

Mexico. Progress report on cetacean research, January 2006 to March 2007, with statistical data for the *calendar year* 2006.

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This report summarises information obtained from:

Name of agency/institute	Abbreviation (use in rest of report)	Contact e-mail address
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Investigación y Conservación de Mamíferos Marinos de Ensenada	ICMME	Gisela Heckel, e-mail: gheckel@cicese.mx
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The School for Field Studies, Center for Coastal Studies	SFS	Héctor Pérez-Cortés, hperez@fieldstudies.org

1. SPECIES AND STOCKS STUDIED

A tabular format is most appropriate. Please indicate where in the report the species is mentioned and use IWC recommended names (see IWC, 2006, Annex L). For subsequent items, common names are preferred. e.g.:

IWC common name	IWC recommended scientific name	Area/stock(s)	Items referred to
Vaquita	<i>Phocoena sinus</i>	Upper Gulf of California	2.1.1; 9
Common bottlenose dolphin	<i>Tursiops truncatus</i>	Mexican Pacific, Gulf of California; Revillagigedo Islands	2.1.1; 2.2; 3.1.1; 4.1; 4.4
Rough-toothed dolphin	<i>Steno bredanensis</i>	Mexican Pacific	2.1.1; 2.2; 3.1.1
Delphinus spp	<i>Delphinus</i> spp	Gulf of California	4.1; 4.4
Baird's beaked whales	<i>Berardius bairdii</i>	Mexican Pacific/North Pacific.	4.3; 8.
Cuvier's beaked whale	<i>Ziphius cavirostris</i>	Gulf of California	4.1
Beaked whales		Gulf of California	2.1.1; 2.2; 3.1.1
Dwarf sperm whale	<i>Kogia sima</i>	Mexican Pacific	2.1.1; 2.2; 3.1.1
Humpback whale	<i>Megaptera novaeangliae</i>	Mexican Pacific/North Pacific	2.1.1; 2.2; 3.1.1; 4.1.
Blue whale	<i>Balaenoptera musculus</i>	Mexican Pacific/North Pacific	3.1; 4.1; 4.3; 4.4; 5; 8; 9
Gray whale	<i>Eschrichtius robustus</i>	Mexican Pacific/Eastern North Pacific	2.1.1; 2.2; 3.1.1; 6.3.2; 8

2. SIGHTINGS DATA

2.1 Field work

2.1.1 Systematic

Give brief details of **systematic** surveys, when and where held and references to cruise reports if applicable. A summary table of sightings may be included (e.g. see below).

CICESE

Counts from shore near Ensenada, Baja California, by CICESE, from December 2005 to May 2006.

ICMYL UNAM

Ad hoc surveys for observation, photo-identification and biopsy sampling of humpback whales were made in Bahía Banderas between January and March, 2006 and Revillagigedo Islands between February and April, 2006 as well as in Bahía Banderas in November, 2006. Observation and photo-identification of common bottlenose dolphins and rough-toothed dolphins as well as search for dwarf sperm whales were made during these surveys in Bahía Banderas. Observation and photo-identification of common bottlenose dolphins were made also in Revillagigedo Islands.

Target species	Date	Area	No. of sightings	Contact person/institute and references
Gray whale	10/12/05-9/5/06	Baja California, Mexican Pacific coast	581	G. Heckel, CICESE
Humpback whale	January – April, November/06	Mexican Pacific coast, Revillagigedo Islands	1187	L. Medrano, ICMYL UNAM
Common bottlenose dolphin	January-April, November/06	Mexican Pacific coast, Revillagigedo Islands	132	L. Medrano, ICMYL UNAM
Rough-toothed dolphin	January–March, November/06	Mexican Pacific coast	1	L. Medrano, ICMYL UNAM
Blue whale	5/2/06-18/6/06	Gulf of California	Over 100	D. Gendron, CICIMAR-IPN
Vaquita	May/06 and February/07	Upper Gulf of California	1	L. Rojas-Bracho, INE
Beaked whales	29/1/06 to 29/1/07	Gulf of California	8	J. Urbán, UABCS; Cárdenas <i>et al.</i> , (2006a)
Humpback whale	15/1/06 to 1/4/06 and 25/1/07 to 20/3/07	Mexican Pacific	147	J. Urbán, UABCS ; Urbán <i>et al.</i> , (2006)
Gray whale	1-28/2/06 and 3/2/07 to 2/4/07	Mexican Pacific	392	J. Urbán, UABCS; González <i>et al.</i> , (2006)
Gray whale	1/06 to 3/06	Bahia Magdalena, Baja California	NA	H. Pérez-Cortés, SFS

2.1.2 Opportunistic, platforms of opportunity

Give brief details of work carried out, with references where appropriate. In 2004, the Committee agreed that details on whether the data were collected by whalewatching platforms or other types of vessel should be included (IWC, 2005b). Please give details where appropriate on who collected the data, e.g. whalewatching operators, crew, or scientists, and the data collection methodology.

ICMYL UNAM

Surveys for *ad hoc* observation of marine mammal diversity from a 22 m height spot, with simultaneous record of sea surface temperature and depth but without distance measurement instrumentation, were made on board B/O El Puma taking advantage of geological and oceanographical explorations: 1) Bahía Banderas to Acapulco by ca. 350 Km offshore (January, 2006), 2) Acapulco to mid Tehuantepec Gulf (February 2006), 3) Acapulco to Mazatlán by the coast (February 2006), 4) Mazatlán to La Paz Bay, Loreto surroundings and Sinaloa coast back to Mazatlán (February, 2006), 5) Mazatlán to surroundings of Mariás Islands, Bahía Banderas, ca. 300 Km offshore Bahía Banderas, Jalisco coast and back to Mazatlán (October, 2006). Data collected by L. Medrano, L. Viloria and H. Rosales. Contact L. Medrano, ICMYL UNAM.

Primary species	Area	Data type/method	Collected by	Platform	Contact person/institute and refs
Blue whale	Gulf of California	Photo-id; sightings	CICIMAR	CICIMAR boat	D. Gendron, CICIMAR-IPN

2.2 Analyses/development of techniques

Give brief details of any analyses of data carried out, with references where appropriate. A summary table of sightings and associated effort may be included (see below).

SFS

Behavioural variations in different areas of Magdalena Bay have been studied in relation to the sounds produced by the whales. The study is being carried out in coordination with a graduate student from Texas A&M University (S. Rorkhase).

Target species	Date	Area	Methods/effort	Parameters/ factors measured	Contact person/institute; refs
Common bottlenose dolphin	All 2006	Mexican Pacific	Development of an absolute abundance modelling method Development of an analysis to estimate dispersal parameters	Absolute abundance, Phylopatry Dispersal radius in time, Vagility	L. Medrano, ICMYL UNAM
Rough-toothed dolphin	All 206	Mexican Pacific	Development of an absolute abundance modelling method Development of an analysis to estimate dispersal parameters	Absolute abundance, Phylopatry Dispersal radius in time, Vagility	L. Medrano, ICMYL UNAM
Dwarf sperm whale	All 2006	Mexican Pacific	Development of an absolute abundance modelling method Development of an analysis to estimate dispersal parameters	Absolute abundance, Phylopatry Dispersal radius in time, Vagility	L. Medrano, ICMYL UNAM
Humpback whale	All 2006	Mexican Pacific	Development of an absolute abundance modelling method Development of an analysis to estimate dispersal parameters	Absolute abundance, Population growth rate, Phylopatry Dispersal radius in time, Vagility	L. Medrano, ICMYL UNAM
Gray whale	10/12/05-9/5/06	Baja California, Mexican Pacific coast	Shore counts, theodolite tracking	Gray whale abundance, calf abundance, distribution (tracks of migrating whales)	G. Heckel, CICESE
Beaked whales	29/1/06 to 29/1/07	Gulf of California	Line transects survey, photo id, biopsy samples, habitat characterization, and sounds recording.	Residence and movements; mark-recapture with photo id. Relative abundance; numbers of individual's vs. survey effort. Vocalizations; vocalizations and behavior. Habitat; topographic features, sst, and primary productivity.	J. Urbán, UABCS; Cárdenas <i>et al.</i> , (2006a,b)
Humpback whale	15/1/06 to 1/4/06 and 25/1/07 to 20/3/07	Mexican Pacific	Transects survey, photo id, biopsy samples.	Abundance/mark-recapture with photo id. Distribution/sightings location (GIS). Anthropogenic impacts/dorsal fin, flukes and peduncles scars. Blubber. Movements and migration/mark-recapture with photo id. Genetics	J. Urbán, UABCS; Urbán <i>et al.</i> , (2006)
Gray whale	1-28/2/06	Mexican Pacific	Census, transects survey, photo id, blow analysis, and	Abundance; census and photo id.	J. Urbán, UABCS;

	and 3/2/07 to 2/4/07		sounds recording.	Distribution; sightings location (GIS). Health assessment; blows metabolites and body condition. Residence, site fidelity, movements, migration, birth rates; mark- recapture with photo id. Vocalizations; vocalizations.	González <i>et al.</i> , (2006)
Gray whale	1/06 to 3/06	Bahia Magdalena, Baja California	Transects, recording sounds w/passive methods	Distribution; behaviour	H. Pérez-Cortés, SFS

3. MARKING DATA

3.1 Field work

3.1.1 Natural marking data

Provide this in the form of a table, e.g.

Species	Feature	Area/stock	No. photo-id'd	Catalogue (Y/N)	Catalogue total	Contact person/institute; refs
Common bottlenose dolphin	Dorsal fin	Mexican Pacific coast, Revillagigedo Islands	ca. 30	Y	207	L. Medrano, ICMYL UNAM
Rough-toothed dolphin	Dorsal fin	Mexican Pacific coast	0	Y	128	L. Medrano, ICMYL UNAM
Dwarf sperm whale	Dorsal fin	Mexican Pacific coast	0	Y	14	L. Medrano, ICMYL UNAM
Humpback whale	Fluke, Dorsal fin	Mexican Pacific coast, Revillagigedo Islands	193 flukes	Y	2552	L. Medrano, ICMYL UNAM; J. Jacobsen
Blue whale	Flank, flukes	Eastern North Pacific	100	Y	500	D. Gendron, CICIMAR-IPN
Beaked whales	Dorsal fin and body scars	Gulf of California	2	Y	8	J. Urbán, UABCS
Humpback whale	Fluke	Mexican Pacific/North Pacific	136 (2006)	Y	1040	J. Urbán, UABCS
Gray whale	Dorsal fin	Mexican Pacific/Eastern North Pacific	258 (2006)	Y	4437	J. Urbán, UABCS
Gray whale	Back/knuckles, right side	Eastern North Pacific	120	Y	350 aprox.	H. Pérez-Cortés, SFS

It would be useful to include the numbers by features recorded for some species e.g. humpback whales, where more than one is commonly used (e.g. flukes, lateral/dorsal fin). This would enable the Secretariat to maintain a directory for information purposes.

3.1.2. Artificial marking data

This would include such things as Discovery marks (especially recovery information) or external artificial tags.

3.1.3 Telemetry data

Include both satellite and radio-tags. A table is an appropriate way to summarise the data, e.g.:

Species	Tag type	No. successfully deployed	Maximum time transmitting	Contact person/institute; refs

3.2 Analyses/development of techniques

Give brief details of any analyses of marking data carried out (e.g. times/distances to resightings, biological parameters, etc.) with references where appropriate.

4. TISSUE/BIOLOGICAL SAMPLES COLLECTED

4.1 Biopsy samples (summary only)

Species	Area/stock	Calendar year/ season - no. collected	Archived (Y/N)	No. analysed	Total holdings	Contact person/institute
Humpback whale	Eastern North Pacific	127	Y	0	ca. 1000	L. Medrano, ICMYL UNAM
Common bottlenose dolphin	Gulf of California	2006/7	Y	7		D. Gendron, CICIMAR-IPN
Delphinus spp	Gulf of California	2006/19	Y	19		D. Gendron, CICIMAR-IPN
Blue whale (skin & blubber)	Baja California/ North Pacific	2006/40	Y	40		D. Gendron, CICIMAR-IPN
Cuvier's beaked whale	Gulf of California	2006/spring/1	Y	0	1	J. Urbán, UABCS
Humpback whale	Mexican Pacific/ North Pacific	2006/winter/121	Y	0	121	J. Urbán, UABCS
Gray whales (breath)	North Pacific	2006 and March/07	Y	0	55	L. Rojas-Bracho, INE; Jonna Mazet, UCD

4.2 Samples from directed catches (commercial, aboriginal and scientific permits) or bycatches

Species	Area/stock	Tissue type(s)*	No. collected	Archived (Y/N)	No. analysed	Contact person/institute

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

4.3 Samples from stranded animals

Species	Area/stock	Tissue type(s)*	No. collected	Archived (Y/N)	No. analysed	Contact person/institute
Blue whale	Eastern North Pacific	Skin, blubber	1	Y	0	L. Medrano, ICMYL UNAM
Baird's beaked whales	Gulf of California/ North Pacific	Skin, blubber, teeth.	10	Y	0	J. Urbán, UABCS

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

4.4 Analyses/development of techniques

Give brief details of any analyses of data carried out, with references where appropriate.

CICIMAR-IPN

Blue Whale: Sex determination and DNA(mt) are completed. Stable isotopes (carbon and nitrogen, Fatty acids (polar and non-polar) and steroid hormones determination are undergoing.

Bottlenose and common dolphins: Stable isotopes (C and N) analyses are undergoing.

ICMYL UNAM

Analysis of regional, seasonal and yearly nuclear and mitochondrial genetic variation of humpback whales in two localities of the Mexican Pacific coast and the Revillagigedo Islands.

Analysis of selection intensity of the dq_b2 locus of Major Histocompatibility Complex of cetaceans.

5. POLLUTION STUDIES

Information on available samples should be given in Section 4 although any clarification can be given here. The main purpose of this section is to give brief details of work in progress or completed analyses, with references where appropriate.

6. STATISTICS FOR LARGE CETACEANS

6.1 Corrections to earlier years' statistics for large whales

This is the correct place to include any corrections to statistics presented in earlier years. It is also appropriate to include references to studies that utilise time series of data here.

6.2 Direct catches of large whales (commercial, aboriginal and scientific permits) for the calendar year 20XX or the season 20XX/XX

Please summarise the information here in the form of a table. However, it must be noted that this summary is not considered to fulfil the obligation to supply data to the Commission as specified in the Schedule.

Species	Type of catch	Area/stock	Males	Females	Total landed	Struck and lost

6.3 Anthropogenic mortality of large whales for the calendar year 20XX or the season 20XX/XX

6.3.1 Observed or reported ship strikes of large whales (including non-fatal events)

The inclusion of this data was agreed by the Committee in 2004 (IWC, 2005a). If available, please use Latitude and Longitude for location or else specify as much detail as possible. Please indicate type of vessel, e.g. High-speed Ferry (HSF), Large Cargo (LC), Military (M), Fishing Vessel (FV), Passenger Carrying Excursion (PC), Other (O). Fate: Indicate if the whale swam away (X), appeared seriously injured (I), killed (D). Example given.

Whale species	Sex	No.	Date	Location	Vessel type	Speed	Fate	How observed	Contact person/ institute and refs
*Cut in half.									

6.3.2 Fishery bycatch of large whales

The inclusion of this data was agreed by the Committee in 2004 (IWC, 2005a). If available, please use Latitude and Longitude for location. Indicate fate of whale (R = released alive, D = discarded dead or seriously injured, K = kept for sale or specimen), targeted fish species (e.g. tuna, herring, etc.). The Committee also agreed that types of fishing gear involved in bycatch should be documented (IWC, 2005a). **Please use the internationally recognised standard gear description codes from FAO (given in Appendix 1)**, although more detail can be supplied if known. More detailed information and illustrations of the different types of fishing gear can be found on the FAO/FIGIS website¹. Please also include any instances of entanglement in shark exclusion nets, which are another important source of bycatch. Please indicate how observed: M = dedicated marine mammal observer, F = Fishery onboard observer, V = vessel logbook, A = anecdotal, DA = documented anecdotal, photos, etc.

Whale species	Sex	No.	Date	Location	Fate	Targeted fish species	Gear	How observed?	Source or contact
Gray whale	F	1	17/3/06	Ensenada, Baja California	D	unknown	unknown	DA	G. Heckel, gheckel@cice se.mx
Comments: Entangled in gear, cut off and sank.									

7. STATISTICS FOR SMALL CETACEANS

It was first agreed to include this information in a Commission resolution in 1976 (IWC, 1977, p.31)). Furthermore, in 2005 (IWC, 2006, Annex J) it was agreed that these data should be brought into line with those

¹ http://www.fao.org/figis/servlet/static?dom=root&xml=tech/gears_search.xml

reported for large cetaceans. **Therefore, this Section should be completed using the same guidelines as given in Section 6 above, *Statistics for large cetaceans*.**

7.1 Corrections to earlier years' statistics for small cetaceans

This would be a place to include any corrections to statistics presented in earlier years. It may also be appropriate to include references to studies that utilise time series of data here.

7.2 Direct catches of small cetaceans for the calendar year 20XX or the season 20XX/XX

Species	Type of catch	Area/stock	Males	Females	Total landed	Struck and lost

7.3 Anthropogenic mortality of small cetaceans for the calendar year 20XX or the season 20XX/XX

7.3.1 Observed or reported ship strikes of small cetaceans (including non fatal events)

Species	Sex	No.	Date	Location	Vessel type	Speed	Fate	How observed	Contact person/ institute and refs
*Cut in half.									

7.3.2 Fishery bycatch of small cetaceans

Species	Sex	No.	Date	Location	Fate	Targeted fish species	Gear	How observed?	Source or contact
Comments: Entangled in gear, cut off and sank.									

8. STRANDINGS

Give a paragraph detailing the nature of the strandings reporting process (e.g. completely opportunistic, one or more networks, coastline covered, seasonal coverage). Then complete the following summary table with information where people can go for more details.

Species	No. strandings	No. post mortems	Contact person(s)/ Institute(s)	Contact email address(es)
Blue whale	1	1	Iván Lira Torres, Univ. Mar	ilira@zicatel.umar.mx
Gray whale	4	0	G. Heckel, ICMME	gheckel@cicese.mx
Baird's beaked whale	1	10	J. Urbán, UABCS	jurban@uabcs.mx

9. OTHER STUDIES AND ANALYSES

This is the appropriate place to briefly summarise other aspects of cetacean research relevant to the Scientific Committee, including results of analyses and development of techniques not covered in earlier sections. Give references where appropriate.

Attention is drawn to the issues of priority Committee interest, including: management of whaling and Comprehensive Assessment of whale stocks - e.g. current stock size, recent population trends, carrying capacity, productivity and stock identity; effects of environmental change; scientific aspects of sanctuaries; and whalewatching.

INE

A population dynamics model is being developed to infer historical population levels and current status of the vaquita and to make predictions of the population trend under alternative bycatch regimes. The model uses estimates of abundance, bycatch and fishing effort.

10. LITERATURE CITED

Include all references cited in the text here. Please follow the official IWC style guide for references (<http://www.iwcoffice.org/publications/styleguide.htm>).

Cárdenas, H. G., Urbán, R.J. and Gómez-Gallardo, U.A. 2006a. Vocalizations and marine habitat of baleen and beaked whales. *Tech. Rep. for Scripps Institution of Oceanography*. 12.

Cárdenas, H. G., Urbán, R.J., Baird, R.W., Douglas, A.B., Burtenshaw, J., Hildebrand, J., Troyo, V.B., Gómez-Gallardo, A. and Calambokidis, J. 2006b. Hotspot de Zífidos? Resultados preliminares sobre la aAbundancia y distribución de zífidos en el suroeste del Golfo de California. *Oral presentation for the SOMEEMMA-SOLAMAC*, Mérida, México.

González, C.S., Urbán, R.J. and Swartz, S.L. 2006. Photographic identification and status of Eastern North Pacific gray whales (*Eschrichtius robustus*) on their winter breeding/calving range during the 2005-2006 winter breeding seasons, and analysis of the historical digital photographic database. *A Preliminary Final Report to The National Marine Fisheries Service (NOAA Fisheries, Office of Protected Resource, Marine Mammal Health and Stranding Response Program*. 20.

Guerrero-Ruiz, M., Pérez-Cortés, M.H., Salinas, Z.M. and Urbán, R.J. 2006. First Mass Stranding of Killer Whales (*Orcinus orca*) in the Gulf of California, Mexico. *Aquat. Mamm.* 32(3), 265-272.

Urbán, R.J., González, P.U. and Rojas-Bracho, L. 2006. Reporte para la Comisión para la Cooperación Ambiental del Plan de Acción de América del Norte para la Conservación de la Ballena Jorobada. Universidad Autónoma de Baja California Sur-Instituto Nacional de Ecología. 15pp [In Spanish].

11. PUBLICATIONS

Please follow the official IWC style guide for references (<http://www.iwcoffice.org/publications/styleguide.htm>).

11.1 Published or 'In Press' papers only

Please list all published or 'in press' papers. **It will be appreciated if you can send a pdf or reprint to the Secretariat for the library.**

Arroyo-Cabrales, J., Medrano-González, L. and Ceballos, G. 2005. Historia de la mastozoología en México. pp 67-71. In: G. Ceballos and G. Oliva (coords.) *Los mamíferos silvestres de México*. Fondo de Cultura Económica-CONABIO. México, DF. 986pp. P.:il. [In Spanish].

Bolaños-Jiménez, J. and Rojas-Bracho, L. 2005. A Review of Fisheries Bycatch of Marine Mammals in the Wider Caribbean Region. United Nations Environment Programme *UNEP (DEC)/CAR WG.27/INF.5*, 8pp.

Cárdenas, H.G., Urbán, R.J. and Gómez-Gallardo, U.A. 2006a. Vocalizations and Marine Habitat of Baleen and Beaked Whales. *Technical Report prepared for Scripps Institution of Oceanography*. 12.

Ceballos, G., Arroyo-Cabrales, J., Medellín, R.A., Medrano-González, L. and Oliva, G. 2005. Diversidad y conservación de los mamíferos de México. pp 21-66. In: Ceballos G. and G. Oliva (coords). *Los mamíferos silvestres de México*. Fondo de Cultura Económica-CONABIO. México, DF. 986pp. P.:il. [In Spanish].

Clapham, P.J., Childerhouse, S., Gales, N.J., Rojas-Bracho, L., Tillman M.F. and Brownell Jr, R.L. 2006. The whaling issue: Conservation, confusion, and casuistry. *Mar. Policy*. doi:10.1016/j.marpol.2006.09.004.

Davis, R.W., Jaquet, N., Gendron, D., Bazzino, G., Markaida, U. and Gilly, W. 2007. Diving behavior of sperm whales in relation to behavior of a major prey-species, the jumbo squid, in the Gulf of California, Mexico. *Mar. Ecol. Prog. Ser.* 333:291-302.

Guerrero-Ruiz, M.E.; Urbán-Ramírez, J. and Rojas-Bracho, L. 2006. *Las Ballenas del Golfo de California*. Instituto Nacional de Ecología, Semarnat. México, D.F. 524pp. + 12 in color. INE. [In Spanish].

Guerrero-Ruiz, M., Pérez-Cortés, M.H., Salinas, Z.M. and Urbán, R.J. 2006. First mass stranding of killer whales (*Orcinus orca*) in the Gulf of California, Mexico. *Aquat. Mamm.* 32(3), 265-272.

Heckel, G., Ladrón de Guevara, P. and Rojas Bracho, L. Aceptado. Cetáceos. In: E. Ezcurra and G. Daneman (eds.) *Bahía de los Ángeles: Recursos Naturales y Comunidad, Línea Base 2005*. San Diego Nat. Hist. Museum and PRONATURA. [In Spanish].

Ladrón de Guevara, P.P. 2005. La Ballena jorobada. *Megaptera novaeangliae* (Borowski, 1781). pp. 439-441. In: G. Ceballos and G. Oliva (coords.) *Los mamíferos silvestres de México*. Fondo de Cultura Económica-CONABIO. México, DF. 986pp. P.:il. [In Spanish].

Medrano-González, L. 2005. Rorcual menor. *Balaenoptera acutorostrata* (Lacépède, 1804); Delfín gris. *Grampus griseus* (G. Cuvier, 1812). pp. 430-431; 448-449. In: G. Ceballos and G. Oliva (coords). *Los mamíferos silvestres de México*. Fondo de Cultura Económica-CONABIO. México, DF. 986pp. P.:il. [In Spanish].

Medrano-González, L. and Vázquez-Cuevas, M.J. 2005. Rorcual de Bryde. *Balaenoptera edeni* (Anderson, 1878). pp 433-435. In: G. Ceballos and G. Oliva (coords.) *Los mamíferos silvestres de México*. Fondo de Cultura Económica-CONABIO. México, DF. 986pp. P.:il. [In Spanish].

Medrano-González, L. 2006. Hacia una dinámica de la mastofauna marina mexicana: Análisis de composición funcional y de algunas estructuras genéticas poblacionales. In: E. Vázquez-Domínguez and D.J. Hafner (eds.) *Genética y mamíferos mexicanos: Presente y futuro. New Mexico Museum of Natural History and Science Bulletin* 32: 9-19.

Munguia-Vega, A., Esquer-Garrigos Y., Rojas-Bracho L., Vazquez-Juarez R., Castro-Prieto A. and Flores-Ramirez S. *In press*. Genetic drift vs. natural selection in a long-term small isolated population: Major histocompatibility complex class II variation in the Gulf of California endemic porpoise (*Phocoena sinus*). *Mol. Ecol.*

Pérez-Cortés, M.H., Barrera, A.C.A. and Ollervides, F. 2006. First record of a humpback whale (*Megaptera novaeangliae*) mother and calf inside Bahía Magdalena, Baja California Sur, Mexico. *The Latin American Journal of Aquatic Mammals* 5(1):77-79.

Rojas-Bracho, L., Reeves, R.R. and Jaramillo-Legorreta, A. 2006. Conservation of the vaquita *Phocoena sinus*. *Mammal. Rev.* 36(3):179–216.

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Appendix 1. FOA fishing descriptions and codes

FAO FISHING GEAR CATEGORIES:		FALLING GEAR	
SURROUNDING NETS		Cast nets	FCN
With purse lines	PS	Falling gear (not specified)	FG
One-boat operated purse seines	PS1	GILLNETS AND ENTANGLING GEAR	
Two-boat operated purse seines	PS2	Set gillnets (anchored)	GNS
Without purse lines (lampara)	LA	Driftnets	GND
SEINE NETS		Encircling gillnets	GNC
Beach seines	SB	Fixed gillnets (on stakes)	GNF
Boat seines	SV	Trammel nets	GTR
Danish seines	SDN	Combined gillnet-trammel nets	GTN
Scottish seines	SSC	Gillnets and entangling gillnets (not specified)	GEN
Pair seines	SPR	Gillnets (not specified)	GN
Seine nets (not specified)	SX	TRAPS	
TRAWLS		Stationary uncovered pounds nets	FPN
Bottom trawls	TBB	Pots	FPO
Beam trawl	OTB	Fyke nets	FYK
Otter trawls (side or stern)	PTB	Stow nets	FSN
Pair trawls	TBN	Barriers, fences, weirs, etc	FWR
Nephrops trawls	TBS	Aerial traps	FAR
Shrimp trawls (not specified)	TM	Traps (not specified)	FIX
Midwater trawls		HOOKS AND LINES	
Otter trawls (side or stern)	OTM	Handlines and pole-lines (hand operated)	LHP
Pair trawls	PTM	Handlines and pole-lines (mechanised)	LHM
Shrimp trawls	TMS	Set longlines	LLS
Midwater trawls (not specified)	TM	Drifting longlines	LLD
Otter twin trawls	OTT	Longlines (not specified)	LL
Otter trawls (not specified)	OT	Trolling lines	LTL
Pair trawls (not specified)	PT	Hooks and lines (not specified)	LX
Other trawls (not specified)	TX	GRAPPLING AND WOUNDING	
DREDGES		Harpoons	HAR
Boat dredges	DRB	HARVESTING MACHINES	
Hand dredges	DRH	Pumps	HMP
LIFT NETS		Mechanised dredges	HMD
Portable lift nets	LPN	Harvesting machines (not specified)	HMX
Boat-operated lift nets	LNB	MISCELLANEOUS GEAR	MIS
Shore operated stationary lift nets	LNS	RECREATIONAL FISHING GEAR	RG
Lift nets (not specified)	LN	GEAR NOT KNOWN OR NOT SPECIFIED	NK
		SHARK CONTROL NETS	NSC
		DERELICT FISHING GEAR	