

**BRAZIL. PROGRESS REPORT ON CETACEAN RESEARCH, JANUARY 1998 TO
FEBRUARY 1999, WITH STATISTICAL DATA FOR THE CALENDAR YEAR 1998**

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Projeto Baleia Jubarte- Instituto Brasileiro do Meio Ambiente e dog Recursos Naturais Renovaveis (IBAMA), Caravelas, Bahia (BA);
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Laboratorio de Mamiferos Aquaticos (LMA), Instituto Nacional de Pesquisa da Amazonia (INPA), AM.

1. Species and stocks studied

Common name	Scientific name	Area/stock(s)	Items referred to
Bottlenose dolphin	<i>Tursiops truncatus</i>	S.W. Atlantic	2.1.1, 2.1.2, 3.1.1, 3.1.2, 4.3; 4.4; 5, 9
Fraser's dolphin	<i>Lagenodelphis hosei</i>	S.W. Atlantic	5, 4.3; 4.4, 9
Atlantic spotted dolphin	<i>Stenella frontalis</i>	S.W. Atlantic	2.1.1, 2.1.2, 4.3, 4.4, 5, 9
Tucuxi	<i>Sotalia fluviatilis</i>	S.W. Atlantic	2.1.1, 2.1.2, 2.2, 3.1.1, 4.1, 4.2, 4.3, 4.4, 7.1, 9
Spinner dolphin	<i>Stenella longirostris</i>	Fernando de Noronha (NE Brazil)	2.11, 2.2, 3.1.1
Rough-toothed dolphin	<i>Steno bredanensis</i>	S.W. Atlantic	2.1.1, 2.2, 3.1.1, 3.2, 4.3, 9
Common dolphin	<i>Delphinus spp.</i>	S.W. Atlantic	9
Risso's dolphin	<i>Grampus griseus</i>	S.W. Atlantic	4.1
Clymene dolphin	<i>Stenella clymene</i>	S.W. Atlantic	2.1.1, 3.1.2
Pantropical spotted dolphin	<i>Stenella attenuata</i>	S.W. Atlantic	4.1
Franciscana	<i>Pontoporia blainvillei</i>	Southern coast of	2.1.1, 2.2, 3.1.2, 4.1, 4.2,

		Brazil	4.3; 4.4; 5, 7.1, 9
Boto	<i>Inia geoffrensis</i>	Central Amazon	2.2, 3.1.2, 3.1.3, 4.1, 4.2
False killer whale	<i>Pseudorca crassidens</i>	S.W. Atlantic	4.3, 5, 9
Killer whale	<i>Orcinus orca</i>	S.W. Atlantic	2.1.1, 2.1.2, 9
Melon-headed whale	<i>Peponocephala electra</i>	S.W. Atlantic	2.1.1
Long-finned pilot whale	<i>Globicephala melas</i>	S.W. Atlantic	2.1.1, 4.3
Short-finned pilot whale	<i>Globicephala macrorhynchus</i>	S.W. Atlantic	2.1.1
Sperm whale	<i>Physeter macrocephalus</i>	S.W. Atlantic	2.1.1, 4.3
Beaked whale	<i>Mesoplodon sp.</i>	S.W. Atlantic	2.1.1
Humpback whale	<i>Megaptera novaeangliae</i>	S.W. Atlantic	2.1.1, 2.1.2, 2.2, 3.1.1, 4.1, 4.3, 8, 9
Minke whale	<i>Balaenoptera acutorostrata</i>	S.W. Atlantic	2.1.1, 2.1.2, 4.3, 4.4
Southern right whale	<i>Eubalaena australis</i>	S.W. Atlantic	2.1.1, 2.1.2, 3.1.1, 4.1, 4.3, 6.2, 8
Bryde's whale	<i>Balaenoptera edeni</i>	S.W. Atlantic	2.1.1

2. Sightings data

2.1 Field work

2.1.1 SYSTEMATIC

Vessel Name	Vessel Type	Top Barrel	Period and Region	Species Seen	Number of Animals	Researchers
Sagamore 13m 420 HP two engines	Launch	10m	Jan; Nov-Dec 1998 Ilha Grande Bay/Southeast Brazilian coastline	<i>T. truncatus</i> <i>S. frontalis</i> <i>S. fluvialis</i> <i>S. bredanensis</i>	8 aprox. 20 ♦ 200 (+) ** 20 + 30 **	L. Lodi & B. Hetzel
Ticarola 10,5m 45 HP one engine	Trawler	7m	Aug-Dec Ilha Grande Bay/Southeast Brazilian coastline	<i>S. fluvialis</i> <i>S. fluvialis</i> <i>S. fluvialis</i> <i>S. bredanensis</i> <i>O. orca</i> <i>M. novaeangliae</i>	10 * 158 ** 84 18 ** 1 adult male 1	L. Lodi & B. Hetzel
From the beach	Small engine boats		Jan – Dec 1998 Laguna-SC and Tramandai-RS July - Sep 1998 Arvoredo Island	<i>T. truncatus</i>	150-200	P.C. Simões-Lopes and M. Cremer
From the beach	Small boats		Jan – Dec 1998 Baia da Babitonga-SC	<i>S. fluvialis</i>	10	M. Cremer
	Small boats		Jan – Dec 1998 Baia da Babitonga	<i>P. blainvillei</i>	15	P.C. Simões-Lopes and M. Cremer
Far Sleipner	M/V 67,20m	9,1m	6-8 Aug 1998	<i>E. australis</i> ; <i>S. fluvialis</i>	2 >100	J.L. Pizzorno; S. Siciliano
			19-21 Sep 1998	<i>M. novaeangliae</i> ; <i>T. truncatus</i> ; <i>G. griseus</i>	21 3 8-10	J.L. Pizzorno
Scan Carrier	M/V 82,35m	9,8m	22-25 Aug 1998	<i>E. australis</i> ; <i>M. novaeangliae</i> ; <i>T. truncatus</i>	1 27 12 s	J.L. Pizzorno; S. Siciliano
Oil Traveller	M/V 67,20m	9,1m	26-28 Nov 1998	<i>M. novaeangliae</i> ; <i>T. truncatus</i>	3 2	J.L. Pizzorno; S. Siciliano
Astro Garoupa	M/V 57,16m	10,2m	27-30 Jan 1999	<i>B. edeni</i> ; <i>Mesoplodon sp.</i> ; <i>S. longirostris</i> ; <i>T. truncatus</i>	3 40 15	J.L. Pizzorno; S. Siciliano
Catifúnio	Saveiro		Monthly – Barra do Paraguaçu / Baía	<i>S. fluvialis</i>	Approx. 50.	MAMA-BA

			de Todos os Santos, BA			
Paty	Saveiro		Monthly – Barra do Paraguaçu / Baía de Todos os Santos, BA	<i>S. fluvialilis</i>	Approx. 70	MAMA-BA
			March.-April Praia de Itapoa	<i>B. acutorostrata</i>	2	MAMA-BA
Náutica	Lancha Oceânica		June-Nov – Praia do Forte / litoral norte-BA	<i>M. novaeangliae</i>	18	MAMA-BA
Náutica	Lancha Oceânica		June-Nov – Praia do Forte / litoral norte-BA	<i>T. truncatus</i>	Approx. 47	MAMA-BA
Rbam Alte Guilhem	Ocean fleet tug	10 m	23 Sep – 05 Oct NE Coast of Brazil (5 to 9 degrees S up to 80 miles far from coastline)	<i>B. acutorostrata</i> , <i>M. novaeangliae</i> , <i>B. edeni</i> <i>P. electra</i> <i>S. attenuata</i> <i>S. clymene</i> <i>S. longirostris</i> <i>P. macrocephalus</i> <i>T. truncatus</i> Unid. Whale Unid. Dolphins Unid. Ceteceans <i>Globicephala sp.</i>	57 5 2 12 475-482 102-132 75-85 1 30 16 88 1 10-15	Alexandre N. Zerbini; Jesuina M. da Rocha

◆ - juveniles

** - calves

*- juveniles and calves

Projeto Golfinhos (RJ) The objectives were to observe standard behavior, social structure, and use of the area, photo-identification, feeding and ecological behavior of rough-toothed dolphins. Sightings, behavioral observations, and distribution of the bottlenose dolphin, Atlantic spotted dolphin, tucuxi, killer whale, and humpback whale were recorded opportunistically.

Instituto Baleia Jubarte Weekly 4 days cruise during the winter season -July to November in Abrolhos Bank region, Bahia- Brazil -17°30'18"20'S/ 38°30'-39°15'W A total of 446.89 hours of observations and, 2,099.4 miles were cruised. In total, 794 whales were seen, including 107 calves and 19 subadults. On average 1,77 whale were seen per hour and 0.37 per nautic mile. Cruises for photo-identification and behavioral observations were performed. Based land surveys from the highest point of Santa Barbara Island at Abrolhos Archipelago were made. Theodolite tracking of humpback whales focal groups and interaction of whale watching boats/whales. Scan within 5 nautical miles from the observation point, group composition, behavioral state, and localization of all groups in this area were also registered.

LAND BASED SURVEY OF HUMPBACK WHALE – 1998

Scans - 1998	Morning	Afternoon	Total
No of scans	106	63	169
No of scans hours	106	63	169
No of humpbacks sighted	1153	601	1754
No of humpbacks groups sighted	546	300	846
No of calves sighted	227	109	336
No of groups with composition indetermined	78	50	128
No of 1 ADULT	54	46	100
No of DYADS	136	67	203
No of TRIOS	29	16	45

No of 4 or + ADULTS	22	12	34
No of MOTHER and CALF	135	67	202
No of MOTHER with CALF and 1 ESCORT	79	34	113
No of MOTHER with CALF and 2 or + ESCORTS	13	8	21

LAND BASED SURVEY- 1998 FOCAL GROUPS OBSERVATION

Groups	No of observation as focal groups	Total ime of observation
Humpback whale		
Mother and calf	45	63h 43m 14s
Mother, calf, one scort	23	30h 50m 46s
Mother, calf + 2 more scort	2	57m 57s
1 adult	13	13
Dyad	23	28h 8m 57s
Trio	8	6h 55m 10s
4 or + Adults	2	2h 31m
Total	116	146h 25m 39s
Southern right whale	1	46m 41s

INPA, LMA (AM) A total of 28 surveys to determine the absolute abundance and markrecapture of botos were carried out. Group size, group structure, number of individuals, and use of habitat were recorded.

GECET (BA) *S. fluviatilis* is found year-round in Baia de Todos os Santos (12°55'S e 38°35'W -BA). The following has being studied: population (using video), craniometric, distribution, monitoring, strandings, stomach contents analysis, pectoral fin analysis for age development, tissue samples for DNA analysis. Humpback whales are frequently seen from July to November during the reproductive period and are frequently monitored in the Coastal area of Salvador State and Baia de Todos os Santos (BA).

The terrestrial surveys were done by car and the marine surveys (in the Baia de Todos os Santos) using a 50 Hp engine boat (Catarina Paraguacu).

2.1.2 OPPORTUNISTIC, PLATFORMS OF OPPORTUNITY

Projeto Golfinhos (RJ) -Sightings, behavioral observations and distribution of the bottlenose dolphin (n=1; spring), Atlantic spotted dolphin (n=1; spring), tucuxi (?) (n = 9; summer and winter), killer whale (n = 1; winter) and humpback whale (n = 1; winter) were recorded during boat surveys for rough-toothed dolphins research program. Intensive work in environmental education has been developed to local communities to protect cetaceans in Ilha Grande Bay. Unusually big aggregations - 150 to at least 450 individuals of tucuxi (?) were seen at Ilha Grande Bay). The function of those aggregations is not well known. There are no evidences that the group size could be related to protection against predators. Description of marine tucuxi behavior, use of habitat, movements, patterns of coloration, presence of calves, and interaction with fisheries are being monitored. For further information contact L. Lodi and B. Hetzel. (Project sponsored by Fundacao O Boticario de protecao a Natureza / MacArthur Foundation and Cetacean Society International).

Museu Nacional/UFRJ One minke whale was recorded on a cruise in the Bacia de Campos (RJ).

Instituto Baleia Jubarte Two cruises outside the study area were carried out -from 18° 20'S / 39° 15'W to 22°39'S / 41° 43'W, Southeast coast of Brazil, on November and December- 1998, with a total of 17 hours of observation and 207 nautical miles navigated. A total of 18 humpback whales (7 calves and 11 adults) were sighted. During photoidentification cruises and land based survey, the following sighting occurred: southern right whale: 1 adult (cruise), two

mother/calf (cruise), and three mother/calf (land based).

2.2 Analyses/development of techniques

Projeto Golfinhos (RJ) Sequential and focal methods of sampling were used during the sighting expeditions for direct observations of cetaceans in the area of Ilha Grande Bay. Filming was accomplished in order to document the behavior of the rough-toothed dolphins and other cetaceans to facilitate analyses of complex situations. Information was recorded in standard field records. Whenever possible pictures were taken.

Museu Nacional/UFRJ The densities of whales per route were carried out using conventional methodology.

Centro Golfinho Rotador, Fernando de Noronha/PE The following aspects about spinner dolphin were studied: seasonal variation in number of animals, time of permanence at Baia dos Golfinhos, permanence at Baia dos Golfinhos in relation to the presence of tourist boats. Description of the behaviors observed while snorkeling. Humpback whale: observation from a fixed post and from a boat.

UENF (CBB)- An ongoing study of franciscana and tucuxi fishing activities has been taking place. The study focuses on: numbers of dolphins incidentally caught in gillnets, age analysis, reproductive cycle, feeding habits, and morphological differences from collected carcasses. From April 1998 to February 1999, 26 small cetaceans were seen in Rio de Janeiro coastal areas. The data are being analyzed as part of the MSC thesis of A.P. M. Di Benedetto (Feeding Ecology of *P. blainvillei* in the North Coastal Areas of Rio de Janeiro State) and R. Ramos (Morphological Variations and Growth Analysis of *P. blainvillei* and *S. fluviatilis* in SE Brazil).

INPA, LMA (AM) A long-term study of the boto is being carried out. Telemetry and marking techniques are being used to study daily and seasonal movements, site fidelities, use of habitat, group structure, birth intervals, growth, and reproductive cycles. During catching, morphometrics, weight, blood, milk, and tissue samples are collected whenever possible (da Silva and Martin, in press). (Sponsored: CNPq, INPA, SCM, National Geographic (US), and Darwin Initiative (UK).

3. Marking data

3.1 Field work

3.1.1 NATURAL MARKING DATA

Species	Feature	Area/Stock	Number of animals photographed	Catalogue (Y/N)	Catalogue total	Contact Person / Institute
Humpback whale	Fluke	W.S. Atlantic	being analysed	Y	466 (until 1997)	Projeto Baleia Jubarte
Southern right whale		S.W. Atlantic	12	Y	12	J.T. Palazzo/ International Wildlife Coalition/Brazil
Spinner dolphin	Natural marks on dorsal fin		200	Y	200+	Centro Golfinho Rotador, Fernando de Noronha /PE
Tucuxi	Natural Marks and dorsal fin	Baía de Sepetiba, Rio de Janeiro	50	Y	75	Jose Luis Pizzorno , Lab. Bioacústica de Cetáceos, UFRRJ
		Baía de Guanabara, Rio de Janeiro.	2	Y	58	
	Dorsal fins	Barra do	2	Y	15	Maria do Socorro

		Paraguaçu / baía de Todos os Santos				e Luciano W. Dórea-Reis MAMA-BA
Rough toothed dolphin	Natural Marks and dorsal fin	Ilha Grande Bay, Rio de Janeiro state	5	Y	5	L. Lodi and B. Hetzel / Projeto Golfinhos
Bottlenose dolphin	Natural marks on dorsal fin	Southern Brazil	33	Y		P.C. Simões-Lopes LAMAQ (UFSC)

3.1.2. ARTIFICIAL MARKING DATA

Projeto MAMA (Mamíferos Marinhos - BA) Plastic tags were placed on two bottlenose dolphin and one clymene dolphin with the initials (PM CTV0001DELF; PM CTV0002DELF; PM CTV0003DELF), respectively. These three stranded animals were rescued from stranding and rehabilitated.

INPA (AM) A total of 21 botos were artificially marked with freezing-brand on both sides of the body and colored plastic tags (cattle ear-tag). Since the beginning of the project (1994), a total of 134 botos were marked and monitored.

3.1.3 TELEMETRY DATA

Species	Tag type	No. Successfully deployed	Maximum time transmitting	Contact person/institute
Boto	VHF radio		5 month; 7 still working in Feb 99	V.M. F. da Silva, INPA (AM); T. Martin (SMRU, UK)

INPA (AM) A total of 49 VHF radios were put on dorsal fin of adult botos in the Central Amazon since 1994. The maximum transmitting time was 13 months.

4. Tissue/biological samples collected

4.1 Biopsy samples

Species	Areas	Calendar year 1998	Archived (Y/N)	Number analyzed	Total holdings	Contact person/institute
Tucuxi	S.W. Atlantic	05	Y	0	05	Renata Ramos – UENF,
Franciscana	S.W. Atlantic	05	Y	0	05	Renata Ramos UENF
Humpback whale	W S Atlantic	45	Y	0	45	Projeto Baleia Jubarte
Southern right whale	W S Atlantic	1	N	0	01	Paulo Ott - Projeto Baleia franca
Southern right whale	S.W. Atlantic	12	Y	0	-	Paulo Ott/GEMARS
Risso's dolphin	Praia do Cantagalo- BA	1	Y	1	01	Maria do Socorro Reis / Luciano Wagner D. Reis - MAMA/UESC-BA
Pantropical spotted dolphin	Praia de Itapoan - Salvador-BA,	1	Y	1	1	Maria do Socorro Reis / Luciano Wagner D. Reis - MAMA/UESC-BA
Boto	Central Amazon	21	Y	0	145	Vera M.F.da. Silva (INPA)

4.2 Samples from directed catches or by catches

Species	Area/stock	Calendar year 1998	Archived (Y/N)	Tissue type(s)*	Contact person/institute
Boto	Central Amazon	1	Y	Skin	Vera M. F. da Silva (INPA)
Tucuxi	Ilhéus-BA	1	Y	Heart, muscle	Maria do Socorro Reis / Luciano Wagner D. Reis MAMA/UESC-BA
Franciscana	Praia Grande SP	3	Y	Skull, postcranial skeleton and	Alexandre Zerbini and C.P. Bertozzi IB- USP

				tissue samples from different organs	
Franciscana	Northern Rio Grande do Sul	15	Y	Gonads, liver, kidney, blubber, muscle, stomach, teeth and skull.	Daniel Danilewicz - GEMARS

4.3 Samples from stranded animals

Total number of strandings correspond to season April 1998 to February 1999, or otherwise stated

Species	Area/stock	Apr 98-Feb.99	Archived (Y/N)	Tissue types (total)	Contact person/institute
Minke whale	W.S. Atlantic	1	Y	skin, muscle	M.C.Pinedo/FURG
Fraser's dolphin	W.S. Atlantic	3	Y	Skull (3), stomach (1), muscle (1)	M.C. Pinedo/FURG
Franciscana	Southern (south RS)	73	Y	Teeth (49), skull (1), blubber (2)	M.C.Pinedo/FURG
	Southern (north RS)	17	Y	teeth (14), skull (1)	M.C.Pinedo/FURG
False killer whale	W.S. Atlantic	1	Y	Skull	M.C. Pinedo/FURG
Spotted dolphin	W.S.Atlantic	1	Y	Skull, stomach, muscle, parasites	M.C.Pinedo/FURG
Bottlenose dolphin	W.S. Atlantic	1	Y	skull, muscle, parasites	M.C.Pinedo/FURG
Sperm whale	W.S. Atlantic	1	Y	-	M.C. Pinedo/FURG
Tucuxi	W.S. Atlantic	2	Y	Yes	A.P.Di Benedetto/ UENF(CBB)
Rough-toothed dolphin	W.S.Atlantic	1	Y	Skull	M.C. Pinedo/FURG
Southern Right whale	W S Atlantic	1	N	Skull, postcranial skeleton	Paulo Ott - Projeto Baleia Franca
Tucuxi	S W Atlantic	5	Y	Skull, postcranial skeleton	C. L. Parente e J. E. Vergara / Centro Mamíferos Aquáticos/IBAMA
Long-finned pilot whale	SW Atlantic	1	Y	Skull, postcranial skeleton	C. L. Parente e J. E. Vergara / Centro Mamíferos Aquáticos/IBAMA
Fraser's dolphin	WSA/Praia Seca, Araruama, RJ			Muscle	S. Siciliano/Museu Nacional/UFRJ
Southern right whale	WSA/Rio das Ostras, RJ			Muscle	S. Siciliano/Museu Nacional/UFRJ
Franciscana	WSA/Gargaú, RJ			whole specimen in alcohol	S. Siciliano/Museu Nacional/UFRJ
Franciscana	Northern Rio Grande do Sul	15	Y	Gonads, liver, kidney, blubber, muscle, stomach, teeth and skull.	Daniel Danilewicz GEMARS
Bottlenose dolphin	Northern Rio Grande do Sul	04	Y	Gonads, liver, muscle, stomach, teeth and skull.	Daniel Danilewicz
Rough-toothed dolphin	Northern Rio Grande do Sul	01	Y	Gonads, liver, kidney, blubber, muscle, stomach, teeth and skull	Daniel Danilewicz
Sperm whale	Northern Rio Grande do Sul	01	Y	Muscle and parasites.	Daniel Danilewicz
Humpback whale	Northern Rio Grande do Sul	01	Y	Muscle, blubber and parasites	Daniel Danilewicz
Southern right whale	Northern Rio Grande do Sul	01	Y	Skin, blubber and parasites.	Daniel Danilewicz

Minke whale	Northern Rio Grande do Sul	01	Y	Skull and muscle	Daniel Danilewicz
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4.4 Analyses/development of techniques

FURG - Age estimation based on growth layer groups (GLGs) from teeth of franciscana, bottlenose dolphin and Fraser's dolphin. Diet and parasite analyses of small cetaceans (Andrade *et al.* 1998). Mitochondrial DNA analyses of franciscana, in collaboration with P. Rosel (NOS/NOAA, SC, USA).

Projeto MAMA (Mamíferos Marinhos -BA) Usage of (spaghetti like) floats in order to maintain the animal in the rehabilitation tank. Usage of an endoscopic probe to aid in the feeding process during rehabilitation of the animals. Using surgical techniques in large wounds, and local anaesthetics. Usage of ethnoecology methods to collect data in the field a cetaceans/fishing interaction using fishermen's information.

UENF (CBB)- Estimation based on (growth layer groups) GLG, from teeth of tucuxi and franciscana. Stomach contents analysis and skull morphology.

LAMAQ (UFSC) Age determination using GLG for spotted dolphin, tucuxi, and bottlenose dolphin. Comparative studies of apendicular skeleton and fractures and pathological alterations of the axial skeleton on several small species of cetaceans. Systematic studies on minke whale. Improving cutting and polishing techniques to study teeth (Financed by O Boticario and Conselho Nacional de Desenvolvimento Cientifico e Tecnológico -CNPq).

Departamento de Zoologia (USP) -The following biological and tissue samples were collected for genetic analysis, contamination levels, and population dynamics: stomach, gonads, teeth, muscle, liver, kidney, blubber, and skeleton. Skull osteological studies of minke whale in order to classify the taxonomy of the species were completed as part of a Masters Dissertation by A. Zerbini. DNA analysis of minke whale is in progress with Dr. L. Pastene's collaboration (Institute of Cetacean Research). Genetic studies of Spotted dolphin and Tucuxi are being conducted with cooperation and under the responsibility of Dr. M. Furtado (Universidade Federal do Ceara). Linear transect methods have been applied to estimate the relative abundance during cruises of the REVIZEE Program. The same methods were used to estimate cetacean's abundance with priority on minke whale during a cruise done by IBAMA in the NE region of Brazil. (Financed by Conselho Nacional do Desenvolvimento Cientifico e Tecnológico (CNPq); Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renovaveis (IBAMA), Comissao Interministerial para os Recursos do Mar (CIRM), Ministerio do Meio Ambiente (Programa REVIZEE); and Cetacean Society International (CSI).

LMA, INPA (AM) - In collaboration with Dr. A Hohn (USA), teeth of tucuxis from 6 different areas of distribution of the species were processed to study the differences in the patterns of the GLG in the dentine among the different populations. A guide to help consistency on age estimation of tucuxis is being developed. Genetic studies of Spotted dolphin and Tucuxi are being conducted with cooperation and under the responsibility of Dr. M. Furtado (Universidade Federal do Ceara).

GECET (BA) Stomach contents analysis (to determine the feeding habit) and age determination using x-ray of the pectoral fin analysis on tucuxi. (Financed by FNMA -Fundo Nacional do Meio Ambiente).

5. Pollution studies

MAQUA (UERJ) -Metal traces concentration analysis in different tissues of tucuxi, franciscana, spotted dolphin, Fraser's dolphin, bottlenose dolphin and false killer whale off the coast of Rio de Janeiro State are being performed as part of a Masters dissertation. The technique used IS a variation of the method used by Caurant *et al.* (1994) for AAS and ICP-MS.

Departamento de Zoologia - USP -Tissue samples (blubber, liver, and rim) has been collected for organopersistentes and heavy metals analysis.

GEMARS -Samples of blubber, kidney and liver of all cetaceans species found have been collected for future contaminant studies.

6. Statistics for large cetaceans

6.1 *Direct catches (commercial, aboriginal and scientific permits) for the calendar year 1988*

6.2 *Other non-natural mortality for the calendar year 1998 or the season 1998/99.*

GEMARS A southern right whale was found stranded in the study area presenting evidences of collision with ship

6.3 *Earlier years' statistics*

7. Statistics for small cetaceans

7.1 *Incidental mortality for the calendar year 1998*

Species	Area/stock	Reported	Est. total	Fishery type	Locality
Franciscana*	Southern (north RS)	17	-	Gillnet	29°20'S-31°21'S
Franciscana*	Southern (south RS)	61	-	Gillnet	31°21'S-33°45'S
Franciscana	Praia Grande – S.P. State	-	3 live animals	-	-
Franciscana	Praia Grande – S.P. State	-	4	Gillnet	-
Franciscana	SW Atlantic	06	06	Gillnet	-
Tucuxi	SW Atlantic	03	03	Gillnet	-
Tucuxi	North of RJ State	-	8	Gillnet	-
Franciscana	North of RJ State	-	7	Gillnet	-
Unidentified	North of RJ State	-	9	Gillnet	-
Boto	Central Amazon	01	-	Gillnet	-
Franciscana	Northern Rio Grande do Sul	-	15	Gillnets	-

* stranded, but cause of death attributed to incidental capture.

8. Strandings

Information on strandings can be obtained upon request from: M.C. Pinedo (FURG), M.S. Reis and L. W. Dorea-Reis Projeto MAMA (Mamíferos Marinhos -BA), Dr. P. C. Simoes-Lopes (LAMAQ/UFSC), R. Ramos and A.P. OJ Beneditto (UENF -CBB), A. Freitas and M. Engel (Projeto Baleia Jubarte/IBAMA), J. L. Brito Jr. and A. de F. Azevedo (Projeto Mamíferos Aquáticos -UERJ), S. Siciliano (Museu Nacional/UFRJ) A.N. Zerbini and C.P. Bertozzi (Departamento de Zoologia -USP), E. Queiroz, A.R. Pereira, and E. de C. Aroucha (GECETBA), D. Danilewicz, P. H. Ott, (GEMARS).

9. Other studies and analyses

FURG -Stock identity, based on genetic and morphometric analyses of the bottlenose dolphin from southwestern Atlantic is in progress. (Contact A. S. Barreto/M.C. Pinedo).

Projeto Golfinhos (RJ)- A series of interviews with fishermen and fisheries specialists in Ilha Grande Bay (RJ) are being conducted in order to establish patterns or relations between cetaceans' movements and occurrence and prey species abundance, and seasonally. Questions are being made about the use of dolphins in fisheries as bioindicators of fish schools presence. The first statements collected in those interviews indicate that in waters of 40 to 80m deep, in Ilha Grande vicinities (outside the bay), shark fisheries ("cayoeiras") are catching dolphins and using their flesh as bait. A network among local communities was created to rescue small cetaceans stranding alive. In 27 November 1998, 5 nautic miles from Jorge Grego Island (RJ), a 10m long trawler lost a long line with more than 400 hooks set to capture dolphin fish (Coryphaenidae), using

squid as prey which was dragged by a big whale (Balaenopteridae). This is the first record of a whale interaction with this kind of fishing gear. (Contact Liliane Lodi and Bia Hetzel/Projeto Golfinhos).

Projeto MAMA (Mamíferos Marinhos -BA) Stomach contents of 5 tucuxis were analyzed. Using an Index of Relative Importance (IRI) we found: fish (17,303), Cephalopod (1,021), Nematodes (198,6), and other items (19,94). The species of fish found are from shallow coastal areas frequently found in bays and estuaries (*Trichiurus lepturus*, *Bairdiella rhoncus*, e *Gerres sp*). Those species typically occur in estuaries.

Instituto Baleia Jubarte – IBAMA From the highest point of Santa Barbara Island at Abrolhos Archipelago, interactions between humpbacks and vessels are being tracked using electronic digital theodolite. During 1998 season 42 interactions were registered:

Humpback groups	Speed boats	Trawlers	Schooners	Sail boats	Zodiacs	Total
Mother and calf	1	6	4	1	3	15
Mother, calf, 1 scort	0	3	4	0	0	7
1 Adult	1	3	1	2	0	7
Dyad	2	2	1	0	1	6
Trio	0	3	0	0	1	4
4 or more adults	2	0	0	0	1	3
Total	6	17	10	3	6	42

The total time of interaction registered is described in the table below:

Humpback groups	Number of interactions	Total time of observation
Mother and calf	15	25h 24m 40s
Mother, calf, 1 scort	7	9h 00m 42s
1 Adult	7	17h 54m 21s
Dyad	6	10h 30m 11s
Trio	4	3h 52m 05s
4 or more adults	3	49m 32s
Total	42	67h 3m 30s

Centro Mamíferos Aquáticos/IBAMA Between September 4th to 26th, 1998, a *S. fluviatilis* arrived in a natural pool in the beach of Pontal of Maracaipe, south coast of Pernambuco State. The dolphin presented stress signs, and was monitored daily by the team of the Centro Mamíferos Aquáticos/IBAMA and students of the Group of Study of Sirens, Cetaceans and Quelonios of Pernambuco (GESCCQ-PE). A total of 31,5 hours of continuous observation were accomplished. The data analysis showed that the animal spent 54% in slow displacements. After 22 days of observation, the animal disappeared and three days after its disappearance, a carcass was found. The carcass was similar in size and appearance to the to the observed animal. In the necropsy, algae were found from the esophagus to the pyloric stomach, liquid fecal content in the intestine, and an abnormality in a portion of the intestinal loop.

GEMARS The following was studied about franciscanas: body variation condition due to ontogeny, seasonality, sexual dimorphism, and activity; genetic variability and population structure (using nuclear markers -microsatellites); growth and reproduction (from Rio Grande do Sul State) A study on the diet of bottlenose dolphin, Fraser's dolphin, common dolphin, rough-toothed dolphin, spotted dolphin, and false killer whale is being carried out through analysis of stomach contents of animals stranded since 1991 in the study region.

LMA, INPA (AM)- Milk and blood biochemistry analysis of botos are in progress. (Contact V.M.F. da Silva)

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