

## Short Note

### First Report of Pygmy Killer Whales (*Feresa attenuata*) in Cuba

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Pygmy killer whales (*Feresa attenuata*; Gray, 1874) are rare offshore cetaceans that belong to the family Delphinidae. Although this species has been recorded in tropical and subtropical waters worldwide, it continues to be one of the least known delphinids (Baird, 2018). In the Caribbean Sea, there have only been a total of 10 published records that included sightings and strandings (Caldwell & Caldwell, 1971; Rodríguez-López & Mignucci-Giannoni, 1999; Mignucci-Giannoni et al., 2000; Bolaños & Villarroel-Marin, 2003; Bermúdez-Villapol et al., 2006; Table 1). Only one confirmed record exists for the Greater Antilles, and no records of this species exist in Cuban waters (Whitt et al., 2011).

Pygmy killer whales are difficult to distinguish at sea from the closely related melon-headed whale (*Peponocephala electra*), and caution must be taken

as several reports have mistaken these species (Baird, 2018; Perryman & Danil, 2018). Similarly, Castro (2004) misidentified another closely related species, the false killer whale (*Pseudorca crassidens*), as a pygmy killer whale (Baird, 2010). A previous identification of the pygmy killer whale made in Venezuela (Romero et al., 1991) was reevaluated due to the difficulty of visual confirmation of this species at sea (Romero et al., 2001).

Externally, pygmy killer whales have a rounded head (seen from the side and above) and rounded flipper tips (Baird, 2018), while melon-headed whales have a pointed head (seen from above) and sharply pointed flipper tips (Perryman & Danil, 2018). Both species have similar dorsal fins and white lips (Baird, 2018; Perryman & Danil, 2018); however, Yang et al. (2019) showed that the dorsal

**Table 1.** Records of the pygmy killer whale (*Feresa attenuata*) in the Caribbean region

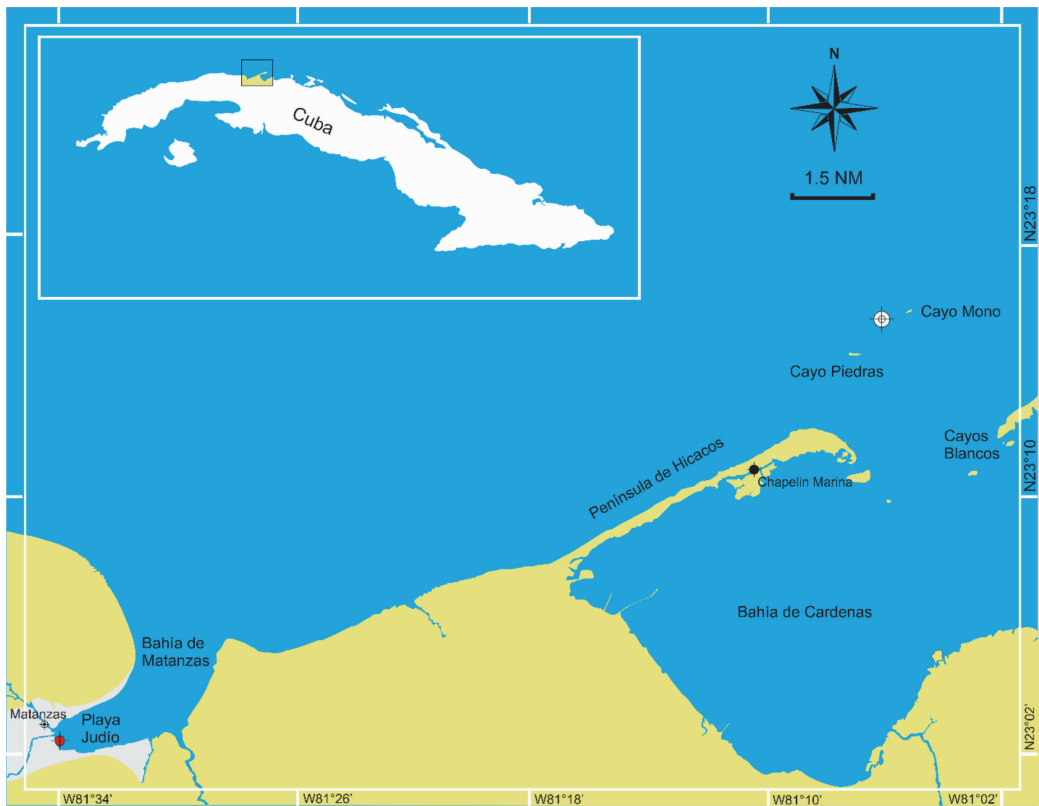
Record	Number of individuals	Country	Type of record	Date	Source
1	1	Saint Vincent	Stranding	1969	Caldwell & Caldwell, 1971
2	5	British Virgin Islands	Stranding (3 dead, 2 alive)	1995	Mignucci-Giannoni et al., 2000
3	1	Venezuela	Skull	1996	Bolaños & Villarroel-Marin, 2003
4	1	Puerto Rico	Stranding	1997	Rodríguez-López & Mignucci-Giannoni, 1999
5	3	Venezuela	Stranding (1 dead, 2 alive)	1998	Bolaños & Villarroel-Marin, 2003
6	3	Venezuela	Stranding	2002	Bermúdez-Villapol et al., 2006
7	4	Venezuela	Sighting	2003 (June)	Bermúdez-Villapol et al., 2006
8	3	Venezuela	Sighting	2003 (July)	Bermúdez-Villapol et al., 2006
9	3	Venezuela	Sighting	2003 (Aug)	Bermúdez-Villapol et al., 2006
10	1	Venezuela	Stranding	2004	Bermudez-Villapol et al., 2006

fins can be distinguished by the relative width of the fin at the apex, with the pygmy killer whale having a narrower fin. Adult pygmy killer whales in tropical areas often have scarring on the ventral area from cookie-cutter shark bites (Baird, 2018). In addition, pygmy killer whales often have paired white scars (tooth rakes) from conspecific interactions (Baird, 2018). Maximum length reported for both species is very similar at around 2.6 to 2.7 m (Baird, 2018; Perryman & Danil, 2018).

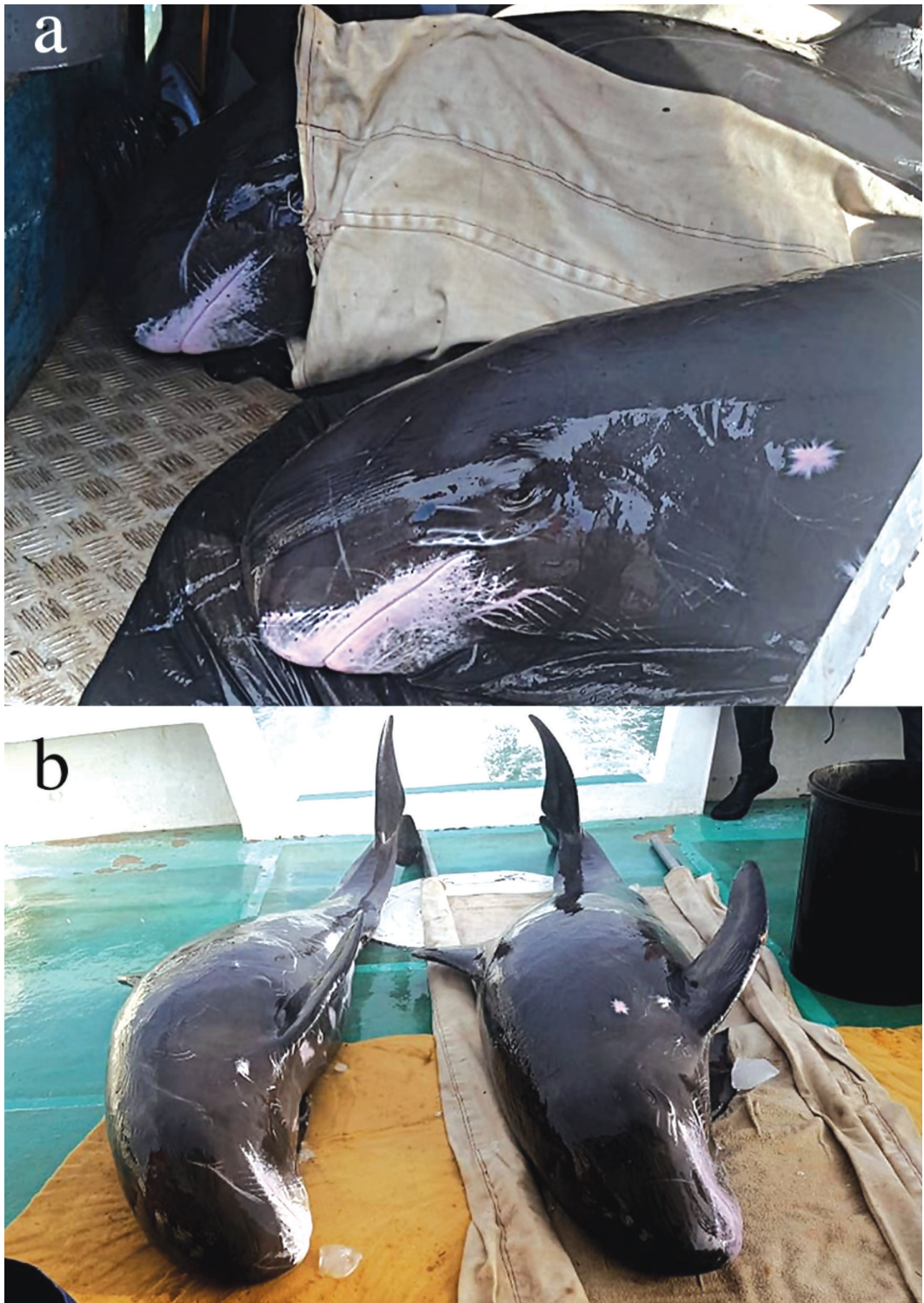
Pygmy killer whales and melon-headed whales differ greatly in their social behavior. Pygmy killer whales are found in relatively small groups (from pairs to groups of 30 to 40) and, in Hawaii, rarely associate with other species (McSweeney et al., 2009); while melon-headed whales are most often found in very large groups (some up to 1,000) that form mixed herds with other dolphin species (Aschettino et al., 2012).

On 6 September 2016, two small cetaceans were observed at “El Judio” beach ( $23^{\circ} 02' 27.35''$  N,  $81^{\circ} 34' 10.77''$  W) on the north coast of Matanzas province, Cuba (Figure 1), by a local fisherman. This beach, located in the city of Matanzas, is

characterized as an urban sheltered sandy beach with little or no surf. Both cetaceans were found in shallow water (max. 1.6 m) at the inner most portion of the Bahía de Matanzas next to the shore at least 1.63 nmi ( $\sim 3$  km) from deep water ( $> 200$  m). The pair were seen floating motionless (i.e., akinesia) on the surface of the water in the morning hours (A. Rivero-Gonzalez, pers. comm., 25 May 2020). Due to the relative unresponsive behavior of the cetaceans and their postural instability, the fisherman remained with them for 6 h, maintaining them on the surface (see supplemental video; the supplemental video is available in the “Supplemental Material” section of the *Aquatic Mammals* website: [https://www.aquaticmammalsjournal.org/index.php?option=com\\_content&view=article&id=10&Itemid=147](https://www.aquaticmammalsjournal.org/index.php?option=com_content&view=article&id=10&Itemid=147)). During this 6-h period, a crowd gathered to get a closer look, with many of them entering the water to touch them and/or take pictures (see supplemental video). The small cetaceans remained passive during this period while continuing to breath periodically; they did not try to swim away (A. Rivero-Gonzalez, pers. comm., 25 May 2020).



**Figure 1.** Location of stranding (red circle) and release (white circle) of the two pygmy killer whales (*Feresa attenuata*) from the north coast of Matanzas, Cuba



**Figure 2.** Pygmy killer whales loaded on a truck for transport to Chapelin Marina (a) and while being transported by boat to the release site (b) (Photo credit: Boris Garcia-Dulzaides)

That afternoon, veterinary specialists from Delfinario Varadero, a nearby dolphinarium (including coauthor BGD who provided care and remained with the two cetaceans until they were eventually released), arrived to assess the situation. The two individuals were initially examined in the water for any external injuries. They lacked any visible external trauma or epizootes (e.g., *Xenobalanus* spp. or cyamid parasites) on their skin; the presence of epizootes in delphinids may indicate reduced motility over some time associated with a prolonged health issue (Aznar et al., 1994). Their body condition appeared normal. They were later identified as two male pygmy killer whales (total lengths of 2.12 and 2.22 m, respectively). They were treated with oxytetracycline (a broad-spectrum antibiotic) and a vitamin complex. Unfortunately, Delfinario Varadero is not equipped as a wildlife rescue facility, and there was no place to keep these cetaceans under quarantine without endangering their captive bottlenose dolphins (*Tursiops truncatus*); therefore, the animals had to be released the same day. The two cetaceans were loaded onto a truck (Figure 2a) and transported 43 km (a 45-min trip) to the Chapelin Marina in Varadero. They were kept cool using freshwater and ice during transport, and heart rates were monitored periodically. The two cetaceans were then loaded onto a boat (Figure 2b) and transported 19.3 km to the release site between Cayo Piedra and Cayo Mono off Varadero Peninsula, north Matanzas (23° 15' 19" N, 81° 06' 14" W), where the water depth was > 200 m deep (Figure 1). Respiration rates were observed (2 to 3 breaths/min) during this 40-min boat transport, and the position of the animals was changed every 15 min. During this period, they became more alert; and once reintroduced back into the deeper water, one dove immediately and the other did after a short period at the surface. It is unknown what the fate of the two small cetaceans was after release; however, no subsequent stranding events were reported in the area in the following days.

We confirmed the identification of these two small cetaceans as pygmy killer whales based on Baird's (2018) description of the rounded shape of the head (Figure 2a), the rounded tips of the flippers (Figure 2b), the double lined tooth rake scars on the ventrum and side of the body (Figure 2b), and the white coloration around the anogenital area but not in the rest of the ventral area (Figure 2b). Several cookie-cutter shark bite scars were present in both males, which is characteristic of pygmy killer whales in tropical waters (Figure 2a & b).

Pygmy killer whales may be sensitive to naval sonar (Wang & Yang, 2007) and are vulnerable to entanglement in fishing gear (Baird, 2018). Furthermore, the 1995 mass stranding in the British Virgin Islands was associated with oceanographic and meteorological disturbances after Hurricane Marilyn

that presumably disoriented the pygmy killer whales (Mignucci-Giannoni et al., 2000). However, several histopathological findings were also observed in the three individuals that died during that stranding event (Mignucci-Giannoni et al., 2000). Postural instability and akinesia at the surface in delphinids have been associated with acoustic stress (Gray & Van Waerebeek, 2011). It is unknown what caused the individuals in Cuba to strand; however, the characteristics of this stranding—(1) the lack of external traumas or fishing gear, (2) their normal body condition, (3) the abnormal passive behavior and postural instability for several hours as if in shock, and (4) the location they were found—all support the idea that the two pygmy killer whales were suffering from acoustic stress caused by either naval sonar or nearby seismic activity (Parsons et al., 2008; Parsons, 2017). While not the likely cause in this case, it is important to further evaluate the potential operational interactions of this and other species with fisheries due to the intensity and type of fishing activities that take place on the northwest coast of Cuba (e.g., long-lines; Valle et al., 2011).

This is only the second record of the pygmy killer whale for the Greater Antilles and the first time this species has been reported in Cuba. This new information is important as the distribution of the species is still known primarily from strandings, opportunistic sightings, scientific surveys, and fishery catches around the world (Baird, 2018).

This event represents an example of coordination and interagency collaboration to rapidly respond to events like this one. Fishermen and local individuals ensured the survival of the animals for several hours by maintaining them near the surface of the water. Then, the police, firefighters, rescue team, and other government, environmental, and tourism authorities ensured that the animals were properly assisted and transported to the location where they were eventually released. We recommend that the local government prioritize the creation of the appropriate infrastructure to rescue, rehabilitate, and release small cetaceans and manatees. Moreover, we encourage the implementation of local citizen programs, such as the stranding network, to facilitate rescues, improve communication, and ensure proper care is provided and that standardized data are collected. Such steps will be important to evaluate poorly known Caribbean cetacean stocks.

### Acknowledgments

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respond to this rare stranding and generously provided information regarding medical treatment and the release process. We thank the local authorities who facilitated the transportation process, and the Palmares Company and the Marina Marlins who participated in this rescue and provided the boat to transport/release the animals. We thank Raul Davalos Peña for the video footage, Roamsy Volta for map preparation, and James Powell along with two anonymous reviewers for helpful comments that greatly improved the short note. This short note is part of a joint effort and existing projects between the Center for Marine Research, University of Havana, and the Clearwater Marine Aquarium Research Institute (formerly Sea to Shore Alliance) for the study of Cuban marine mammal species (e.g., West Indian manatees and bottlenose dolphins).

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