

MEXICO PROGRESS REPORT ON CETACEAN RESEARCH, JANUARY TO DECEMBER 1998, WITH STATISTICAL  
DATA FOR THE CALENDAR YEAR 1998.

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This report summarises information obtained from: Centro Interdisciplinario de Ciencias Marinas' (CICIMAR-IPN), INSTITUTO NACIONAL DE LA PESCA (INP); CRIP La Paz. CRIP Ensenada and Oficinas Centrales; The SFS Center for Coastal Studies México A.C (SFS-CCS); Universidad Autonoma de Baja California Sur (UABCS); Red de Varamientos de Yucatan, A.C. (REVAY).

1. Species and stocks studied

Common name	Scientific name	Area/stock(s)	Items referred to
Blue whale	<i>Balaenoptera musculus</i>	Mexican Pacific	2.1.1, 8
Fin whale	<i>Balaenoptera physalus</i>	Gulf of California	2.1.1
Humpback whale	<i>Megaptera novaeangliae</i>	Mexican Pacific	2.1.1
Gray whale	<i>Eschrichtius robustus</i>	Eastern [Pacific	2.1.1, 3.1.1, 3.1.3, 8
Bottlenose dolphin	<i>Tursiops truncatus</i>	Gulf of California, Gulf of México	2.1.1, 3.1.1, 7.1, 8
Pygmy sperm whale	<i>Kogia breviceps</i>	Gulf of Mexico	8
Pilot whale	<i>Globicephala macrorhynchus</i>	Gulf of Mexico	8
Rough toothed dolphin	<i>Steno bredanensis</i>	Gulf of Mexico	4.3, 7.1, 8
Sperm whale	<i>Physeter macrocephalus</i>	Gulf of Mexico	8
Vaquita	<i>Phocoena sinus</i>	Gulf of California	2.1.1, 11

2. Sightings data

2.1 Fieldwork

2.1.1 SYSTEMATIC

Sightings data and photographs for ID purposes of fin whales were collected from October to December 1998 at the northern region of the Gulf of California (Prescott College, UABCS).

Efforts on observation, photoidentification and skin biopsies collection have continued in the humpback whale wintering grounds of Baja California (UABCS).

Gray whale research on distribution and abundance continued in Laguna San Ignacio during the winter season of 1998. The analysis of field data from this season showed a decline on the number whales present in the lagoon during El Nino phenomenon (ENSO) in comparison to the last winter season (UABCS).

Blue whales distribution was investigated in relation with the ENSO 97-98 phenomenon. One cruise aboard the Mexican Army and one aerial survey were conducted during March 1998. Photoidentification work and sloughed skin sampling were continued in different areas of the Baja California Peninsula. Cetacean sightings during the cruise and aerial survey were collected using line transect method. A recompilation of all sperm whales sightings and photographs from the ventral side of flukes taken in the past surveys plus new sightings from 1998 surveys were compiled as an objective of a new research project of CICIMAR sponsored by CONABIO.

Gray whale distribution and abundance was investigated, continuing previous studies at the Baja California lagoons. For the period informed the effects of the El Nino phenomenon (ENSO) were considered, the data is currently under analysis. For this purpose aerial surveys (from a small plane and flying at altitudes of 700 ft. Over the lagoons and 1000 ft over the coast line) and vessel surveys (from small boats with outboard engines) were conducted. Additionally, data on the potential impact of whale watching activities was gathered (INP, SFS-CWS, RBV and UABCS).

\* NOTE: Due to technical problems, part of the information presented by CICIMAR is not included in this report. The missing parts will be included in the final version.

Bottlenose dolphin abundance and distribution studies were continued at lagoons and bays in the Gulf of California and Gulf of Mexico. Photographs of dorsal fins for individual identification are being added to a catalogue (INP).

As in previous years, observers were placed in commercial tuna fishing vessels at the purse fishery in the Mexican Pacific and at the long line fishery in the Gulf of Mexico. Among their main duties they systematically collect data on sightings and interactions with cetaceans (INP - PNAAPD).

#### 2.1.2 OPPORTUNISTIC, PLATFORMS OF OPPORTUNITY

Sightings data and photographs for ID purposes of fin, blue and Bryde's whales were collected during a cruise designed to film fin whales at the northern Gulf of California (UABCS).

Data on distribution and abundance of bottlenose dolphins (*Tursiops truncatus*) was collected while conducting censuses for gray whales (*E. robustus*) at Bahia Magdalena in the Baja California Pacific (INP-CRIP La Paz).

#### 2.2 Analyses/development of techniques

#### 3. Marking data

##### 3.1 Fieldwork

Photographs of blue whales were taken to be included in the Baja California blue whale catalogue (1988-1998) of CICIMAR. Photographs of sperm whales flukes from the Gulf of California, taken in past surveys (1992-1997) were compiled and integrated in a new catalogue.

Fifty different fin whales have been identified in the area of Bahia Kino, Son. (Prescott College, UABCS). These photographs will be compared and included in the Gulf of California fin whale catalogue (1982-1998) of UABCS.

A gray whale photo ID catalogue (right side) includes up to date, 729 individuals (318 calving cows, 402 single whales and 9 unidentified) (UABCS).

A bottlenose dolphin photo ID catalogue includes up to 1994, a total of 114 individuals. Photoidentification studies have reinitiated on 1998 and a total of 68 individuals were obtained during this year. These photographs will be compared and included in the aforementioned catalogue (UABCS).

##### 3.1.1 NATURAL MARKING DATA

Species	Feature	Area/stock	Calendar year/season no. photographed	Catalogued (Y/N)	Catalogue total	Contact person/institute
Blue whale	Dorsal fin	Baja California waters/north Pacific	?	Y	<250	Diane Gendron/CICIMAR
Sperm whale	Fluke	Baja California waters	?	Y	30	Diane Gendron/CICIMAR
Fin whale	Dorsal fin	Gulf of California waters/north Pacific	50	in process	>357	Jorge Urban/UABCS
Gray whale	mid-dorsal right side	San Ignacio lagoon/eastern Pacific	729	in process	526	Jorge Urban/UABCS
Humpback whale	Fluke	north Pacific	?	Y		Jorge Urban/UABCS
Bottlenose dolphin	dorsal fin	Bay of La Paz, BCS	68	in process	114	Jorge Urban/UABCS
Bottlenose dolphin	dorsal fin	Gulf of California	aprox. 50	in process	<120	Héctor Pérez-Cortés/INP

### 3.1.2. ARTIFICIAL MARKING DATA

### 3.1.3 TELEMETRY DATA

### 3.2 Analyses/development o/techniques

A prospective telemetry study for gray whales was performed on February and March 1998 in Laguna San Ignacio, BCS. Six VHF tags were used to monitor movement patterns inside the lagoon but only two of them stayed on the animals for two days and fell off. There were not enough results to analyse during this season, so the methodology will be refined to obtain more results and to include other types of tags (e.g. satellite and multisensor tags) on the next field season.

## 4. Tissue/biological samples collected

### 4.1 Biopsy samples

Species	Area/stock	Calendar year/ no. collected	Archived (Y/N)	No. analysed	Total holdings	Contact person/institute
Fin whale	Gulf of California waters/north Pacific	17	Y	0	79	Jorge Urbán/UABCS
Gray whale	eastern [Pacific]	52	Y	0	201	Jorge Urbán/UABCS
Humpback whale	eastern north Pacific	3	Y	0	> 210	Jorge Urbán/UABCS
Rough toothed dolphin	Gulf of Mexico	2	Y	0	2	Diana Antochiw/REVAY

### 4.2 Samples from directed catches or bycatches

### 4.3 Samples from stranded animals

Species	Area/stock	Calendar year/ season total	Archived (Y/N)	Tissue type(s)*	Contact person/institute
Gray whale	eastern north Pacific	3	Y	Skin, blubber	Jorge Urbán/UABCS
Common dolphin	Bay of La Paz, BCS	1	Y	Skin, blubber	Jorge Urbán/UABCS

### 4.4 Analyses/development of techniques

## 5. Pollution studies

## 6. Statistics for large cetaceans

### 6.1 direct catches.

None.

### 6.2 Other non-natural mortality for the year 1998

None recorded during this year.

## 7. Statistics for small cetaceans

### 7.1 For the calendar year 1998

Species	Area/stock	Directed catch		Incidental mortality			Live-capture
		Reported	Est. total	Reported	Est. total	Source*	Reported
Bottle nose dolphins	Gulf of México	0	0	0	0		4*

\* Under permits issued by SEMARNAP. The cetaceans are being kept in captivity at recreational facilities. The permits were granted after conducting population studies.

## 7.2 Earlier years' statistics

### 8. Strandings

Several institutions assist on marine mammal strandings on a volunteer basis, trying to release live animals and collecting morphometric data and tissue samples. For the season included in the present document, the following institutions reported stranded cetaceans:

Institution	contact	species	No.
UABCS	J. Urbán	<i>Eschrichtius robustus</i>	3
UABCS	J. Urbán	<i>Delphinus capensis</i>	1
UABCS	J. Urbán	<i>Balaenoptera musculus</i>	1
REVAY	D. Antochiw-Alonzo	<i>Kogia breviceps</i>	1
REVAY	D. Antochiw-Alonzo	<i>Globicephala macrorhynchus</i>	1
REVAY	D. Antochiw-Alonzo	<i>Tursiops truncatus</i>	13
REVAY	D. Antochiw-Alonzo	<i>Steno bredanensis</i>	1
REVAY	D. Antochiw-Alonzo	<i>Physeter macrocephalus</i>	1
CRIP La Paz	H. Pérez-Cortés	<i>Balaenoptera musculus</i>	1
CRIP La Paz	H. Pérez-Cortés	<i>Tursiops truncatus</i>	1

### 9. Other studies and analyses

Gray whales at Laguna San Ignacio were studied by UABCS during El Nino year. According to this year census data, there was a decline in the number of whales present during the peak count with respect to last year peak. The peak count has shifted in time from March 2 in 1996 up to February 13 in 1998. This alteration might be related to El Nino or its just part of the natural fluctuations that occur to the gray whale population that visits the lagoon, which we are starting to get aware of. However, strong evidence for the influence of El Nino on this population, its mostly derived from a deviation in average length for dead calves registered inside the lagoon. The dead calves were significantly smaller than those registered in 1997 ( $p=0.01$ ) and this might be an indication of a deficient feeding by the females, due to oceanographic changes induced by El Nino.

### 10. literature cited

#### 11. Publications

##### 11.1 Published or 'in Press' papers only

Baker, C.S., L. Medrano-Gonzalez, J. Calambokidis, A. Perry, F. Pichler, H. Rosembaum, J.M. Straley, J. Urban R., M. Yamaguchi y O. von Ziegeler. 1998. Population structure of nuclear and mitochondrial DNA variation among humpback whales in the North Pacific. *Molecular Ecology* 7(6): 695-708

Berube, M., A. Aguilar, D. Dedanto, F. Larsen, G. Notobartolo-di-Sciara, R. Sears, J. Sigurjonsson, J. Urban R. y P.J. Palsboll. 1998. Population genetic structure of North Atlantic, Mediterranean and Sea of Cortez fin whales, *Balaenoptera physalus* (Linnaeus, 1758): analysis of mitochondrial and nuclear loci. *Molecular Ecology* 7(5): 585-600

Croll, D.A., B.R. Tershy, R.P. Hewitt, D.A. Derner, P.C. Fiedler, S.E. Smith, W. Armstrong, J.M. Popp, T. Kiekhefer, V.R. Lopez, J. Urban y Diane Gendron. 1998. An Integrated approach to the foraging ecology of marine birds and mammals. *Deep-Sea Research II* 45: 1353-1371

Jaramillo-Legorreta, A., Rojas-Bracho, L. and Gerrodette, T. *In press*. A new estimate for vaquita abundance: first step to its recovery. *Marine Mammal Science*.

Rojas-Bracho, L., and Taylor, B. *In press*. Risk factors in the vaquita. *Marine Mammal Science*.

##### 11.2 Unpublished literature