

**FRANCE PROGRESS REPORT ON CETACEAN RESEARCH, JANUARY 2005 TO DECEMBER 2005, WITH STATISTICAL DATA FOR THE CALENDAR YEAR 2005.**

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## 1. Species and stocks studied

Common name	IWC recommended scientific name	Area/stock(s)	Items referred to
Cetaceans	<i>Cetacea</i>	French coastal waters, NE Atlantic, NW Mediterranean sea, Caribbean (Martinique and Guadeloupe), New Caledonia, Southern Indian Ocean	2.1; 2.2; 7.1; 8; 9; 10
Mysticetes	<i>Mysticeta</i>	New Caledonia, Southern Ocean	9; 10
Humpback whale	<i>Megaptera novaeangliae</i>	French Polynesia, La Réunion, Mayotte, New Caledonia, Caribbean (Martinique and Guadeloupe)	2.1; 2.2; 3.1; 3.2; 4.1; 9; 10
Minke whale	<i>Balaenoptera acutorostrata</i>	Atlantic; New Caledonia	6.2 ; 8
Fin whale	<i>Balaenoptera physalus</i>	NW Mediterranean Sea	2.1; 4.3; 6.2; 8; 9
Bryde's whale	<i>Balaenoptera edeni</i>	Caribbean (Guadeloupe)	2.1
Sperm whale	<i>Physeter macrocephalus</i>	NW Mediterranean Sea, Caribbean (Martinique and Guadeloupe)	2.1; 2.2; 3.1; 3.2; 4.3; 6.2; 8; 9
Pygmy sperm whale	<i>Kogia breviceps</i>	Atlantic, Mediterranean, Caribbean (Guadeloupe)	4.4
Dwarf sperm whale	<i>Kogia sima</i>	New Caledonia, Mayotte, Caribbean (Guadeloupe)	2.1; 4.1; 4.3
Beaked whale	<i>Mesoplodon spp.</i>	Mayotte, Caribbean (Guadeloupe)	2.1; 3.1
Cuvier's beaked whale	<i>Ziphius cavirostris</i>	Mediterranean, Atlantic, Caribbean (Guadeloupe)	2.1; 8
Delphinids	<i>Delphinidae</i>	Mediterranean, Atlantic, Caribbean (Guadeloupe)	2.1; 2.2; 4.1; 4.4; 7.1; 9; 10
Killer whale	<i>Orcinus orca</i>	Southern Indian Ocean, Mediterranean, Caribbean (Guadeloupe)	2.1; 3.1; 8
False killer whale	<i>Pseudorca crassidens</i>	Caribbean (Guadeloupe)	2.1
Pygmy killer whales	<i>Feresa attenuate</i>	New Caledonia, Caribbean (Guadeloupe)	2.1
Long-finned pilot whale	<i>Globicephala melas</i>	Atlantic, Mediterranean	2.1; 2.2; 4.3; 7.1; 8; 9
Short-finned pilot whale	<i>Globicephala macrorhynchus</i>	French Polynesia, Caribbean (Guadeloupe)	2.1; 3.1; 3.2
Melon-headed whale	<i>Peponocephala electra</i>	Mayotte, Caribbean (Guadeloupe)	2.1; 3.1; 4.3
Risso's dolphin	<i>Grampus griseus</i>	NW Mediterranean Sea	2.1; 2.2; 3.1; 4.3; 7.3; 8; 9
Fraser's dolphin	<i>Legenodelphis hosei</i>	Caribbean (Guadeloupe)	2.1
Common bottlenose dolphin	<i>Tursiops truncatus</i>	French coasts, NE Atlantic, NW Mediterranean, New Caledonia, Caribbean (Guadeloupe)	2.1, 3.1, 3.2; 4.1; 4.3; 4.4; 7.1; 8
Indian Ocean bottlenose dolphin	<i>Tursiops aduncus</i>	Mayotte, New Caledonia	3.1
White sided dolphin	<i>Lagenorhynchus acutus</i>	NE Atlantic	8
White beaked dolphin	<i>Lagenorhynchus albirostris</i>	NE Atlantic	8
Short-beaked common dolphin	<i>Delphinus delphis</i>	NE Atlantic	2.2; 4.3; 4.4; 7.1; 7.3; 8; 9
Pantropical spotted dolphin	<i>Stenella attenuate</i>	Mayotte, Caribbean (Guadeloupe)	2.1; 3.1; 4.3
Striped dolphin	<i>Stenella coerulaeoalba</i>	NW Mediterranean, NE Atlantic, Caribbean (Guadeloupe)	2.1; 2.2; 3.1; 4.3; 4.4; 7.1; 7.3; 8; 9
Spinner dolphin	<i>Stenella longirostris</i>	Mayotte, French Polynesia, New Caledonia, Caribbean (Guadeloupe)	2.1; 3.1; 3.2; 4.3
Tucuxi	<i>Sotalia fluvialilis</i>	French Guyana	7.4
Rough-toothed dolphin	<i>Steno bredanensis</i>	French Polynesia, Caribbean (Guadeloupe)	2.1; 3.1; 3.2
Harbour porpoise	<i>Phocoena phocoena</i>	NE Atlantic and Channel	4.3; 4.4; 7.1; 7.3; 8

## 2. Sightings data

### 2.1 Field work

#### 2.1.1 SYSTEMATIC

- All cetaceans, Bay of Biscay (CRMM): preferential habitats and relationship with small pelagic fish examined from acoustic fish survey carried out by Ifremer research vessel *Thalassa*.

- All cetaceans were surveyed year round by boat in the southern Bay of Biscay as the continuation of a 26 year long follow up; effects of oil spills and oceanic-climatic change on population levels (MNHN, Biarritz).
- All cetaceans were surveyed in the summer along the routes of the supply vessel Marion-Dufresne between Réunion Island and the French research stations of the Southern Indian Ocean: Crozet, Kerguelen and Amsterdam (CEBC).
- All cetacean aerial survey around Brittany in August 2005 (LEMM).
- All cetaceans were surveyed in the summer in the northwestern Mediterranean sea, in relationship with the maritime traffic (écoOcéan)
- Humpback whales and other cetaceans, New Caledonia (OCNC). Survey from small motor boat and sailing boat held from 15 July to 21 September 2005, on the breeding area of New Caledonia (substock E2).
- Survey of humpback whales and other cetaceans around Réunion Island (GLOBICE).
- Humpback whales, Mayotte (OMM). Surveys were carried out from July-November to investigate preferential habitat and activity budget of mother calf pairs in the lagoon; relative abundance and diversity of other cetaceans are monitored year round in and outside the lagoon; habitat and resource uses, social organisation and interaction with human activities are more specifically investigated for small delphinids.
- Humpback whales and sperm whales were surveyed around Martinique (French Caribbean) in March 2006 by GREC and SEPANMAR.
- Sperm whales, humpback whales and other cetaceans, Caribbean Sea, Guadeloupe (AET). Surveys along the leeward coast were carried out year round from a research sailing boat and a whale watch motor boat (summary table of sightings given below).
- Sperm whale, and other cetaceans from 26 June to 3 August (GREC) and Risso's dolphin (GECCEM), Mediterranean Sea: dedicated distribution survey from boat and relationship with the environment.
- Killer whale population survey at the Crozet Islands, Indian sector of the Southern Ocean (CEBC).
- Spinner dolphin, French Polynesia (CRIOBE). Surveys carried out from August-November.
- Systematic summer and winter surveys of coastal bottlenose dolphins along the coast of western Brittany (LEMM), along the Normandy coast (GECC) and the coast of Corsica (GECCEM).
- Striped dolphins of the coastal area close to Antibes were studied during 11 surveys (900 km, 16 sightings) conducted for photo-ID and focal samplings (Meissner, 2005b).
- Sperm whale, long-finned pilot whale, Risso's dolphin and other species were sampled with a sailing boat (CRC and GREC) along the continental slope of the NW Mediterranean Sea, in July 2005 (number of sightings: striped dolphins: 48, sperm whales: 13; fin whales: 5; Risso's dolphins: 1; long-finned pilot whale: 1).

Cetacean sightings around Guadeloupe in 2005, from AET (Guadeloupe) Number of encounters <i>per</i> species (one animal or more) / year 2005		
Species	Whale watch motor boat	Research sailing boat
Humpback whale	9	12
Sperm whale	175	302
Dwarf sperm whale	1	0
Beaked whale	9	9
Cuvier's beaked whale	3	2
Delphinids non ID	1	5
Killer whale	0	2
Short-finned pilot whale	4	7
Melon-headed whale		1* (fisherman boat)
Common bottlenose dolphin	5	9
Pan tropical spotted dolphin	71	91
Rough-toothed dolphin	2	1
Bryde's whale	1	
False killer whale	0	2
Pigmy killer whale	4	5
Fraser's dolphin	3	10

#### 2.1.2 OPPORTUNISTIC, PLATFORMS OF OPPORTUNITY

- Cetaceans, French waters (CRMM, LEMM, GECC, GEFMA). CRMM, LEMM, GEFMA and GECC compile opportunistic sightings in various areas of the Atlantic and Channel, collected by members of the public, custom officers and scientists.
- Cetaceans, New Caledonia (OCNC). Sighting data are collected from opportunistic sighting forms returned by scientists and members of the public.
- Cetaceans, Mayotte (OMM). Sighting data are collected from incidental sighting forms returned by scientists, cetacean watching operators and the general public.
- Odontocetes, French Polynesia (CRIOBE). Opportunistic data are collected by scientists.
- Humpback whales, French Polynesia (GREC): survey from small boats in October 2005 with song recordings.
- Cetaceans, La Réunion (GLOBICE). Sighting data are collected from incidental sighting forms returned by scientists and the general public.

- Opportunistic sightings (about 130 in 2005) were collected by French Customs in the NW Mediterranean Sea, and forms returned to the CRC.

## 2.2 Analyses

Cetacean abundance estimates are being carried out, following capture-mark-recapture methodologies, by OMM around Mayotte, as well as studies of site fidelity and inter-individual associations.

Cetacean abundance estimates are carried out, following capture-mark-recapture methodologies, by OCNC in New Caledonia, as well as studies of site fidelity and movement.

Sperm whale abundance estimates are being carried out around Guadeloupe (AET) by using capture-mark-recapture methodologies from photo-id data, as well as studies of fidelity and inter-individuals associations. A similar work is underway on delphinids in the same area.

Summer surveys from 1998 to 2005 are used to model the habitat suitability of the sperm whale, long-finned pilot whale and the Risso's dolphin, in the NW Mediterranean sea (Praca *et al.* 2005a,b).

Acoustic analyses on striped and Risso's dolphin, long-finned pilot whale, sperm and humpback whales: those on sperm whales were aimed on feeding ecology studies (GREC).

Aerial survey data, collected during previous years, were used in a preliminary minimal abundance estimate and habitat use analysis of common dolphins and other small delphinids in the Bay of Biscay (CRMM and CRELA; Grégoire Certain PhD thesis due in 2006).

Striped dolphins' feeding behaviours were studied through multivariate analysis (Meissner *et al.* 2005b).

## 3. Marking data

### 3.1 Field work

#### 3.1.1 NATURAL MARKING DATA

Species	Feature	Area/stock	Calendar year / no. Photographed	Catalogued (Y/N)	Catalogue total	Contact person/institute
Humpback whale	Fluke	N. Caledonia, substock E2	2005/141*	Y	359	OCNC
Humpback whale	Fluke	Mozambique Channel stock C	2005/21	Y	244	OMM
Humpback whale	V. fluke, Dorsal fin	Caribbean (Guadeloupe)	2005/8 individuals	Y	11	AET
			2005/6 individuals	Y	7	
Sperm whale	Fluke	NW Med	2005/15	Y	130	GREC
Sperm whale	Fluke	Caribbean (Martinique)	2005/**	Y	>7	SEPANMAR/GREC
Sperm whale	Ventral Fluke	Caribbean (Guadeloupe)	2005/258 flukes /104 individuals	Y	208 individuals	AET
Sperm whale	Dorsal Fluke	Caribbean (Guadeloupe)	2005/5 flukes	Y	**	AET
Sperm whale	Dorsal fin	Caribbean (Guadeloupe)	2005/ 15 fins	Y	**	AET
Beaked whale	Sides	Mozambique Channel	2005/4	Y	11	OMM
Beaked whale	Sides	Caribbean (Guadeloupe)	2005/4	Y		AET
Spinner dolphin	Dorsal fin	Mozambique Channel	2005/189	Y	238	OMM
Spotted dolphin	Dorsal fin	Mozambique Channel	2005/51	Y	91	OMM
Spotted dolphin	Sides	Caribbean (Guadeloupe)	2005/4	Y	5	AET
Short finned .Pilot whale	Dorsal fin	Caribbean (Guadeloupe)	2005/**	Y	**	AET
Killer whale	Dorsal fin	Caribbean (Guadeloupe)	2005/2	Y	2	AET
Rough-toothed dolphin	Dorsal fin	Caribbean (Guadeloupe)	2005/**	Y	**	AET
Striped dolphin	Dorsal fin	Mediterranean	2005/**	Y	>111	CRC
Spinner dolphin	Dorsal fin	French Polynesia	2005/103	Y	170	CRIOBE
Rough-toothed dolphin	Dorsal fin	French Polynesia	2005/50	Y	**	CRIOBE

Bottlenose dolphin	Dorsal fin	Caribbean (Guadeloupe)	2005/ **	Y	**	AET
Bottlenose dolphin	Sides	Caribbean (Guadeloupe)	2005/ **	Y	**	AET
Bottlenose dolphin	Dorsal Fin	NW Mediterranean	2005/**	Y	**	GECEM
Bottlenose dolphin	Dorsal Fin	Brittany	2005/**	Y	48	LEMM
Bottlenose dolphin	Dorsal fin	New Caledonia	2005/4	Y	72	OCNC
Indopacific Bottlenose dolphin	Dorsal fin	Mozambique Channel	2005/23	Y	64	OMM
Melon headed whale	Dorsal fin	Mozambique Channel	2005/113	Y	177	OMM
Risso's dolphin	Dorsal Fin	NW Mediterranean	2005/**	Y	**	GECEM
Risso's dolphin	Dorsal Fin	NW Med	2005	Y(50)	300	GREC

*\*Only flukes are included in this figure although dorsal fins were also captured \*\*Details not available: newly established catalogue*

### 3.1.2. ARTIFICIAL MARKING DATA

None

### 3.1.3 TELEMETRY DATA

None

### 3.2 Analyses

Demographic investigations based on photo-identification have been conducted by CRIOBE on the spinner dolphins' communities of the Society Archipelago, French Polynesia. The analyses include: estimate of community size based on capture-mark-recapture methodologies, home range and migration events, analysis of the pattern of associations. Residency patterns of rough-toothed dolphins and short finned pilot whales around the island of Moorea are under investigation by matching dorsal fin photographs collected across the last 15 years.

GREC participates to the EU project EUROPHLUKES, in particular to match pictures of tail flukes in sperm whales. LEMM also participates to the EU project EUROPHLUKES to compare European bottlenose dolphin catalogues.

Demographic investigations based on humpback whale photo-identification have been conducted by OCNC. They included population size estimate based on mark-recapture, home range in New Caledonia and migration events in the South Pacific.

AET participates to the NAMSC catalogue, to match flukes of sperm whales, and to the North Atlantic Humpback Whales Catalogue. Analysis of inter-individual associations and site fidelity are made.

## 4. Tissue/biological samples collected

### 4.1 Biopsy samples

Species	Area/stock	Calendar year/ season / No collected	Archived (Y/N)	No. Analysed	Total holdings	Contact person/institute
Humpback whale	New Caledonia, sub-stock E2	July-Sept 2005/107	N	505	612	OCNC
Common bottlenose dolphin	New Caledonia	Winter 2005/1	Y	1	1	OCNC
Dwarf sperm whale	New Caledonia	Dec 2005/3	Y	3	4	OCNC
Humpback w.	Mozambique chan.	July-Nov 2005/15	Y	*	116	OMM
Delphinids	Mozambique chan.	2005/41	Y	*	101	OMM

\* information not available

Most biopsy samples listed above are collected for genetic analyses as well as fatty acid or isotope analyses.

### 4.2 Samples from directed catches or bycatches

None

### 4.3 Samples from stranded animals

Species	Area/stock	Calendar year/ number total	Archived (Y/N)	Tissue type (s)	Contact person/institute
Fin whale	Atlantic	2005/*	Y	Various tissues**	CRMM
Sperm whale	Caribbean (Guadeloupe)	2005/1	Y	Teeth	AET
Dwarf Sperm whale	New Caledonia	2005/3	Y	Skin, teeth, stomach	OCNC
Melon-headed whale	Mayotte	2005/1	Y	Various tissues	OMM
Spinner dolphin	Mayotte	2005/2	Y	Various tissues	OMM
Spotted dolphin	Caribbean (Guadeloupe)	2005/1	Y	Various tissues	AET
Short-beaked common dolphin	Atlantic	2005/*	Y	Various tissues**	CRMM/GEFMA/GECC
Striped dolphin	Atlantic	2005/*	Y	Various tissues**	CRMM
Striped dolphin	Mediterranean	2005/*	Y	Various tissues**	GECEM
Bottlenose dolphin	Atlantic	2005/*	Y	Various tissues**	CRMM/GEFMA
Bottlenose dolphin	Mediterranean	2005/*	Y	Various tissues**	GECEM
Long finned pilot whale	Atlantic	2005/*	Y	Various tissues**	CRMM
Risso's dolphin	Atlantic	2005/*	Y	Various tissues**	CRMM
Harbour porpoise	Atlantic	2005/*	Y	Various tissues**	CRMM/GECC
Common dolphin	Brittany	2005*	Y	Various tissues**	LEMM
Harbour porpoise	Brittany	2005*	Y	Various tissues**	LEMM
Long finned pilot whale	Brittany	2005*	Y	Various tissues**	LEMM
Fin whale	Brittany	2005*	Y	Various tissues**	LEMM
Sperm whale	Brittany	2005*	Y	Various tissues**	LEMM

\* data not compiled to date

\*\* typically: teeth or baleen plates, skin, blubber, reproductive organs, stomach content, kidney, liver, muscle

#### 4.4 Analyses/development of techniques

Dietary analyses of small cetaceans and potentially competing top predators from the Bay of Biscay were completed by CRMM and CRELA (Pusineri 2005; PhD thesis) for common, striped and bottlenose dolphins and harbour porpoise in the Bay of Biscay and adjacent oceanic areas. Publication of these results is underway by Pusineri *et al.* in press, Ringelstein *et al.* in press, Spitz *et al.* in press *a* and *b*; a similar work was carried out in collaboration with others for the pygmy sperm whale (Santos *et al.* 2005). Social and spatial structures of common dolphins were investigated by using both genetic markers (mtDNA and microsatellites; Amélia Viricel MSc thesis due in 2006) and ecological indicators such as fatty acid profiles and heavy metal burdens (Lahaye *et al.* in press; Virginie Lahaye PhD thesis due in 2006).

## 5. Pollution studies

None

## 6. Statistics for large cetaceans

### 6.1 Direct catches (commercial, aboriginal and scientific permits) for the calendar year 2005

None

### 6.2 Non-natural mortality for the calendar year 2005

#### 6.2.1 STRANDINGS OR DEAD WHALES ENCOUNTERED AT SEA

Whale species	Sex	Location	Cause of death	Det.	Source or contact institution
A. Sperm whale	F	Natural Reserve PetiteTerre Guadeloupe	U	U	AET
B. Sperm whale	M	Brittany	U	U	LEMM
B. Sperm whale	U	Brittany	U	U	LEMM
B. Sperm whale	M	Brittany	U	U	LEMM
B. Sperm whale	U	NW Mediterranean	U	U	GECEM
C. Fin whale	M	Eastern English Channel	U	U	Picardie Nature
D. Fin whale	M	Bay of Biscay	U	V	CRMM

E. Fin whale	F	Brittany coast	U	U	LEMM
F. Fin whale	4	Bay of Biscay	U	U	CRMM and GEFMA
G. Fin whale	F	Brittany	U	U	LEMM
H. Fin whale	U	NW Mediterranean	U	V	GECEM
I. Fin whale	U	NW Mediterranean	U	U	GECEM
J. Fin whale	U	NW Mediterranean	U	U	GECEM
K. Minke whale	M	Bay of Biscay	U	U	CRMM
L. Minke whale	F	Bay of Biscay	U	U	CRMM
Comments: A. in 2005; B to L in 2004; F: 1 male and 3 females from May to November; D to G: all emaciated; H. drifting carcass of unknown sex, external injuries suggested that it had been hit by a high speed ferry between Corsica and France mainland. The carcass did not strand ashore;					

#### 6.2.2 OBSERVED OR REPORTED SHIP STRIKES

None

#### 6.2.3 FISHERY BYCATCH

None

#### 6.3 Earlier years' statistics

See above for 2004 only.

### 7. Statistics for small cetaceans

#### 7.1 For the calendar year 2005

In 2005, 139 stranded cetaceans were reported to show marks suggesting incidental catch in fishing gear along the Atlantic coast.

Species	Area/stock	Directed catch		Incidental mortality			Live-capture
		Reported	Est. Total	Reported	Est. Total*	Source	
Long-finned pilot whale	Atlantic	0	0	1	No data	CRMM	0
Common bottlenose dolphin	Atlantic	0	0	11 <sup>1</sup>	No data	CRMM	0
Striped dolphin	Atlantic	0	0	25 <sup>j</sup>	No data	CRMM	0
Short beaked common dolphin	Atlantic	0	0	70 <sup>k</sup>	No data	CRMM	0
Harbour porpoise	Atlantic	0	0	25 <sup>l</sup>	No data	CRMM	0
Unidentified dolphin	Atlantic	0	0	7	No data	CRMM	0

\*There is no possibility to extrapolate stranding data to total by-catch; however most of these kills are likely associated to the seabass pair trawl fishery whose impact on dolphin populations has been estimated during the recent PETRACET and PROCET project (final reports due later in 2006), see also 7.3.3.

#### 7.2 Direct catches (commercial, aboriginal and scientific permits) for the calendar year 2005

None

#### 7.3 Non-natural mortality for the calendar year 2005

None other than by-catch in fisheries (see below).

#### 7.3.1 STRANDINGS OR DEAD SMALL CETACEANS ENCOUNTERED AT SEA

See specific section 8.

#### 7.3.2 OBSERVED OR REPORTED SHIP STRIKES

None

#### 7.3.3 FISHERY BYCATCH

The project PETRACET and PROCET were aimed at estimating removal of small cetaceans in the EU pelagic trawl fisheries by using embarked independent observer. Final report is due in 2006. The French fleets observed in this context include the paired pelagic fisheries for anchovy, albacore tuna and seabass. A total of 164

common dolphins, 3 striped dolphins and 1 Risso's dolphin were reported from the seabass fishery, 12 common dolphins from the albacore fishery and none from the anchovy fishery. Extrapolation to total fishing effort is underway.

Other by-catch events were opportunistically reported and included 8 harbour porpoise from bottom-set gillnet fisheries operating off Arcachon, Bay of Biscay in 2005.

Species	Number	Date	Location	Fate	Targeted fish species	Gear	How observed?	Source or contact
A. Common dolphin	6	August-Sept, 2004	Continental slope south of Celtic sea	D	Albacore tuna	PTM	Dedicated observer	see comment
B. Common dolphin	6	August-Sept, 2005	Continental slope south of Celtic sea	D	Albacore tuna	PTM	Dedicated observer	see comment
C. Common dolphin	139	January-February, 2005	Bay of Biscay, continental shelf	D	Sea bass	PTM	Dedicated observer	see comment
D. Common dolphin	25	March, 2005	Western English Channel	D	Sea bass	PTM	Dedicated observer	see comment
E. Risso's dolphin	1	Winter, 2005	Bay of Biscay, continental shelf	D	Sea bass	PTM	Dedicated observer	see comment
F. Striped dolphin	3	Winter, 2005	Bay of Biscay, continental shelf	D	Sea bass	PTM	Dedicated observer	see comment
G. Harbour porpoise	8	Feb-March, 2005	Arcachon, Bay of Biscay	D	Miscellaneous	GNS	Fisherman voluntary report	CRMM
Comments: A to F: full reports of PETRACET and PROCET projects due in 2006 from the project coordinators.								

#### 7.4 Earlier years' statistics

A recent update of stranding events in French Guyana over the period 2002-4, revealed that all stranded cetacean were *Sotalia fluviatilis*, and 6 out of 8 reported cases had clear by-catch marks (Van Canneyt 2005). Only a very small proportion of French Guyana coast line is effectively surveyed for stranding.

## 8. Strandings

At the date of preparing this report, stranding data for the year 2005 were not fully compiled (CRMM with a participation of all the National Stranding Scheme field correspondents).

Details for the year 2004 are available. A total of 597 stranded cetaceans along the coasts of France, 66 for the Mediterranean Coast, 88 along the English Channel and 443 on the Atlantic coast. Of those, 507 were identified as fin whale (9), minke whale (2), sperm whale (4), Cuvier's beaked whale (2), killer whale (2), long finned pilot whale (18) Risso's dolphin (5), bottlenose dolphin (41), white beaked dolphin (1), white sided dolphin (1), common dolphin (228), striped dolphins (80) and harbour porpoise (114). Two multiple stranding event involving common dolphins were recorded along the coast of the Bay of Biscay in late January and late March.

Stranded cetaceans found in overseas territories are not exhaustively recorded: however partial data are available for French Polynesia (CRIOBE), New Caledonia (OCNC), Martinique (SEPANMAR), Guadeloupe (AET), Mayotte (OMM) and Réunion Island (GLOBICE). A recent review covering the years from late 1990s to present was done for Martinique, Guadeloupe, French Guyana, Saint Pierre et Miquelon, and Réunion Island, complete data set available from CRIOBE, OCNC, SEPANMAR, AET, OMM and GLOBICE.

## 9. Other studies and analyses

OCNC carries out genetic studies on the humpback whales in collaboration with the University of Auckland (NZ) which include genetic diversity (mtDNA and nuclear markers), relatedness within substock and between substocks (genotyping of 11 loci).

OCNC completed a pilot study monitoring whale watching activities in the Southern Lagoon of New Caledonia to investigate whether or not the presence of boats affects the behaviour of humpback whales. Land-based surveys were conducted from July 14<sup>th</sup> to September 4<sup>th</sup> 2005 using a theodolite and resulted in 40 independent tracking sessions of humpback whales.

OCNC carries out humpback whale songs recordings which are analysed by the University of Queensland, Australia.



GREC in looking at the acoustic aspects related with the issue of large whales being struck by ships and also at acoustic recognition of small delphinids by using a statistical approach. This is in partnership with Thalès Underwater Systems. GREC is studying the long term evolution of humpback whales songs in French Polynesia. CRC investigates the distribution of fin whale (Laran & Gannier, 2005; Laran et al. 2005a,b), sperm whale, Risso's dolphin and long-finned pilot whale (Praca et al., 2005a,b) in the northwest Mediterranean by using a modelling approach incorporating sighting data and remote sensing imagery.

CEBC investigates the distribution, relative abundance and movements of mysticetes in the Indian sector of the southern ocean by analysing low frequency acoustic recordings as well as catch data series (Cotté and Guinet, in press).

CEBC, WWF and EPHE evaluate the risk of collision between fin whale and maritime traffic in the northwestern Mediterranean Sea in summer in order to propose mitigation strategies.

écoOcéan is looking at the exposure of the favourable habitat of cetaceans to the pressure of maritime traffic, from merchant vessels to sailing boats, in collaboration with the French Navy, in the northwestern Mediterranean sea all year round.

CRC investigates seasonal changes in the distribution of northwest Mediterranean cetaceans by using a modelling approach. In particular, the relationship between sperm whale distribution and thermal front is studied. A similar study is being carried by CEBC, CRMM and LBEM in the Bay of Biscay, and by LEMM around Brittany.

Ifremer and CRMM, in collaboration with numerous other European institutions, contribute to the EU-funded projects NECESSITY and PETRACET related to the issue of common dolphin by-catch in pelagic trawl fisheries. Objectives include, on the one hand, the characterization of the segments of common dolphin population that are mostly exposed to by-catch and the development of various mitigation strategies based on modification of the trawls (NECESSITY) and, in the other hand, the assessment of by-catch rates from the observation of about 5% of the fishing effort. An additional project, PROCET funded by France, allows this observation effort to be increased to 8% of the fishing effort. Final reports are due in 2006.

## 10. Other actions

OCNC performs educational and information programme for whale watching operators and environmental administrations in New Caledonia. OMM has similar actions in Mayotte.

AET Guadeloupe performs educational programs for schools and codes of conduct for whale watching.

LEMM built a website dedicated to marine mammals in Brittany (strandings, sightings, photoID...). This site is for the general public. <http://www.dauphinbretagne.fr> ; <http://www.marine-mammals-brittany.com>.

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