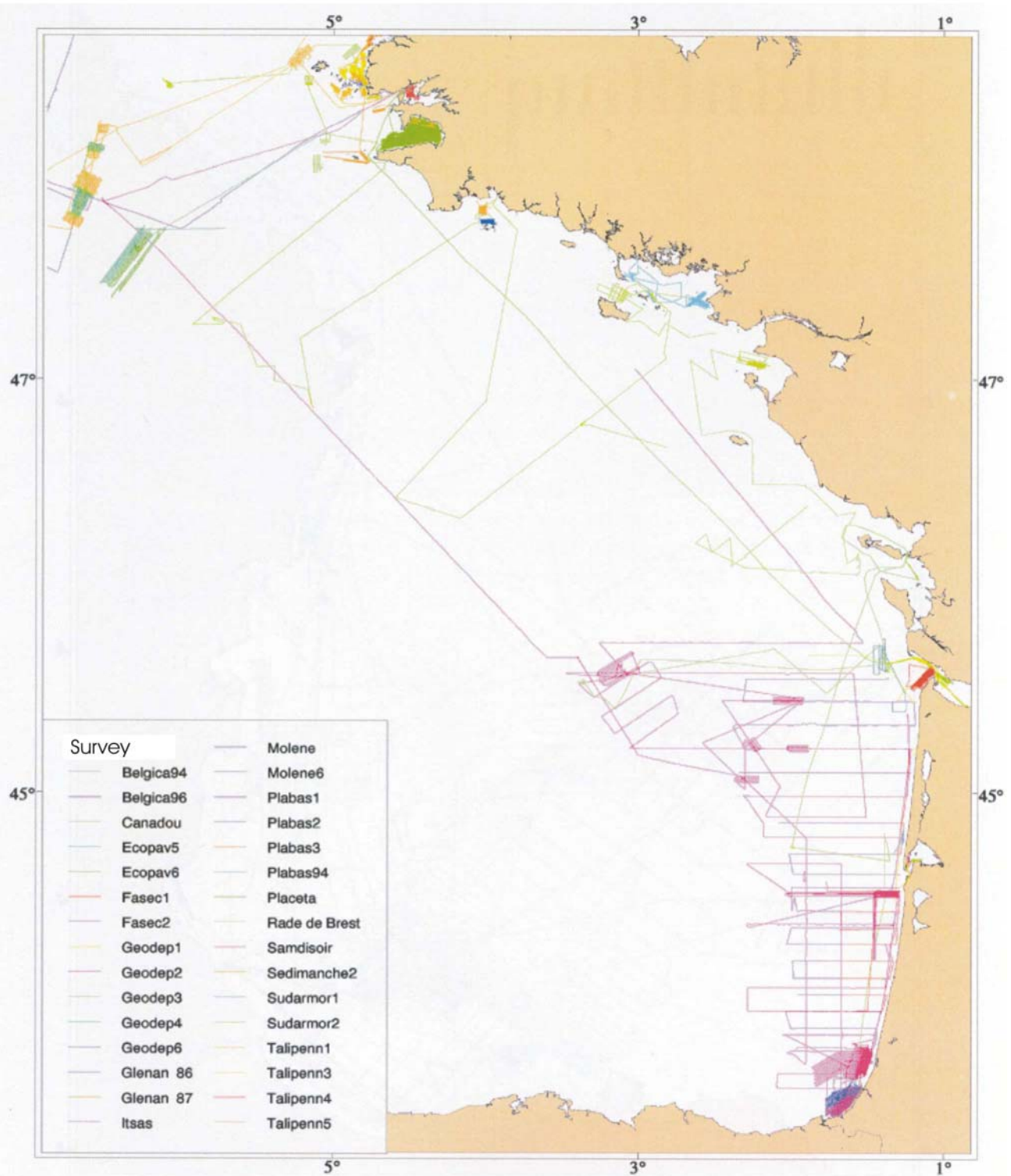
Annex 4



* Stephan M., Satra C., Augris C., Bourillet J.F., 2002 Synthèses géologiques sur le plateau continental français métropolitain. Recensement des campagnes côtières et documents produits, Ifremer/DRO-GM report, 49p

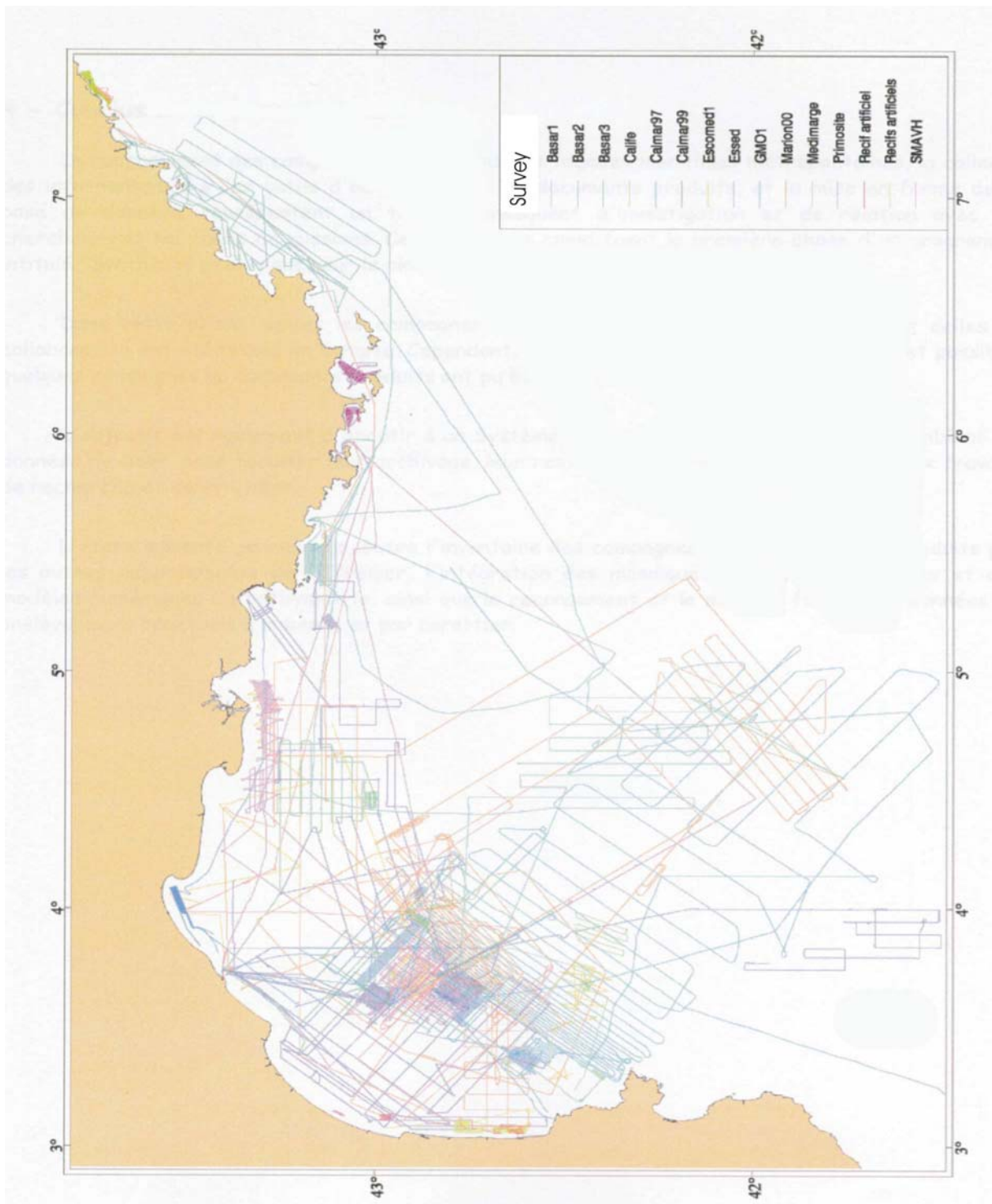
Annex 4

**Figure 5: sedimentological and bedform dynamic mapping
Location of acoustic profiles in Atlantic region***



* Stephan M., Satra C., Augris C., Bourillet J.F., 2002 Synthèses géologiques sur le plateau continental français métropolitain. Recensement des campagnes côtières et documents produits, Ifremer/DRO-GM report, 49p

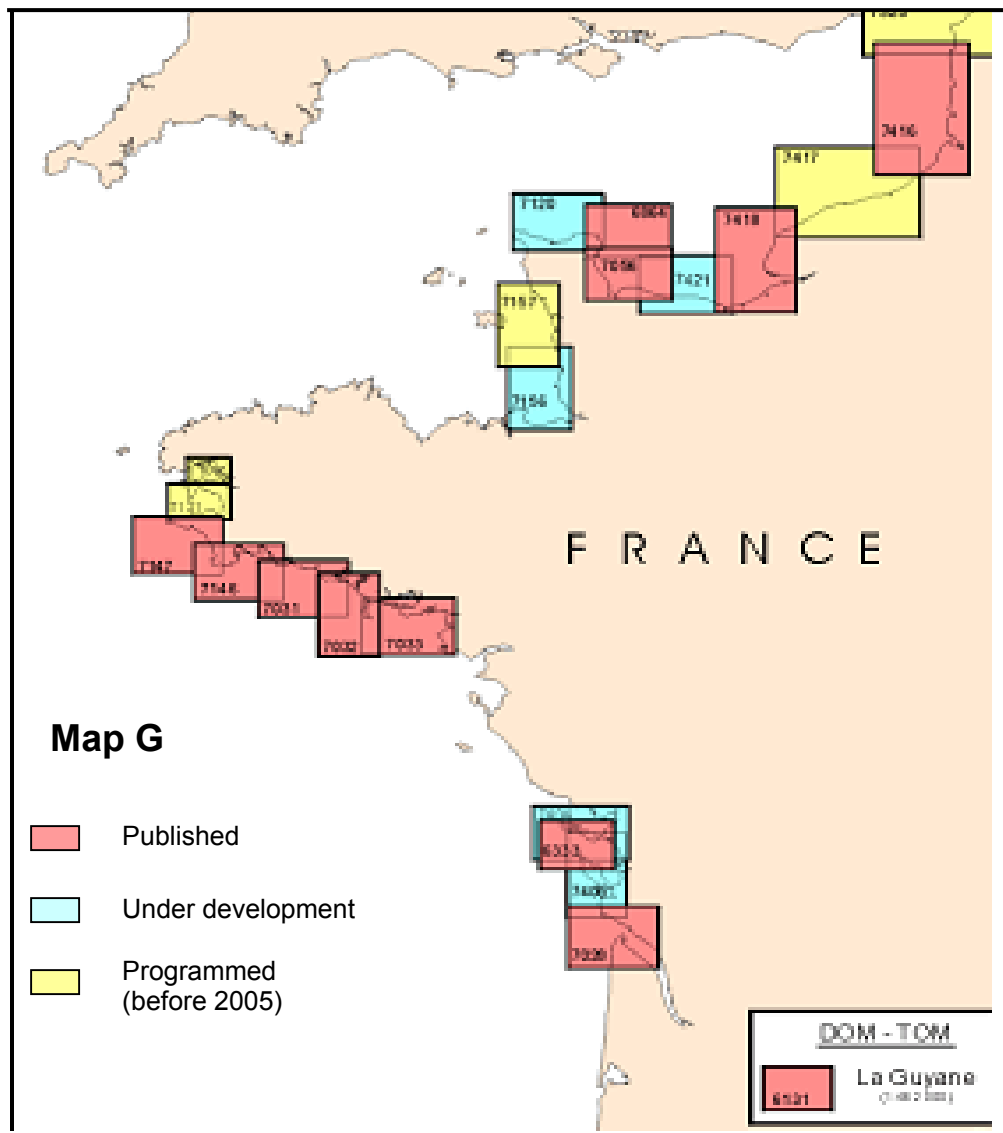
Annex 4



* Stephan M., Satra C., Augris C., Bourillet J.F., 2002 Synthèses géologiques sur le plateau continental français métropolitain. Recensement des campagnes côtières et documents produits, Ifremer/DRO-GM report, 49p

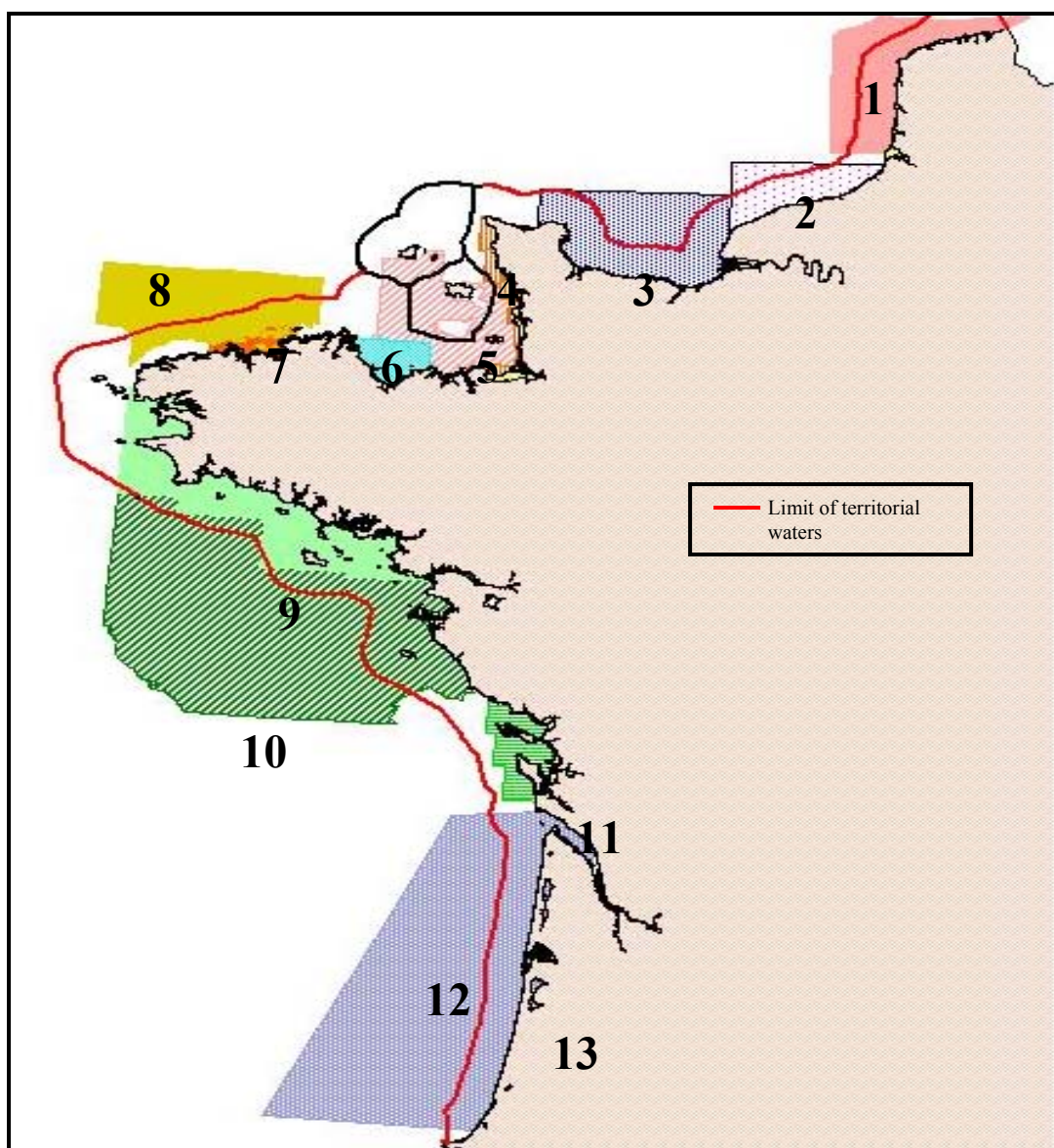
Annex 5

**Figure 1: sedimentological and bedform dynamic mapping
Map G project, SHOM (France)**



Annex 6

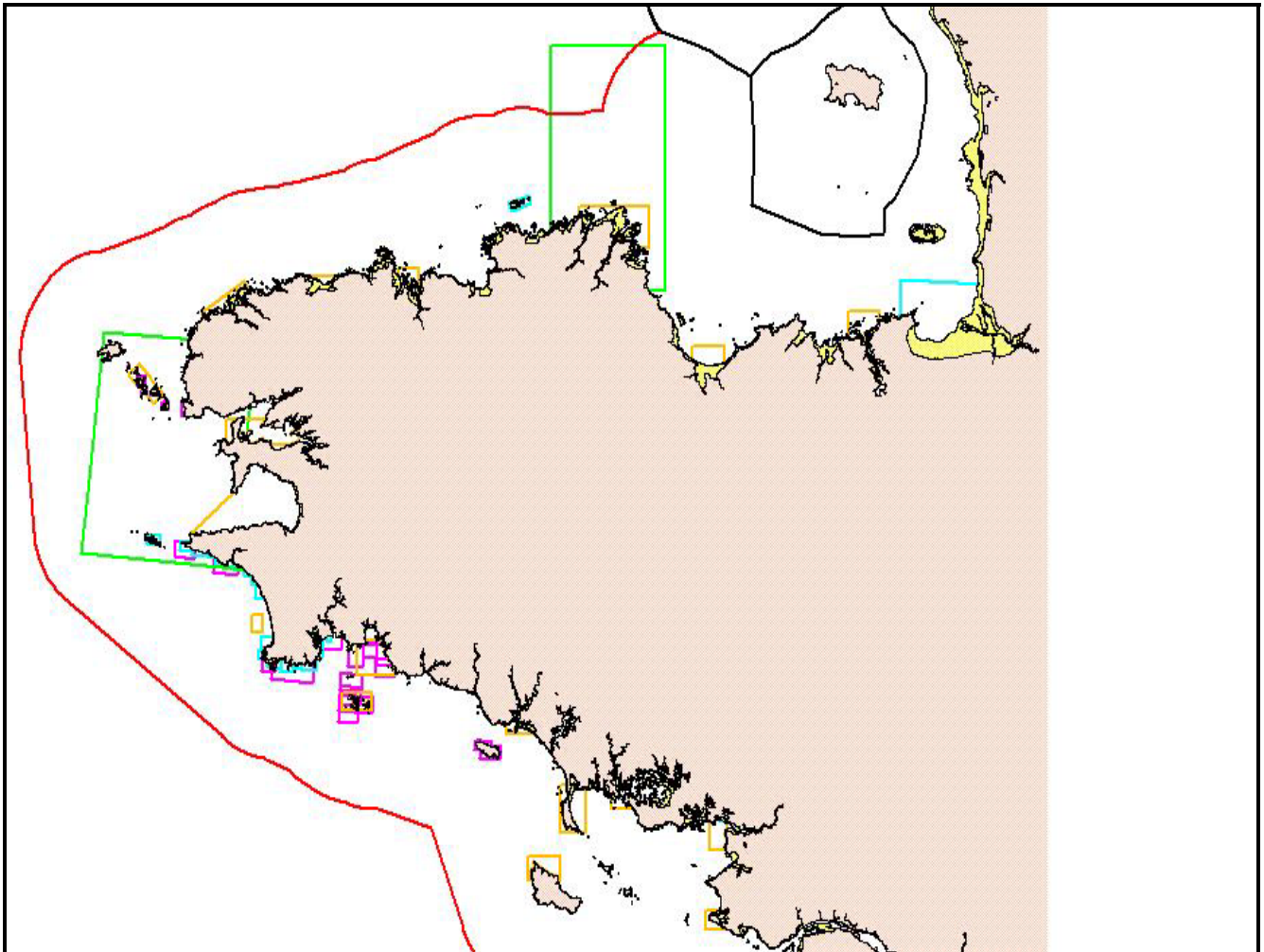
Figure 1: map of biocenosis (channel and atlantic coast)





N°	Auteurs	Date	Scale	Output
1	In Dauvin J.C., Dewarumez J.M.,	2000	Scale unknown	Unpublished map
	according to			
	Cabioch L. and Glaçon R.	1975		
	Davoult <i>et al</i>	1988		
	San Vicente	1995		
	Vaslet <i>et al</i> sediment map	1978		
2	Cabioch L., Glaçon R.	1977	1/317 000	Publication
3	Gentil F., Cabioch L.	1997	1/117 000	Map published by Station Biologique of Roscoff
4	Guillaumont B., <i>et al</i>	1987	1/25 000	Maps, Digitized map to be qualified
5	Retière C.	1979	1/152 000	Thesis, Digitized map to be qualified
6	Hamon D., Coic D.	1996	1/100 000	Atlas, Digitized map to be qualified
7	Cabioch L.	1968	1/180 000	Thesis, Digitized map to be qualified
8	Cabioch L.	1968	1/50 000	Thesis, Digitized map to be qualified
9	Chassé C., Glémarec M.	1976	1/100 000	Atlas, Digitized map to be qualified
10	Chassé C., Glémarec M.	1976	1/500 000	Atlas, Digitized map to be qualified
11	Hily C.	1978	1/75 000	Thesis, Digitized map to be qualified
12	Bouchet J.M.	1979	1/250 000	Maps, Digitized map to be qualified
13	Bouchet J.M.	1987	1/25 000	Map

Annex 6



Figure 2: example of Brittany : local existing map and map planned



Existing maps

-  Intertidal or very shallow bottom
-  Intertidal or very shallow bottom (seaweeds only)

Maps planned

-  Subtidal (low scale)
-  Intertidal and/or subtidal (high scale)