

MEXICO. PROGRESS REPORT ON CETACEAN RESEARCH, JANUARY 2002 TO DECEMBER 2002, WITH STATISTICAL DATA FOR THE CALENDAR YEAR 2002

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This report summarises information obtained from: Instituto Nacional de Ecología (INE-SEMARNAT), Centro Interdisciplinario de Ciencias Marinas (CICIMAR-IPN) and Universidad Autónoma de Baja California Sur (UABCS).

1. Species and stocks studied

Common name	Scientific name	Area/stock(s)	Items referred to
Blue whale	<i>Balaenoptera musculus</i>	NPacific (Baja California)	
Fin whale	<i>Balaenoptera physalus</i>	Gulf of California	
Humpback whale	<i>Megaptera novaeanglie</i>	Los Cabos, Baja California	2.1; 3.1.1; 3.1.3; 6.2
Gray whale	<i>Eschrichtius robustus</i>	Pacific Baja California	2.1.2; 3.1.1
Sperm whale	<i>Physeter macrocephalus</i>	Pacific (Gulf of California)	
Bottlenose dolphins	<i>Tursiops truncatus</i>	Gulf of California, Upper Gulf of California, Magdalena Bay.	
Vaquita	<i>Phocoena sinus</i>	Gulf of California	

2. Sightings data

2.1 Field work

2.1.1 SYSTEMATIC

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During the 2002, non systematic surveys to photo-identify blue whales during spring/winter in the southwestern Gulf of California (coastal and offshore) were conducted. Photo-identification, dart biopsies and sloughed skin sampling of blue whales continued during 2002. Sperm whales were also study in collaboration with Nathalie Jaquet from Texas A&M University using acoustic surveys to photo-identify and sample sloughed skin during may and October 2002 (see Jaquet & Gendron 2002 for details). Dart biopsies of some groups followed were also collected. During both blue and sperm whales surveys, we also biopsied individual tursiops from coastal and offshore areas to evaluate the use of C and N carbon isotope to differentiate the coastal and offshore form.

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Two vaquita acoustic surveys took place in March and May. Gray whale surveys in Magdalena bay, Laguna Ojo de Liebre and Laguna San Ignacio were performed supporting the work done by the UABCS at the other gray whale breeding lagoons in Baja California.

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Gray whale. Laguna San Ignacio and Laguna Ojo de Liebre, from February 15th to March 30th.

Humpback whale. Baja California and Revillagigedo Archipelago. January to April.

Fin whales. Gulf of California. All year.

2.2 Analyses/development of techniques

None

3. Marking data

3.1 Field work

3.1.1 NATURAL MARKING DATA

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Species	Feature	Area/stock	Calendar year/season/ photographed no.	Catalogued (Y/N)	Catalogue total	Contact person/institute
Blue whale	Right/left/flukes	Npacific	65	no	(300+)	D. Gendron CICIMAR-
Sperm whale	flukes	Npacific Gulf of California	250	No	(300+)	D. Gendron, CICIMAR

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Bottle nose dolphins	Dorsal fin	N Pacific, Gulf of California	80	Y	250	H. Pérez-Cortés
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UABCS

Gray whale	Dorsal	E.N. Pacific	300	N	2000	UABCS
Humpback whale	Fluke	E.N. Pacific	80	N	1500	UABCS

3.1.2. ARTIFICIAL MARKING DATA

3.1.3 TELEMETRY DATA

Species	Tag type	No. successfully deployed	Maximum time transmitting	Contact person/institute
Humpback whale	Satellite	7	2 months	Bruce Mate/UABCS

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
Blue whale	Npacific Baja	30	Y	Y	0	D.Gendron, CICIMAR-IPN
Sperm whale	Npacific Baja	14	Y	0	14	D.Gendron, CICIMAR-IPN
Bottlenose dolphins	Gulf of California	30	Y	30	0	D. Gendron, CICIMAR-IPN; Lorenzo Rojas (INE) and A. Rocha (CICESE)
Humpback whale	E.N.Pacific	90	Y	0	90	J. Urbán (UABCS)

4.4 Analyses/development of techniques

Blue whales biopsies and sloughed skin were analysed at the Laboratorio de Genética of the University UABC of Ensenada. Sex determination and DNA(mt) are completed. The analysis of results is undergoing.

Part of the sperm whales biopsies and sloughed skin were used in a C and N stable isotopes analysis to determine relative trophic level between sex and maturity (Ruiz-Castro 2002). As for the bottlenose dolphins biopsies, the analysis of C and N stable isotopes is also completed. Results will be presented at the 15 Biennial Conference on the Study of Marine Mammals during 2003.

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Gray whale tissues from biopsies are currently being analyzed for mtDNA from the lagoons of San Ignacio and Ojo de Liebre jointly with CICESE

Bottlenose dolphin's biopsies taken from the 1997 vaquita abundance cruise are also being analyzed for mtDNA and micro satellites jointly with CICESE and the SWFSC-US.

Vaquita DNA extractions were used with MHC primers for a demographic and evolutionary study (Murguía, 2002) jointly with CIBNOR and UABCS.

5. Pollution studies

A paper on mercury concentrations in two cetaceans of the lower Gulf of California was published (Ruelas *et al.*, 2003).

6. Statistics for large cetaceans

6.3 Earlier years' statistics

7. Statistics for small cetaceans

7.1 For the calendar year 2002

Species	Direct		Indirect		Live
	Rep.	Est.	Rep.	Est.	Rep.
Species	1	-	-	-	-
Vaquita	-	-	-	-	-
Gulf of California					
Bottlenose dolphin	1 ^f	Yes ^f	1	-	-
Baja California	-	-	-	-	0
	-	-	-	-	-
Gulf of Mexico	-	-	-	-	-
Risso's dolphin					

7.2 Earlier years' statistics

8. Strandings

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9. Other studies and analyses

A stranding of two Cuvier's beaked whale was recorded in the Gulf of California. The event was related to seismic studies that were halted after the event. It was not possible to confirm the cause of death due to the location of the stranding site, several hours away by boat from the closest port.

10. Literature cited

Munguía, A. 2002. Estudio del complejo principal de histocompatibilidad en la historia evolutiva y demográfica de la vaquita *phocoena sinus*". Tesis de Maestría, CINBOR (info available from LRB)

11. Publications

11.1 Published or 'In Press' papers only

Jaquet, N. and Gendron, D. (2002). Distribution and relative abundance of sperm whales in relation to key environmental features, squid landings and the distribution of other cetacean species in the Gulf of California, Mexico. *Mar. Biol.* 141:591-601.

Jaquet, N. , D. Gendron and A. Coakes (in press). Sperm whales in the Gulf of California: residency, movements, behavior, and the possible influence of variation in food supply. *Mar. mammal Sci.*

Pérez-Cortés M., H., J. Urbán-R. and P. Loreto C. In press. Distribution and abundance of gray whales at the Magdalena Bay Complex during the 1997 winter. *The Journal of Cetacean Research and Management*.

Ruelas-Inzunza, J.R., M. Horvat, H. Pérez-Cortés and F. Páez-Osuna. 2003. Methylmercury and total mercury distribution in tissues of gray whales (*Eschrichtius robustus*) and spinner dolphins (*Stenella longirostris*) stranded along the lower Gulf of California, Mexico. *Ciencias Marinas*. 29(1):1-8.

Urbán R, J., L. Rojas-Bracho, MM. Guerrero-Ruiz and A. Jaramillo-Legorreta. (in press). Cetacean Biodiversity and Conservation in the Gulf of California. In: J.L. Cartron, G. Ceballos and T.R. Van Devender (eds). *Biodiversity, ecosystems, and conservation in northern Mexico*. Oxford University Press.

Urbán R, J., L. Rojas-Bracho, H. Pérez-Cortés, A. Gomez-Gallardo, S. Swartz and R.L. Brownell. (in press). A Review of Gray Whales in their Wintering Grounds in Mexican Waters. *Journal of Cetacean Research and Management*.

11.2 Unpublished literature

Ruíz-Castro, I. 2002. *Relación trófica entre el cachalote (Physeter macrocephalus) y el calamar gigante (Dosidicus gigas) en el Golfo de California mediante el análisis de isótopos estables de carbono y nitrógeno*. Tesis de maestría, CICIMAR-IPN. (available in CICIMAR)

Munguía, A. 2002. Estudio del complejo principal de histocompatibilidad en la historia evolutiva y demográfica de la vaquita *phocoena sinus*". Tesis de Maestría, CINBOR (info available from LRB)