

MEXICO. PROGRESS REPORT ON CETACEAN RESEARCH, JANUARY 2004 TO DECEMBER 2004, WITH STATISTICAL DATA FOR THE CALENDAR YEAR 2004.

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This report summarises information obtained from: Biosphere Reserve Banco Chinchorro (CONANP); Centro de Investigación en Alimentación y Desarrollo, S.C. (CIAD); Centro de Investigación Científica y de Educación Superior de Ensenada (CICESE); Investigación y Conservación de Mamíferos Marinos de Ensenada, A.C. (ICMME), Instituto Nacional de Ecología (INE), Lab. Ecología de los Mamíferos Marinos, Centro Interdisciplinario de Ciencias Marinas, Instituto Politécnico Nacional (CICIMAR-IPN); The SFS Center for Coastal Studies, Mexico A.C. (SFS); Universidad Nacional Autónoma de México Acoustics lab. (UNAM); Universidad Autónoma de Baja California Sur (UABCS).

1. Species and stocks studied

Common name	Scientific name	Area/stock(s)	Items referred to
Fin whale	<i>Balaenoptera physalus</i>	Gulf of California	2.1.1, 3.1.1,4
Bryde's whale	<i>Balaenoptera edeni</i>	Gulf of California	2.1.1
Blue whale	<i>Balaenoptera musculus</i>	NPacific (Baja California)	2.1.1, 3.1.1.,4
Sperm whale	<i>Physeter macrocephalus</i>	Pacific (Gulf of California)	2.1, 3.1.1,4,6,2
Bottlenose dolphin	<i>Tursiops truncatus</i>	Gulf of California, Gulf of México	2.1.1, 3
Short-finned pilot whale	<i>Globicephala macrorhynchus</i>	Gulf of California	2.1.1
Vaquita	<i>Phocoena sinus</i>	Gulf of California	2.1, 2.2
Kiler whale	<i>Orcinus orca</i>	Gulf of California	3.1.1,4
Humpback whale	<i>Megaptera novaeangliae</i>	Mexican Pacific	2.1.1,3.1.1,4,6,2
Eastern gray whale	<i>Eschrichtius robustus</i>	Baja California	2.1.1,3.1.1,6,2

2. Sightings data

2.1 Field work

2.1.1 SYSTEMATIC

INE-Programa de Mamíferos Marinos La Paz

Distribution and abundance surveys were conducted at Bahía Magdalena, the southernmost breeding lagoon for the gray whale. Data and identification photos were collected from January through March 2004.

INE Programa de Mamíferos Marinos Ensenada

Acoustic surveys taking place in May and June to study vaquita habitat use. Humpback whales in Bahía de Banderas, Jalisco during March to study potential impact of whalewatching activities in these whales.

ICMME

Surveys were conducted during March, June, July, and October 2004 in Canal de Ballenas and Bahía de los Angeles, in the Gulf of California. The aim was to describe the occurrence and geographic distribution of cetaceans. Fin whales, Bryde's whales, bottlenose dolphins, and short-finned pilot whales have been photographed for individual identification. Digital catalogues are in development.

CICIMAR

During 2004, non systematic surveys to photo-identified blue whales and sperm whales during spring/winter in the southwestern Gulf of California, were conducted. Photo-identification, dart biopsies for skin and blubber and sloughed skin sampling of blue whales and sperm whales continued during 2004.

SFS

Line transects and photo identification of gray whales, *Eschrichtius robustus* in Magdalena Bay during the 2004 winter season.

UNAM

Line transects inside the Terminos Lagoon, Campeche were done in 2004 from Jan 29-30, Feb 01-04, Feb 06, Apr 11-14, Apr 16, May 09-13, Jul 19-27, Oct 27-Nov 04, and Nov 06 totaling 36 days. In all 36 days sampled the only species sighted was the bottlenose dolphin, *Tursiops truncatus*. This study was carried out by the National Autonomous University of Mexico (UNAM) to study habitat use by bottlenose dolphins in a coastal lagoon.

UABCS-INE

Cetaceans of the Gulf of California, including blue, fin, Bryde's, gray, humpback, sperm, killer and beaked whales, base on Aerial and ship surveys in the Gulf of California, and systematic small boat surveys in the southwest Gulf of California.

Gray whales at Laguna San Ignacio base on small boats systematic surveys.

2.1.2 OPPORTUNISTIC, PLATFORMS OF OPPORTUNITY

SFS

A turtle mortality study involved monthly beach surveys at Santa Maria Bay on Magdalena Island and the Pacific side of Margarita island. Over the past year, we noted numerous sightings of dead Californian sea lions, Common dolphins (17 individuals on 15 occasions), and Bottlenose dolphins (15 individuals over the last 10 occasions). Opportunistic sightings of these species alive within Magdalena Bay included approx. 45 Californian sea lions on 25 occasions, at least 50 Common dolphins (on 10 occasions), and approx 52 Bottlenose dolphins on 27 occasions. We have also observed about 45 Pacific white sided dolphins (on 10 different occasions) and a mother and calf Humpback whale during Feb 05 (a note for publication is being prepared of this last sighting).

2.2 Analyses/development of techniques

3. Marking data

3.1 Field work

3.1.1 NATURAL MARKING DATA

It would be helpful to provide this in the form of a table, e.g.

Species	Feature	Area/stock	Calendar year/season/ no. photographed	Catalogued (Y/N)	Catalogue total	Contact person/institute
Blue whale	sides/flukes	N. Pacific Baja California	100	Y	(450)	D. Gendron CICIMAR
Sperm whale	flukes	N. Pacific Gulf of California	70	N	(500+)	D. Gendron, CICIMAR
Gray whale	Right side	Magdalena Bay Eastern N. Pacific stock	Winter-Spring 2004	Y	54	F. Ollervides. SFS .
Fin whale	Sides/ dorsal fin	Gulf of California	2004/all year/95	Y	>420	J. Urban, UABCS
Humpback whale	Sides/ dorsal fin/flukes	N. Pacific	2004/Winter- Spring/520	Y	>3500	J. Urban, UABCS
Killer whale	Sides/ Dorsal fin	N. Pacific	2004/all year/18	Y	> 90	J. Urban, UABCS

3.1.2. ARTIFICIAL MARKING DATA

3.1.3 TELEMETRY DATA

3.2 Analyses/development of techniques

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
Fin whale	Gulf of California	70	Y	0	70	J. Urban, UABCS
Killer whale	Gulf of California	4	Y	0	4	J. Urban, UABCS
Sperm whales	Gulf of California					D. Gendron, CICIMAR
Blue whale	Mexican Pacific					D. Gendron, CICIMAR
Humpback whale	Mexican Pacific	400	Y	0	400	L. Rojas-Bracho, INE

4.2 Samples from directed catches or bycatches

Species	Area/stock	Calendar year/ season total	Archived (Y/N)	Tissue type(s)*	Contact person/institute
Vaquita	Upper Gulf of California	2004	Y	Complete specimens and skin	Lorenzo Rojas-Bracho

4.3 Samples from stranded animals

Species	Area/stock	Calendar year/ season total	Archived (Y/N)	Tissue type(s)*	Contact person/institute

4.4 Analyses/development of techniques

CICIMAR

Blue whales:

Blue whales biopsies and sloughed skin were analysed at the genetics lab. of the University UABC at Ensenada. Sex determination and DNA(mt) are completed.

Sperm whales:

Sex analysis of sperm whale biopsies is undergoing for a Master's thesis. Fatty acids from the biopsies were analyzed to determine relationship with squid prey. Both analysis are undergoing.

INE-Programa de Mamíferos Marinos Ensenada

Vaquita DNA fragments corresponding to the Peptide Binding Region (PBR) of the second exon of *Mhc* genes were cloned and sequenced from 3 individuals. Seven unique sequences with a low degree of divergence and coming from at least 3 *Mhc* class I loci were found. A unique sequence was present at the locus *DQB* from *Mhc* class II. Moreover, we studied the single stranded conformation polymorphism (SSCP) of the *DQB* locus in 26 individuals, all being homozygous for the single allele (*Phsi-DQB*01*) previously isolated.

5. Pollution studies

6. Statistics for large cetaceans

6.1 Direct catches

No catches

6.2 Non-natural mortality for the calendar year 1995 to 2004

Species	Area/stock	Males	Females	Total	Cause	Methodology/year
Eastern gray whale	Mexican Pacific			1	entanglement	/1995
Sperm whale	Mexican Pacific			1	entanglement	/1997
Sperm whale	Mexican Pacific		1	1	entanglement	/2000
Eastern gray whale	Mexican Pacific			1	entanglement	/2000
Sperm whale	Mexican Pacific		1	1	entanglement	/2001
Sperm whale	Mexican Pacific		1	2	entanglement	/2002
Humpback whale	Mexican Pacific	1		3	entanglement	/2002
Sperm whale	Mexican Pacific			1	entanglement	/2003
Eastern gray whale	Mexican Pacific		1	1	entanglement	/2003
Humpback whale	Mexican Pacific		1	2	entanglement	/2003
Humpback whale	Mexican Pacific			2	entanglement	/2004

6.2.1 STRANDINGS OR DEAD WHALES ENCOUNTERED AT SEA

6.2.2 OBSERVED OR REPORTED SHIP STRIKES

6.2.3 FISHERY BYCATCH

6.3 Earlier years' statistics

7. Statistics for small cetaceans

7.1 For the calendar year 2004

Species	Area/stock	Directed catch		Incidental mortality			Live-capture
		Reported	Est. total	Reported	Est. total	Source*	Reported
<i>Delphinus sp.</i> [#]	Baja California	0	-	41	-	Gillnets for flounder	0
<i>Lagenorhynchus obliquidens</i>	Baja California	0	-	2	-	Gillnets for flounder	0
<i>Tursiops truncatus</i>	Baja California	0	-	3	-	Gillnets for flounder	0
<i>Phocoena sinus</i>	Upper Gulf of California			9		Gillnets	0

both *Delphinus delphis* and *D. capensis* coexist in front of the beach surveyed. Observers were not able to identify to species level.

*a 45km beach at Magdalena island (Baja California Pacific) is being systematically surveyed for stranded turtles and marine mammals. Contact persons: David Auriolles (CICIMAR), Hoyt Peckham (UCSC) and Hector Pérez-Cortés (INE).

7.2 Earlier years' statistics

8. Strandings

If included, this section should only provide information on focal institutions/individuals who can be contacted.

9. Other studies and analyses

CICIMAR

We used aerial photogrammetry to describe the external morphology of blue whales in the Baja California's waters and used an allometric analysis to compare body proportions between subspecies. The analysis is completed and included in a Master's thesis.

11. Publications

11.1 Published or 'In Press' papers only

- Gulland, F., H. Pérez-Cortés M., J. Urbán R., L. Rojas-Bracho, G. Ylitalo, J. Weir, S. A. Norman, M. M. Muto, D. J. Rugh, C. Kreuder, and T. Rowles. 2005. Eastern North Pacific Gray Whale (*Eschrichtius robustus*) Unusual Mortality Event, 1999-2000. US Dep. Commer., NOAA Technical Memorandum. NMFS-NWFSC-150, 33
- Morteo, E., Heckel, G., Defran, R.H., Schramm, Y. 2004. Distribution, movements and group size of the bottlenose dolphin (*Tursiops truncatus*) to the south of San Quintín Bay, Baja California, México. *Ciencias Marinas* 30(1A):35-46.
- A. Murguía, H. Pérez-Cortés, A. Jaramillo Legorreta and Lorenzo Rojas Bracho. *In press*. La vaquita al borde de la extinción. *Especies*, Revista sobre Conservación y Biodiversidad. *Naturalia*, México.
- Ortega-Ortiz, J. G., A. Delgado-Estrella, and A. Ortega-Argueta. 2004. Mamíferos marinos del Golfo de México: Estado actual del conocimiento y recomendaciones para su conservación., p. 135-160. *In* I. Pisanty and E. Ezcurra (ed.), *Diagnóstico Ambiental del Golfo de México*. Instituto Nacional de Ecología, Mexico, D.F.
- Pérez-Cortés M., H. y Rocha G., A. 2004. Los Gigantes del Pláneta. (Las ballenas de México). *Especies*. Revista editada por la organización *Naturalia A.C.* Enero-Febrero 2004.

- Pérez-Cortés M., H., J. Urbán R., and P. A. Loreto C. 2004. A note on gray whale distribution and abundance in the Magdalena Bay Complex, México during the 1997 winter season. *J. CETACEAN RES. MANAGE.* **6**(2).
- Rojas-Bracho. L. y A.M. Jaramillo-Legorreta. 2004. What is vaquita? *Whalewatcher*, Journal of the American Cetacean Society Winter 2003, 35(2):10-12
- Ruiz-Cooley, R.I., D. Gendron, S. Aguñiga, S. Mesnick, J.D. Carriquiry. 2004. Trophic relationships between sperm whales and jumbo squid using stable isotopes of C and N. *Marine Ecology Progress Series* 277:275-283
- Urbán R.,J., L. Rojas-Bracho, H. Pérez-Cortés, A. Gómez-Gallardo, S. Swartz y R.L. Brownell. 2004. A review of gray whales in their wintering grounds in Mexican waters. *The Journal of Cetacean Research and Management*

11.2 Unpublished literature

- Gómez Gallardo U., E. A. 2004. Uso de la Laguna San Ignacio por la ballena gris *Eschrichtius robustus*, durante las temporadas invernales de 1996 y 1997. Masters Thesis. IPN, La Paz.86
- Gonzalez-Moreno, N.I. 2004. El balano foronte *Xenoblanus globicipitis*, como posible indicador de estancia temporal de la ballena azul *Balaenoptera musculus* en aguas de Baja California Sur. Tesis de Licenciatura, UNAM, D.F.
- Ortega-Ortiz, C.D. 2004. Morfometría de la ballena azul de Baja California (*Balaenoptera musculus*) mediante fotografías aéreas. Tesis de maestría, CICIMAR-IPN, La Paz, B.C.S.