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First Record of a Blainville's Beaked Whale (*Mesoplodon densirostris*) in Cuba

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The Ziphiidae family (beaked whales) is poorly known in comparison to other cetaceans (MacLeod et al., 2006). Since sea surface observations of these odontocetes are generally brief and in poorly accessible locations, a large amount of their biological information is obtained from strandings (e.g., MacLeod et al., 2003; Whitt et al., 2011; Bachara et al., 2020). The Blainville's beaked whale (*Mesoplodon densirostris*; BBW) is no exception with several stranding records throughout the world, including South Africa (Pringle, 1963), Tasmania (Guiler, 1966), Brazil (Castello & Pinedo, 1980), the Cayman Islands (Rosario-Delestre et al., 1999), Canada (McAlpine & Rae, 1999), New Caledonia (Borsa & Robineau, 2005), Fiji (Leslie et al., 2005), The Netherlands (Camphuysen et al., 2008), Ecuador (Félix et al., 2011), Kenya (Valle, 2012), Southeast Asia (Bachara et al., 2015), the Philippines (Bachara & Blatchley, 2018), El Salvador (Bachara et al., 2020), and the Mexican Central Pacific (Ortega-Ortiz et al., 2021), among others.

The BBW is thought to be the most abundant species with the largest worldwide range among all members of the genus *Mesoplodon* (Reeves et al., 2003; MacLeod et al., 2006). Its distribution comprises tropical and warm temperate waters of all oceans, from low to mid-latitudes of both hemispheres, including higher latitudes, probably due to warm water currents such as the Gulf Stream and the Agulhas Current (Mead, 1989; MacLeod et al., 2006; International Union for Conservation of Nature [IUCN], 2020).

Limited movements and a strong site fidelity have been evidenced for the BBW off Hawaii and the Bahamas Archipelago, suggesting a population structure (IUCN, 2020; Joyce et al., 2020). In the Bahamas Archipelago, this fidelity is probably related to foraging as BBWs have shown inter-individual spatial association with the benthos (Joyce et al., 2017), possibly reflecting a switch from prey from the mid-water/lower mesopelagic zone to prey from the benthic boundary layer as evidenced by Arranz et al. (2011) off the Canary Islands. In this regard, like other members of the Ziphiidae family, the BBW is a deep diver that inhabits mainly oceanic waters. Its mean diving depth is 1,156 m (range from 880 to 1,455 m; Schorr et al., 2009). However, they can be found close to shore, around islands and continental shelf edges (MacLeod & Zuur, 2005) such as the Bahamas Archipelago close to Cuba, Hawaii, and the Canary Islands, where long-term surveys have been conducted (Johnson et al., 2007; Baird et al., 2011; Joyce et al., 2017; IUCN, 2020).

Herein, we provide the first stranding report of a BBW in Cuba. The species was identified based on its characteristics by two of the authors (JA-MF and WB). The 4.75-m-long adult female stranded on Playa Santa Lucía (21.570438° N, 77.047246° W), located ~20 km from Nuevitas and ~110 km from Camagüey in central Cuba, on 11 January 2022 (Figure 1). This species is characterized by a spindle-shaped body with a small head, a small dorsal fin located about two thirds of the way back from the snout tip, small and narrow flippers, and tapered flukes with no median notch. There is also a single pair of shallow throat grooves, and the blowhole is a crescent

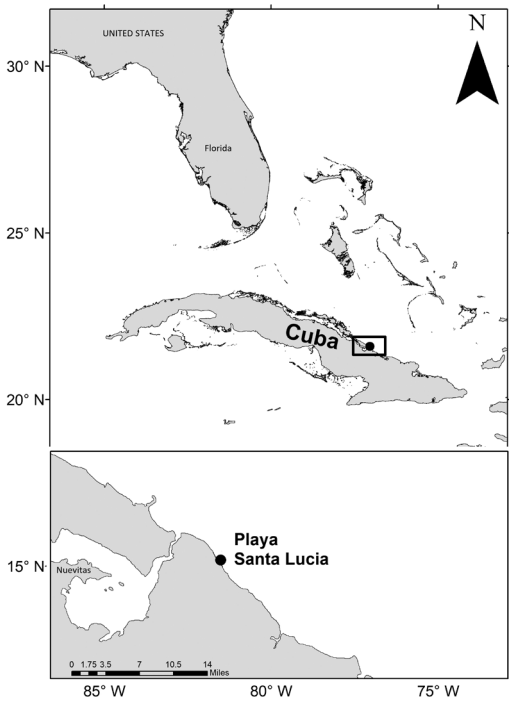

Figure 1. Location of Playa Santa Lucía, close to Nuevitas in the east coast of Cuba, where the Blainville's beaked whale (*Mesoplodon densirostris*) stranded

with the ends pointing forward; therefore, the "hinge" is at the front. The beak is moderately long in adults but much shorter and stubbier in younger animals (Figure 2). The posterior half of the lower jaw of this species is highly arched (Mead, 1989). Because of local authorities' protocols related to public health and response to marine mammal strandings, the body was quickly transported to a dune area and buried on the same date as the reported stranding. Because of this, even though its condition code was between 2 and 3 (between freshly dead and moderately decomposed), it was not possible to perform a necropsy or take samples to make a genetic identification. The cause of death was not identified; however, the individual did not show anthropogenic marks of any kind (e.g., from fishing nets or boat strikes) nor was it found to be in poor body condition. A brief evaluation found sand in its blowhole, up to 10 cm inside, suggesting that the individual was alive when it stranded. Additionally, some lacerations and hematomas were observed, which may have resulted from its struggle in the intertidal zone prior to its death.

Research on marine mammals around Cuba is scarce. Most of the knowledge from this region comes from gray literature, strandings, or from local fishermen. A solid compilation by Whitt et al. (2011) confirmed the presence of 17 cetacean species in the Cuban Exclusive Economic Zone (EEZ—around 200 nmi around the territory). These confirmed species included three baleen whales (two of them were identified from stranding records) and 14 odontocetes (13 of them were identified from stranding records). The Cuvier's beaked whale (*Ziphius cavirostris*) is among these species that were stranded on the northern (Varona, 1980) and southern (Blanco-Domínguez, 2011) coasts of Cuba. The Gervais' beaked whale (*Mesoplodon europaeus*) is the other confirmed beaked whale reported in the Cuba EEZ, including strandings in different areas, such as the northern coast east of La Habana (Varona, 1985; Whitt et al., 2011). The Sowerby's beaked whale (*Mesoplodon bidens*) has not been confirmed in this region; however, this species is classified as possible (Whitt et al., 2011) because of its occurrence in the northern Gulf of Mexico (MacLeod & Mitchell, 2006).

Although not confirmed by sightings or strandings, Whitt et al. (2011) classified the BBW as a "possible" species in the Cuban EEZ because of its wide distribution throughout tropical, subtropical, and warm-temperate waters of the world (Reeves et al., 2003; MacLeod et al., 2006) and the confirmed BBW stranding recorded nearby at the Cayman Islands (Rosario-Delestre et al., 1999). Moreover, there are sightings of this species in waters around The Bahamas Archipelago, ~390 km east of Cuba (MacLeod et al., 2004), off Puerto Rico (Rosario-Delestre et al., 1999), and near Guadeloupe Island in the Caribbean Sea (Rinaldi et al., 2006). Additionally, there are reports of several unidentified beaked whales offshore of La Habana, just outside the EEZ (e.g., Aguayo, 1954; Whitt et al., 2011).

Our BBW stranding record in central Cuba and the relatively short period that elapsed since its death (1 or 2 d), when added to sightings in waters off other regions nearby (mentioned above), reinforces the possibility of this species inhabiting the Cuba EEZ. This is an important contribution to the still incipient knowledge on the marine mammal fauna in Cuban waters, especially regarding (potential) cetacean diversity around this country, providing an even higher resolution of knowledge of the BBW that, although classified as "Least Concern" by the International Union for Conservation of Nature's (2020) *Red List*, is still part of the lesser-known family of cetaceans (Johnson et al., 2004; MacLeod et al., 2006), enhancing the relevance of this type of report. Moreover, based on this event and future similar ones (regardless

Figure 2. The Blainville's beaked whale that stranded on Playa Santa Lucía, Cuba, on 11 January 2022: (1) small head, (2) single pair of shallow throat grooves, (3) small dorsal fin about two thirds of the way back from the snout tip, (4) small and narrow flippers, and (5) moderately long beak in this stage (adulthood).

of location), a continuous improvement of measures regarding marine mammal stranding response programs is encouraged. This is in relation to carcass handling (e.g., a more thorough analysis prior to burial), its analysis, and the significance of taking samples for a better stranding assessment.

Stranding data can be a useful tool to better understand marine mammal distribution patterns around a region (e.g., Elorriaga-Verplancken et al., 2020). However, these events must also be considered carefully. These are not necessarily indicative of an actual distribution because they can involve sick or injured individuals that could have moved beyond their normal range, or carcasses may have been transported and deposited by currents (MacLeod et al., 2006; Whitt et al., 2011). More systematic surveys in the Cuba EEZ are recommended to formally conclude that this species inhabits this region. Still, BBW records in other regions nearby mentioned in this report suggest that its natural presence in the Cuba EEZ should be expected.

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