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Short Note

An Antarctic Minke Whale (*Balaenoptera bonaerensis*) Live-Stranding in Venezuela: First Record for the Caribbean Sea

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The Antarctic minke whale (*Balaenoptera bonaerensis*; AMW) is considered endemic to the Southern Hemisphere (Rice, 1998; Deméré, 2014), where it is widespread south of 60° S in the austral summer (Jefferson et al., 2015). This species migrates northward to breeding grounds off Australia, South Africa, Brazil, or other countries during the austral winter, although individuals can be found in Antarctic waters year-round (Jefferson et al., 2015). In the southwestern Atlantic Ocean, AMWs occur off the northeastern coast of Brazil between June and December, with a peak in September through November (Williamson, 1975). This is consistent with the migration pattern of other baleen whales from the Southern Hemisphere (Stern, 2017). The name "minke whale" refers to at least two species: (1) the common minke whale (*Balaenoptera acutorostrata*) and (2) the AMW. The common minke whale includes three currently recognized subspecies: (1) *B. a. acutorostrata* in the North Atlantic, (2) *B. a. scammoni* in the North Pacific, and (3) a dwarf, unnamed form in the Southern Hemisphere, where it is sympatric with the AMW (Jefferson et al., 2015).

There exist four confirmed records of AMWs in the North Atlantic Ocean (Table 1; Figure 1), including intentional kills in Suriname in 1963 (Husson, 1978; de Boer, 2015) and in the Arctic Ocean in 1996 (Glover et al., 2010); an incidental catch in Togo, Africa, in 1998 (Segniagbeto et al., 2014); and a stranding in the northern Gulf of Mexico in 2013 (Rosel et al., 2016). In addition, Glover et al. (2010, 2013) confirmed the occurrence of hybrids between common minke whales and AMWs in the Arctic Ocean. The most

Table 1. Summary of confirmed records of the Antarctic minke whale (*Balaenoptera bonaerensis*; AMW) in the Northern Hemisphere and tropical Pacific Ocean in chronological order. NA = not available.

#	Date (d/mo/y)	Latitude	Longitude	Sex	Location	Source(s)
1	Oct. 1963	5.8528	-55.9561	Female	Suriname	Husson, 1978; de Boer, 2015
2	14 Nov. 1985	-8.167	-109.9	NA	Pacific Ocean	R. L. Pitman, pers. comm.
2	30 June 1996	70.95	-8.85	NA	Arctic Ocean	Glover et al., 2010
3	**18 March 1997**	**10.9459**	**-71.51462**	**Male**	**Venezuela**	**This work**
4	1 Aug. 1998	NA	NA	Male	Western Africa (Togo)	Segniagbeto et al., 2014
5	5 Feb. 2013	29.4999	-91.7534	Female	Northern Gulf of Mexico, USA	Rosel et al., 2016

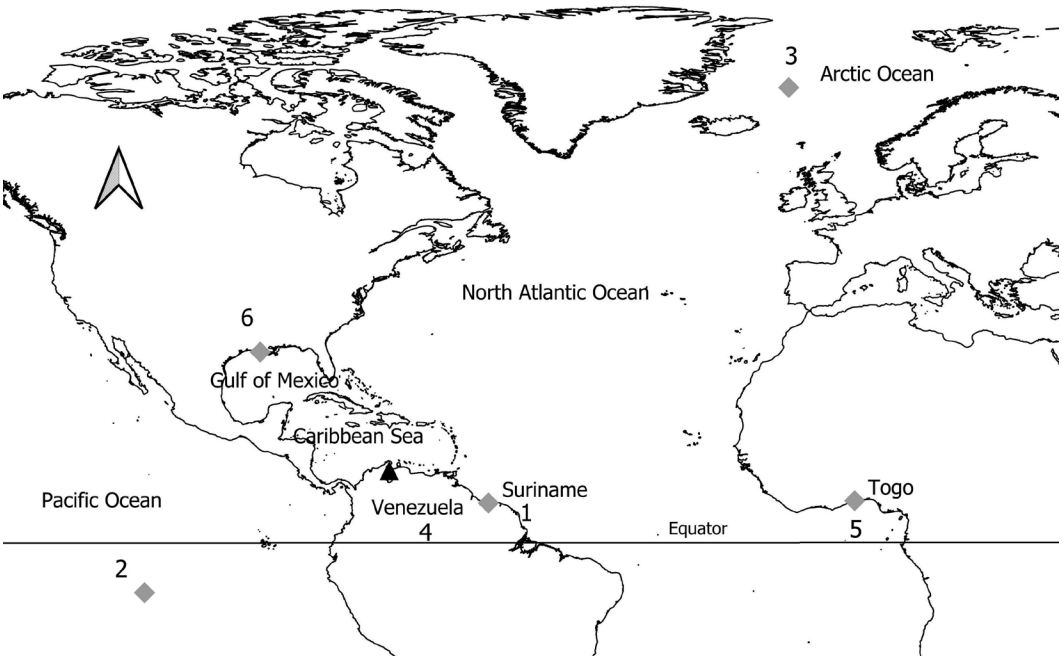

Figure 1. Stranding site of an Antarctic minke whale (*Balaenoptera bonaerensis*; AMW) in the Gulf of Venezuela (black triangle), as well as locations of all available records in the Northern Hemisphere and tropical Pacific Ocean (gray diamonds). Numbers indicate chronological order as listed in Table 1.

Table 2. Morphometrics of a live-stranded adult male AMW in the Gulf of Venezuela, 18 March 1997

Description	Measurement (cm)
Total length	883
Length, tip of the upper mandible to the center of blowhole	110
Length, tip of the upper mandible to the center of the eye	172
Length of the pectoral flipper	130
Width of the pectoral flipper	35
Fluke width	53
Fluke length	248
Length, tip of the upper mandible to the end of the ventral grooves	423
Distance between the genital and anal slits	68
Distance between the anal slit and the flukes notch	230

conspicuous morphological characteristic to differentiate between the common minke whale and the AMW is the presence of the white patch on the flippers of the common minke (Jefferson et al., 2015).

In this short note, we document a live-stranding of an AMW in Venezuela, the first record of this species from the Caribbean Sea. The short note is based on the original stranding report (Jiménez et al., 1997), as well as on information, data, and pictures gathered onsite by both authors (JBJ and TG), among others, as officers of the former Ministry of Environment's Autonomous Service Profauna (see "Acknowledgments"). In

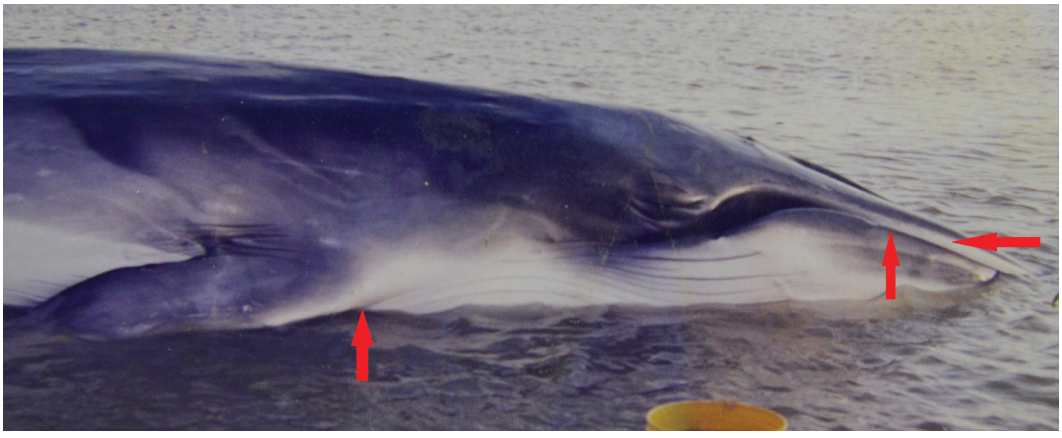

Figure 2. Lateral, right view of an AMW stranded in the southern Gulf of Venezuela on 18 March 1997. Red arrows indicate diagnostic characteristics mentioned in the text. (*Photo credit:* Profauna-MARN archive)

July 2023, a critical review by one of us (JBJ) of the before-mentioned report and color photographs of the stranding found that the original identification of the specimen as a Bryde's whale (*Balaenoptera edeni*) was incorrect due to the absence of accessory rostral ridges. Accordingly, a new analysis was performed to properly identify the specimen to the lowest possible taxon by using specialized literature (Williamson, 1975; Best, 1985; Arnold et al., 2005; Zenitani & Kato, 2010; Jefferson et al., 2015; Hutchings et al., 2023). The new analysis included a detailed review of the color pattern and characteristics of the baleen plates in the original color photographs (see "Acknowledgments").

On 18 March 1997, local fishers reported a live-stranded whale in the Ciénaga Los Olivitos Wildlife Refuge (approx. 10° 56' 24" N, 71° 30' 52" W) in the southern Gulf of Venezuela, State of Zulia (Figure 1). From 18 to 20 March, the fishers, together with personnel from the San Carlos National Guard Coastguard and officers of the Wildlife Refuge, unsuccessfully attempted to release the whale to deeper waters about a dozen times. The whale, an 883-cm adult male, died on 20 March. Other morphometric measurements are included in Table 2. No evidence of macroscopic lesions or injuries were found on the body during the release attempts (Figures 2 & 3); and although it appears to be slightly emaciated in the photos, no cause of stranding or death was determined. Samples of the baleen plates were sent to the Museo de la Estación Biológica de Rancho Grande (EBRG) in Maracay, State of Aragua, and entered under catalog number EBRG-21843.

The whale was re-identified as an AMW based on diagnostic characteristics visible in Figures 2 and 3 such as (1) color pattern of the pectoral flippers, including outer right pectoral flipper, steely-grey, without the white patch, dark trailing edge, and anterior edge white, especially around the shoulder region (not a common minke whale); (2) outer portion of the right upper mandible white, but the right lower mandible a darker pigment (not a fin whale [*Balaenoptera physalus*]); (3) asymmetric color pattern of baleen plates with the posterior ones black and anterior ones yellow;

Figure 3. The same AMW as in Figure 2. Red arrows indicate diagnostic characteristics mentioned in the text. (*Photo credit:* Profauna-MARN archive)

Figure 4. Aspect of the individual baleen plates (n = 11; catalog number EBRG-21843) (*Photo credit:* José Reinaldo Moreno)

and (4) outer side of posterior baleen plates black and internal side yellow (Figure 4; see Zenitani & Kato, 2010). In summary, the absence of the white patch in the flippers rules out the common minke whale, and the dark pigmentation in the right, lower mandible rules out the fin whale.

The reasons for the presence of the AMW north of the equator in all of the recorded strandings (n = 2), takes (n = 2), and sightings (n = 2) in the Atlantic, Arctic, and the tropical Pacific Oceans are not clear, and the small sample size of available records (n = 6) precludes any formal analysis. It is generally accepted that this species migrates north during the austral winter and that some overwinter in Antarctic waters (Jefferson et al., 2015), while peak numbers occur on breeding grounds off the northeastern tip of Brazil between September and November (Williamson, 1975; Zerbini et al., 1997). The occurrence of AMWs in Suriname (Husson, 1978; de Boer, 2015), the Arctic Ocean (Glover et al., 2010), and western Africa (Segniagbeto et al., 2014) between August and October is consistent with the normal migratory timing of baleen whales from the Southern Hemisphere (Stern, 2017), but the strandings in the northern Gulf of Mexico (in February; Rosel et al., 2016) and the present one in Venezuela (in March) are not. Thus, the presence of AMWs in the Northern Hemisphere during the late austral summer and early autumn, when most of the population is distributed on the feeding grounds in Antarctica, could be due more to random displacement, range expansion, or other causes (see Stern, 2017). Herein, it is reaffirmed that AMWs can venture into the Northern Hemisphere and the tropical Pacific Ocean, and vagrants might be found there outside of migratory timing, but the causes of such movements are yet to be understood. In conclusion, the presence of AMWs north of the equator and tropical regions could be more common than previously thought, and researchers conducting field work in the Northern Hemisphere and tropical regions should be alert to the possibility of this species being found and become familiar with its diagnostic characteristics.

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