

# First record of a humpback whale, *Megaptera novaeangliae* (Borowski, 1781), stranding in Pará State, Northern coast of Brazil

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(With 1 figure)

Humpback whales (*Megaptera novaeangliae*) are found worldwide in all major oceans. They occur primarily in coastal and continental shelf waters and are highly migratory. It feeds during summer in mid-and high latitudes and mates and calves during winter in tropical or subtropical waters, often concentrated around islands or reef systems (Clapham and Mead, 1999).

Current information on the distribution of humpback whales in Brazil shows that the species is abundant at Abrolhos Bank 16° 40' and 19° 30' S (Martins et al., 2001; Morete et al., 2003), northeastern Brazil. Occasional sightings and strandings have been reported from Rio Grande do Sul 34° S to Maranhão State 2° S (e.g. Pinedo, 1985; Lodi, 1994; Siciliano, 1997; Furtado-Neto et al., 1998; Pizzorno et al., 1998; Severo et al., 2004; Magalhães et al., 2008). The present paper reports the northern most record of a humpback whale (*M. novaeangliae*) stranding in Brazilian coast.

On October 2008, a whale carcass was found by fishermen on Peruquara beach (00° 42' 26,0" S and 46° 57' 53,4" W), Quatipuru, Pará State, northern coast of Brazil. The stranding area consist of a coast of indentation, formed by lowlands with numerous indentations (for) corresponding to the outfall of the rivers and the various islands there (SUDEPE, 1975), forming a series of small estuaries (MMA, 1996). The continental shelf is wide, with islands and sand banks that are periodically flooded by the sea because the tidal amplitude which together with the Golfão Maranhense is the largest of Brazil (8 m) (SUDEPE, 1975). The northern region is highly influenced by the North Brazil Current which carries the waters of the outer continental shelf and slope to the northwest (MMA, 2006).

The whale carcass measured 10 m long and was in advanced state of decomposition (Code 4 according to Geraci and Lounsbury, 2005), with no head or flippers. The species identification was held by the number of throat grooves, body size and mainly by analyses of the scapula. According to Clapham and Mead (1999), the scapula of the humpback whale is extremely diagnostic,

lacking the acromion and having a very vestigial coracoid process. In all other cetaceans, both of the processes are strikingly large and well developed, especially the acromion. Also, Leatherwood and Reeves (1983) emphasize the robust body of the humpback whale in comparison with the other baleopterids and gives 14-35 throat grooves for this specie, extending to the nave. The specimen stranded in Pará had 27 throat grooves and the scapula shows all the characteristics mentioned above, measuring 130 cm in length and 84 in width (Figure 1).

The whale's cause of death was not identified, although tissue samples were collected for further analysis. Nevertheless, seismic prospecting surveys were held in Pará-Maranhão Basin on the stranding period (unpublished information), a fact that must be observed with attention since harmful effects of this activity on marine mammals are not yet clear (Parente, 2008).

The present report of this species in this region, in addition with strandings that occurred along Ceará (Furtado-Neto et al., 1998), Piauí (Severo et al., 2004)



**Figure 1.** Right scapula of the humpback whale (*Megaptera novaeangliae*) stranded on Peruquara beach, northern coast of Brazil (130 × 84 cm), evidencing the vestigial coracoid and the absence of the acromion.

and Maranhão State coast (Magalhães et al., 2008), may indicate a possible increase of the humpback whale population along the Southwestern Atlantic, probably extending their distribution area towards the northern coast of Brazil, like others authors supposed (Lodi, 1994; Andriolo et al., 2006; Magalhães et al., 2008; Rossi-Santos et al., 2008). Although it is not yet clear whether these areas correspond to the typical range of the species, there are signs that with population growth it is reoccupying areas further north, where it should be their historical occurrence (Milton Marcondes, personal communication). Dutch whalers present historical records of sightings and catches of humpback whales off the northern Brazilian coast in the first decades of the twentieth century (Slijper and Van Utrecht, 1959 apud Siciliano et al., 2008).

Genetic analyses will be conducted to identify the stock of this specimen and verify if it is from a Southern or Northern population, although the date of the stranding (October) suggests the former alternative (stock A). Nevertheless, this is the northern most record of the species in the Brazilian coast.

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## References

- ANDRIOLO, A., MARTINS, CCA., ENGEL, MH., PIZZORNO, JL., MÁ-S-ROSA, S., FREITAS, AC., MORETE, ME. and KINAS, PG., 2006. The first aerial survey to estimate abundance of humpback whales (*Megaptera novaeangliae*) in the breeding ground off Brazil (Breeding Stock A). *Journal of Cetacean Research and Management*, vol. 8, no. 3, p. 307-311.
- CLAPHAM, PJ. and MEAD, JG., 1999. *Megaptera novaeangliae*. *Mammalian Species*, vol. 604, p. 1-9.
- FURTADO-NETO, MA., MONTEIRO-NETO, C., CAMPOS, A., LIEN, J. and CARR, S., 1998. Are Northern-Hemisphere humpback whales stranding in South Atlantic beaches? Answers from mitochondrial DNA sequences. In *Abstracts da 8 Reunião de Trabalhos de Especialistas em Mamíferos Aquáticos da América do Sul e 2 Congresso da Sociedade Latino Americana de Mamíferos Aquáticos - SOLAMAC*. Olinda, 1998. p. 89.
- GERACI, JR. and LOUNSBURY, VJ., 2005. *Marine mammals ashore: a field guide for strandings*. 2 ed. Baltimore: National Aquarium in Baltimore. 371 p.
- LEATHERWOOD, S. and REEVES, RR., 1983. *The sierra club handbook of whales and dolphins*. San Francisco: Sierra Club Books. 302 p.
- LODI, L., 1994. Ocorrência de baleias-jubarte, *Megaptera novaeangliae*, no arquipélago de Fernando de Noronha, incluindo um resumo de registros de capturas no nordeste do Brasil. *Biotemas*, vol. 7, no.1 e 2, p. 116-123.
- MAGALHÃES, FA., TOSI, CH., GARRI, RG., CHELLAPPA, S. and SILVA, FL., 2008. Cetacean diversity on the Parnaíba Delta, Maranhão State, northeastern Brazil. *Revista Brasileira de Biologia = Brazilian Journal of Biology*, vol. 68, no. 3, p. 545-551.
- Ministério do Meio Ambiente - MMA, 1996. *Macrodiagnóstico da zona costeira do Brasil*. Brasília. 280 p. (Programa Nacional de Gerenciamento Costeiro).
- Ministério do Meio Ambiente - MMA, 2006. *Programa REVIZEE: avaliação do potencial sustentável de recursos vivos na zona econômica exclusiva: relatório executivo*. Brasília. 280 p.
- MARTINS, CCA., MORETE, ME., ENGEL, MH., FREITAS, AC., SECCHI, ER. and KINAS, PG., 2001. Aspects of habitat use patterns of humpback whales in the Abrolhos Bank, Brazil, breeding ground. *Memoirs of the Queensland Museum*, vol. 47, no. 2, p. 563-570.
- MORETE, ME., PACE III, RM., MARTINS, CCA., FREITAS, AC. and ENGEL, MH., 2003. Indexing seasonal abundance of humpback whales around Abrolhos Archipelago, Bahia, Brazil. *Latin American Journal of Aquatic Mammals*, vol. 2, no. 1, p. 21-28.
- PARENTE, CL., 2008. *Interações entre cetáceos e aquisições sísmicas marítimas no Brasil*. Recife: Universidade Federal de Pernambuco. 83 p. [Tese de Doutorado]
- PINEDO, MC., 1985. A note on a stranding of the humpback whale on the southern coast of Brazil. *Scientific Reports of the Whales Research Institute*, vol. 36, p. 165-168.
- PIZZORNO, JLA., LAILSON-BRITO, J., DORNELES, PR., AZEVEDO, AF. and GURGEL, IMG., 1998. Review of strandings and additional information on humpback whales, *Megaptera novaeangliae*, in Rio de Janeiro, southeastern Brazilian coast (1981-1997). *Report of the International Whaling Commission*, vol. 48, p. 443-446.
- REEVES, RR., STEWART, BS., CLAPHAM, PJ. and POWELL, JA., 2002. *National Audubon Society guide to marine mammals of the World*. New York: Chanticleer Press. 528 p.
- ROSSI-SANTOS, MR., NETO, ES., BARACHO, CG., CIPOLOTTI, SR., MARCOVALDI, E. and ENGEL, MH., 2008. Occurrence and distribution of humpback whales (*Megaptera novaeangliae*) on the north coast of the State of Bahia, Brazil, 2000-2006. *ICES Journal of Marine Science*, vol. 65, no. 4, p. 667-673.
- SEVERO, M., BARRAGANA, M., COSTA, AF., MARINHO, AC. and TANNÚS, RM., 2004. Encalhe de uma baleia Jubarte (*Megaptera novaeangliae*) na Praia da Pedra do Sal em Parnaíba-PI. In *Abstracts do 3 Encontro Nacional sobre Pesquisa e Conservação dos Mamíferos Aquáticos*. 01 a 07 de abril de 2004. Itaparica-BA. Errata.
- SICILIANO, S., 1997. *Características da população de baleias-jubarte (Megaptera novaeangliae) da costa brasileira, com especial referência aos Bancos de Abrolhos*. Rio de Janeiro: Universidade Federal Rural do Rio de Janeiro. 113 p. [Dissertação de Mestrado].
- SICILIANO, S., EMIN-LIMA, NR., COSTA, AF., RODRIGUES, ALF., MAGALHÃES, FA., TOSI, CH., GARRI, RG., SILVA, CR. and SILVA Jr., JS., 2008. Revisão do conhecimento sobre os mamíferos aquáticos da costa norte do Brasil. *Arquivos do Museu Nacional*, vol. 66, no. 2, p. 381-401.
- Superintendência do Desenvolvimento Pesca - SUDEPE, 1975. *Prospecção dos recursos pesqueiros das reentrâncias maranhenses*. São Luís. 190 p.