

**FRANCE PROGRESS REPORT ON CETACEAN RESEARCH, APRIL 2003 TO APRIL 2004, WITH
STATISTICAL DATA FOR THE CALENDAR YEAR 2003.**

Compiled by Vincent RIDOUX^{1,2} and Olivier VAN CANNEYT²

1- Université de La Rochelle, Laboratoire de Biologie et Environnement Marins, F-17042 La Rochelle

and

2- Centre de Recherche sur les Mammifères Marins, Institut du Littoral et de l'Environnement,

Port des Minimes, F-17000 La Rochelle.

This report compiles information obtained from : Centre d'Etudes Biologiques (CEBC), Chizé ; Centre de Recherche sur les Cétacés (CRC), Antibes ; Centre de Recherche sur les Mammifères Marins (CRMM), La Rochelle ; Direction de l'Agriculture et de la Forêt - Observatoire des Mammifères Marins (OMM), Mayotte ; Evasion Tropicale (ET), Guadeloupe ; Globice, La Réunion ; Groupe d'Etudes des Cétacés du Cotentin (GECC), Cherbourg ; Groupe d'Etude des Cétacés de Méditerranée (GECEM), Marseille ; Groupe d'Etudes de la Faune Marine Atlantique (GEFMA), Capbreton ; Groupe de Recherche sur les Cétacés (GREC), Antibes ; Muséum National d'Histoire Naturelle (MNHN), Paris and Biarritz ; Océanopolis, Brest ; Opération Cétacés Nouvelle Calédonie (OCNC), Nouméa ; Société pour l'Etude, la Protection et l'Aménagement de la Nature en Martinique (SEPLANMAR), Martinique ; Laboratoire de Biologie et Environnement Marins - Université de La Rochelle (ULR/LBEM), La Rochelle.

1. Species and stocks studied

Common name	Scientific name	Area/stock(s)	Items referred to
Cetaceans	<i>Cetacea</i>	French continental coast	4.3, 5, 7.1, 8, 9
Cetaceans	<i>Cetacea</i>	French continental waters	2.1.1, 2.1.2, 3.1.1, 7.1, 9
Cetaceans	<i>Cetacea</i>	Mediterranean Sea	2.1.1, 2.1.2, 3.1.1, 4.3, 7.1
Cetaceans	<i>Cetacea</i>	Caribbean Sea (Guadeloupe & Martinique)	2.1.1
Cetaceans	<i>Cetacea</i>	New Caledonia	2.1.2, 4.3
Cetaceans	<i>Cetacea</i>	Occidental Indian Ocean	2.1.1, 2.1.2, 3.1.1, 4.1
Cetaceans	<i>Cetacea</i>	French Polynesia	2.1.2
Humpback whale	<i>Megaptera novaeangliae</i>	French Polynesia	2.1.2, 3.1.1, 9
Humpback whale	<i>Megaptera novaeangliae</i>	Occidental Indian Ocean	2.1.2, 3.1.1
Humpback whale	<i>Megaptera novaeangliae</i>	New Caledonia	2.1.1, 3.1.1, 4.1
Humpback whale	<i>Megaptera novaeangliae</i>	Caribbean Sea (Martinique)	
Fin whale	<i>Balaenoptera physalus</i>	Mediterranean Sea	3.1.1, 3.1.2, 3.2, 4.1
Sperm whale	<i>Physeter macrocephalus</i>	Caribbean Sea (Guadeloupe)	2.1.1, 3.1.1
Sperm whale	<i>Physeter macrocephalus</i>	Mediterranean Sea	2.1.1, 2.2, 3.1.1, 9
Bottlenose dolphin	<i>Tursiops truncates</i>	French coasts	2.1.1, 2.1.2, 3.1.1, 4.3, 9
Risso's dolphin	<i>Grampus griseus</i>	Mediterranean Sea	

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 aerial and boat surveys.
- All cetaceans were surveyed year round by boat in the southern Bay of Biscay as the continuation of a 25 year long follow up (MNHN, Biarritz).
- Systematic summer and winter surveys of coastal bottlenose dolphins along the coast of western Brittany (Océanopolis), along the Normandy coast (GECC) and the coast of Corsica (GECEM).
- Sperm whale, striped dolphins and other cetaceans (GREC) and Risso's dolphin (GECEM), Mediterranean Sea: dedicated distribution survey from boat and relationship with the environment.
- Humpback whales, New Caledonia (OCNC). Survey held from 20 July to 12 September 2003, on the breeding area of New Caledonia (group V Antarctica).

- Humpback whales, Comoro Islands, Mayotte (OMM). OMM carries out surveys between July to November to collect sightings of humpback whales and other cetaceans in the lagoon of Mayotte and in the Comoro Area.
- Sperm whale and other cetaceans, Caribbean Sea – Guadeloupe (ET). Survey along the leeward coast year round from sailing boats.
- Humpback whales and other cetaceans, Caribbean Sea – Martinique (SEPANMAR-GREC). Survey year round from sailing boats, April 2003 to March 2004.
- Humpback whales and other cetaceans, French Polynesia (GREC). Survey from sailing boats, octobre 2003.
- Killer whale population survey at the Crozet Islands (CEBC), fin whale survey and relationship with the environment in the northwest Mediterranean Sea (CEBC).
- Survey of humpback whales and other cetaceans around Réunion Island (GLOBICE).

2.1.2 OPPORTUNISTIC, PLATFORMS OF OPPORTUNITY

- Cetaceans, French waters (CRMM, Océanopolis, GECC). In 2003 the CRMM recorded around 150 sightings of cetaceans in the Bay of Biscay, Océanopolis: around 200 in the Bay of Biscay and English Channel; and GECC: 150 in the English Channel.
- Cetaceans, New Caledonia (OCNC). Sighting data are collected from incidental sighting forms returned by scientists.
- Cetaceans, Mayotte (OMM). Sighting data are collected from incidental sighting forms returned by scientists and the general public.
- Cetaceans, La Réunion (GLOBICE). Sighting data are collected from incidental sighting forms returned by scientists and the general public.

3. Marking data

3.1 Field work

3.1.1 NATURAL MARKING DATA

Species	Feature	Area/stock	Calendar year/season/ no. <small>Photographed</small>	Catalogued (Y/N)	Catalogue total	Contact person/institute
Humpback whale	Fluke	N. Caledonia	2003	Y(284)	47	OCNC
Humpback whale	Fluke	Mozambique chan.	2003	Y (184)	45	OMM
Humpback whale	Fluke	Caribbean (Guadeloupe)	2003	Y	3	ET
Humpback whale	Fluke	Occidental Indian Ocean	2003	Y (14)	11	GLOBICE
Sperm whale	Fluke	NW Med	2003	Y (65)	18	GREC
Sperm whale	Fluke	Caribbean (Martinique)	2003-2004	Y	7	SEPANMAR/GREC
Sperm whale	Fluke	Caribbean (Guadeloupe)	2003	Y	85	ET
Striped dolphin	Dors Fin	NW Med	2003	Y	109	CRC
Bottlenose dolph.	Dors Fin	English Channel	2003	Y (80)	20	GECC
Bottlenose dolph.	Dors Fin	Brittany	2003	Y	45	Océanopolis
Bottlenose dolph.	Dors.Fin	Bay of Biscay	2003	Y	7	CRMM
Bottlenose dolph.	Dors.fin	NW Med	2003	Y	208	GECEM
Bottlenose dolph.	Fluke	Occidental Indian Ocean	2003	Y	15	GLOBICE
Risso's dolphin	Dors Fin	NW Med	2003	Y	11	GREC
Risso's dolphin	Dors fin	NW Med	2003	Y	44	GECEM
Long-fin. pilot w.	Dors Fin	Bay of Biscay	2003	Y	67	CRMM
Killer Whale	Dors Fin	Occidental Indian Ocean	2003	Y (121)	69	CEBC

3.1.2 TRACKING DATA

- An extensive tracking project has been carried out on the northwest Mediterranean fin whales by CEBC. Eleven individuals in total were equipped with satellite tags.

4. Tissue/biological samples collected

4.1 Biopsy samples

Species	Area/stock	Calendar year/ season / N. collected	Archived (Y/N)	No. Anal ysed	Total holdings	Contact person/institute
Minke whale	N. Caledonia	Winter 2003	Y (1)		1	OCNC
Humpback w.	N. Caledonia	July-sept 2003	Y (461)		99	OCNC
Humpback w.	Mozambique chan.	July-nov 2003	Y (96)		10	OMM
Fin whale	Mediterranean	2003	Y (15)		4	CEBC

Biopsy samples listed above are collected for genetic analyses.

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	2003/3	Y	Various tissues	CRMM
Pygmy Sperm whale	Atlantic	2003/1	Y	Various tissues	CRMM
Cuvier's beaked w.	Atlantic	2003/1	Y	Various tissues	CRMM
Cuvier's beaked w.	Mediterranean	2003/1	Y	Various tissues	GECEM
Common dolph.	Atlantic	2003/42	Y	Various tissues	CRMM/GEFMA/GECC
Striped dolph.	Atlantic	2002/16	Y	Various tissues	CRMM/GEFMA
Striped dolph.	Mediterranean	2003/12	Y	Various tissues	GECEM
Bottlenose dolph.	Atlantic.	2003/12	Y	Various tissues	CRMM/GEFMA
Bottlenose dolph.	Mediterranean	2003/2	Y	Various tissues	GECEM
Long fin. pilot. W	Atlantic	2003/5	Y	Various tissues	CRMM
Risso's dolph.	Atlantic	2003/1	Y	Various tissues	CRMM
Harbour porpoise	Atlantic	2003/12	Y	Various tissues	CRMM/GEFMA/GECC

*e.g. liver, skin, blubber etc.

5. Pollution studies

- Samples are collected from stranded specimens on the coasts of France by CRMM and pollutant analyses (heavy metals) are carried out by LBEM, University of La Rochelle. In 2002, 105 specimens were sampled for ecotoxicological study, including 10 Bottlenose dolphin, 8 Striped dolphins, 82 Common dolphins, 5 Harbour porpoises. Similarly, samples were transmitted to NIOZ, Texel, the Netherlands, for POPs analyses.
- Samples are also collected from the Mediterranean coasts for pollutant analyses by GECEM.

7. Statistics for small cetaceans

7.1 For the calendar year 2002

- In 2003, CRMM recorded 61 stranded cetaceans with marks suggesting incidental catch in fishing gear along the Atlantic coast. For the Mediterranean Sea, GECEM reported 11 by-caught delphinids.

Species	Area/stock	Directed catch		Incidental mortality			Live-capture Reported
		Reported	Est. Total	Reported	Est. total	Source	
Common dolphin	Atlantic	0	0	41	No data	CRMM	0
Striped dolphin	Atlantic	0	0	4	No data	CRMM	0
Bottlenose dolphin	Atlantic	0	0	3	No data	CRMM	0
Bottlenose dolphin	Mediterranean	0	0	11	No data	GECEM	0
Long finned pilot w.	Atlantic	0	0	1	No data	CRMM	0
Harbour porpoise	Atlantic	0	0	10	No data	CRMM	0

8. Strandings

In 2003, CRMM (with a participation of all partners of the National Stranding Scheme) recorded around 400 stranded cetaceans along the coasts of France, 139 for the Mediterranean Coast, 69 on the English Cannel coast and around 200 on the Atlantic coast. Data are not fully compiled at the date of preparing this report. Stranded cetaceans found in overseas territories are not exhaustively recorded: however partial data are available for New Caledonia (OCNC), Martinique (Guadeloupe (ETr) and La Réunion Island (GLOBICE).

11. Publications

11.1 Published or 'In Press' papers only

- Buffrénil, V. De, Dabin, W. and Zylberberg. L. 2004. Histology and growth of cetacean petro-tympanic bone complex. *J. Zool.*, London 262 : 371-381.
- Bustamante, P., Garrigue C., Breau L., Caurant F., Dabin W., Greaves J. & Dodemont R. 2003. Trace elements in two odontocete species (*Kogia breviceps* and *Globicephala macrorhynchus*) stranded in New Caledonia (South Pacific). *Environmental pollution* 124 : 263-271.
- Dabin, W., Cesari, C., Clemenceau, I. Dhermain, F. Jauniaux, T. Van Canneyt, O. and Ridoux, V. 2003. Double-faced monster in the bottlenose dolphin (*Tursiops truncatus*) found in the Mediterranean sea. *Vet. Rec.*, vol153, 154 (10) : 306-308.
- Drouot, V., Gannier, A. & Goold, J.C. 2004. Social distribution and behaviour of sperm whales (*Physeter macrocephalus*) in the Mediterranean Sea. *Journal of Marine Biological Association of UK* 84: 675-680.
- Drouot, V., Bérubé M., Gannier, A., Goold, J.C & Palsboll, P.J. 2004. A note on genetic isolation of Mediterranean sperm whales suggested by mitochondrial DNA. *J. Cetacean Res. Manage.* 6(1): 29-32.
- Dubroca, L.; Guinet, C. ; André, J.-M. ; David, L.; Beaubrun, P. 2004. Inter-annual variation in fin whale (*Balaenoptera physalus*) abundance in relation to oceanographic condition in the North-western Mediterranean Sea. *Progress in Oceanography (in press)*.
- Dubroca, L., Guinet, C., Monestiez, P., Andre, J.-M., Durbec, J.-P. 2004. Scale dependant correlation between the occurrence of fin whales (*Balaenoptera physalus*) sightings and oceanographic parameters in the Mediterranean Sea: a geostatistical approach. *Deep Sea Research (in press)*.
- Littaye A., Gannier, A., Laran, S. & Wilson, J.P.F, 2004. The relationship between summer aggregation of fin whales and satellite-derived environmental conditions in the northwestern Mediterranean Sea. *Remote Sensing of Environment* 90 (1): 44-52.
- Robineau, D., 2004. L'exploitation des baleines sous l'égide de la Commission Baleinière Internationale (1948-2001). *Bull. Soc. Zool. France* 129 (1-2) (in press).
- Robineau, D. and V. De Buffrénil, 2003. Early description of whales : D'Orbigny, A., 1834. Note on a new cetacean genus from the rivers of the central part of South America. *J. Cetacean Res. Manage.* 5 (3): 209-212.
- Sang-Mog, L. et Robineau, D. 2004. Les cétacés des gravures rupestres néolithiques de Bangudae (Corée du Sud) et les débuts de la chasse à la baleine dans le Pacifique nord-ouest. *L'Anthropologie* 108 : 137-151.

11.2 Unpublished literature

- Addink, M., Learmonth, J.A., Dabin, W., Murphy, S., Ridoux , V., Rogan, E., López, A., Santos, B. and Pierce, G. 2004. Some comparative observations of the ovary in harbour porpoise *Phocoena phocoena*. Abstract. *18th Conference of the European Cetacean Society*, Kolmarden 28-31 March 2004.
- Aubail, A., Caurant, F., Lahaye, V., Van Canneyt, O., Rogan, E., López, A., Addink, M. and Bustamante P. 2004. Lead contamination of small cetaceans of the European coasts - the use of stable isotopes for identifying the sources of lead exposure. *18th Conference of the European Cetacean Society*, Kolmarden, 29-31 March.
- Ben Naceur, L., Gannier, A., Drouot, V., Laran, S., Bourreau, S., Bradai, M.N., Karlfallah, N., Makhloufi, M. et Bdioui, M. 2003. Recensement du Grand Dauphin *Tursiops truncatus* dans les eaux Tunisiennes. *Actes de le 12eme conférence R.I.M.M.O*, Antibes, novembre 2003.
- Caurant, F., Lahaye, V., James, A., and Bustamante P. 2003 Role of selenium in the detoxification of mercury in the common dolphin *Delphinus delphis*. SETAC-ASE Asia/Pacific 2003 Conference "Solutions to Pollution", Christchurch (New Zealand), 28 September-1 October 2003.
- Dabin, W., Cossais F. and Ridoux V. 2003. Reconstructing individual female reproductive histories from the examination of ovarian scars in cetaceans: challenging results from the common dolphin. Abstract. *17th Conference of the European Cetacean Society*. Las Palmas, 9-13 March 2003.

- Delcroix, C., Bustamante, P., and Caurant, F (2003) Accumulation of vanadium in liver and kidney of small cetaceans along the French coasts after the Erika oil spill. 17th Conference of the European Cetacean Society, Las Palmas, 9-13 March 2003.
- Dhermain F., 2003a. *Suivi hivernal et recensement estival des Grands Dauphins en Corse. Actes de la 12eme conférence R.I.M.M.O*, Antibes, novembre 2003.
- Dhermain F., 2003b. *Suivi hivernal et recensement estival des Grands Dauphins en Corse*. Rapport GECEM pour la DIREN Corse et l'Office de l'Environnement Corse , 75 p.
- Dorémus, G., Dewez, A., Soulier, L., and Van Canneyt, O. 2003. Distribution of beached whales along the french coast : 30 years of stranding records. *17th Conference of the European Cetacean Society*, Las Palmas, 9-13 march 2003.
- Drouot, V., Gannier, A. and Goold, J. C., 2004. Integrated passive acoustic approach to evidence major sperm whale feeding ground in the French Mediterranean Sea. *18th Conference of the European Cetacean Society*, Kolmarden, 29 -31 March.
- Dubroca, L., Monestiez, P., Emilie, B., Durbec, J.P., André, J.M. and Guinet, C. 2003. Geostatistics approach of marine predator distribution : improvement and ecological implication. *15th Biennial conference on the biology of marine mammals*. Greensboro, NC, USA. 14-19 Décembre 2003.
- Dubroca, L., André, J.M., Bentaleb, I., Beaubrun, P. Bonin, E., Durbec, J.P. Mate, B., Monestiez, P. de Stephanis, R. and Guinet, C. 2004. Summer fin whales (*Balaenoptera physalus*) distribution in relation to oceanographic conditions and possible seasonal movement. CIESM Workshop Monographs n° 25. *Investigating the roles of cetaceans in marine ecosystems*. Venice, 28-31 January 2004.
- Gannier, A., 2003. The distribution of humpback whales (*Megaptera novaeangliae*) wintering in French Polynesia 1997-2002. Report SC/55/SW/16 to the 55th Annual meeting of the Scientific Committee, International Whaling Commission.
- Gannier, A., 2003. Les Dauphins des Marquises. Le Courrier de la Nature. Société Nationale de Protection de la Nature Eds.
- Guinet, C. and André, J-M. 2003. Analysing the spatial distribution of fin whales (*Balaenoptera physalus*) in relation to their environment : Observations and models in the N-W Mediterranean sea. Environmental consequences of underwater sound (ECOUS) San Antonio Texas, 12-16 Mai 2003.
- Jérémie, S., Bourreau, S., Gannier, A. and Nicolas, J.-C., 2004. Cetaceans in waters of Martinique (FWI), Lesser Antilles: results from a small boat acoustic and visual survey (March-April 2003). *18th Conference of the European Cetacean Society*, Kolmarden, 29-31 March.
- Lahaye, V., Bustamante, P., Das, K., Spitz, J., Meynier, L., Magnin, V., Caurant, F. 2004. Using Cd and Hg to discriminate dietary preferences of common dolphin and striped dolphin in the Bay of Biscay (France). *18th Conference of the European Cetacean Society*, Kolmarden, 29-31 March.
- Laran S., Gannier, A. et Bourreau S. 2003. Apport de l'acoustique sur un échantillonnage mensuel des populations de cétacés (radiale Antibes-Calvi). *Actes de la 12eme conference R.I.M.M.O*, Antibes.
- Laran S., Gannier, A., Bourreau, S., Littaye, A. and Joiris, C. 2004. Does spring bloom timing and intensity influence fin whale distribution in the Ligurian Sea ? *18th Conference of the European Cetacean Society*, Kolmarden, 29-31 March.
- Meissner, A. M., Gannier, A., Ridoux, V., Bourreau, S., Laran, S. and Lombrail, B. 2004. Spring distribution pattern and site fidelity of striped dolphins, *Stenella coeruleoalba*, off Nice (NW Mediterranean Sea). *18th Conference of the European Cetacean Society*, Kolmarden, 29-31 March.
- Meynier, L., C. Pusineri, J. Spitz, M. B. Santos, J. Massé, G. J. Pierce, et V. Ridoux. 2003. Long-term changes in the food of common dolphins (*Delphinus delphis*) in relation to fish stocks in the Bay of Biscay. *17th Conference of the European Cetacean Society*, Las Palmas, 9-13 march 2003.
- Pusineri, C., L. Meynier, J. Spitz, and V. Ridoux. 2003. Differential digestion rates of dolphin prey: observational and experimental bases for an improved dietary analysis procedure. *17th Conference of the European Cetacean Society*, Las Palmas, 9-13 march 2003.
- Pusineri, C., L. Meynier, J. Spitz, et V. Ridoux. 2004. An example of dietary overlap study between small cetaceans and fisheries from stomach content analysis. CIESM Workshop Monographs n° 25. *Investigating the roles of cetaceans in marine ecosystems*. Venice, 28-31 January 2004.
- Ridoux, V., Van Canneyt, O., Doremus, G., et Certain, G. 2003. Détermination des habitats préférentiels estivaux des prédateurs supérieurs pélagiques du proche Atlantique par observations aériennes : rapport de campagne ATLANCET 2002 : 20p.
- Robineau, D., 2004. *Cétacés de France*. Faune de France n° 89, FFSSN éditeur (*in press*).
- Spitz, J., J. C. Pouillard, E. Richard, L. Meynier, C. Pusineri, et V. Ridoux. 2003. May changes in the diet of striped dolphins (*Stenella coeruleoalba*) from the Bay of Biscay reflects trends from groundfish surveys ? *17th Conference of the European Cetacean Society*, Las Palmas, 9-13 march 2003.
- Van Canneyt, O., Dabin, W., Demaret, F. and Ridoux, V. 2003. Multiple stranding, mass stranding and the possible social basis for common dolphin by-catch selectivity. *17th Conference of the European Cetacean Society*

- Society*, Las Palmas, 9-13 march 2003.
- Van Canneyt, O. 2003. Les échouages de mammifères marins sur le littoral français en 2002. *Annual report, Ministry of the Environment*, CRMM, La Rochelle, 41 p.
- Van Canneyt, O., Dorémus, G. et Ridoux, V. 2003. Etude et conservation des cétacés côtiers en région Poitou-Charentes. Rapport DIREN Poitou-Charentes : 42p.
- Van Canneyt, O., Dorémus, G., Caurant, F., Gautier, G., Massé, J. et Ridoux, V. 2003. Détermination des habitats préférentiels des prédateurs supérieurs pélagiques du proche Atlantique, campagne PELGAS 2003, bilan des observations : 14p.
- Van Canneyt, O., Spitz, J., Dorémus, G., Dabin, W., Anselme, G., Meslin, J.R., Brenez, C. and Ridoux, V. 2004. First report on Melon-headed whales (*Peponocephala electra*) stranded alive on the European coast. *18th Conference of the European Cetacean Society*, Kolmarden, 29-31 March.
- Wickel, J., Ersts, P. et Rosenbaum, H., 2004. Les baleines à bosse à Mayotte: Premier bilan des observations réalisées entre 2000 et 2002. Bulletin de l'Association « Naturalistes de Mayotte » 14 p.
- Wickel, J. et Rolland, R., 2004. L'Observatoire des Mammifères marins de Mayotte. *Communication orale lors du 4^{ème} comité national de l'Initiative Française pour les Récifs Coralliens* 24-28 mai 2004, Mayotte.
- Wickel, J, Rolland, R., Djanfar, A., Charlier, F., Abdou, I. et Abdou N. 2004. L'Observatoire des mammifères marins de Mayotte : bilan des actions réalisées et perspectives d'évolution. Rapport DAF/BPN. 26 p.