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## Beaked whales strandings in El Salvador

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Little has been published in the literature about beaked whales in Central America. This short communication summarizes all the stranding records of beaked whales in El Salvador that could be located or were available, all in the Pacific Ocean (Table 1).

In April 2012, a 300 cm beaked whale (length estimated by locals) in advanced state of decomposition was found at Bocana El Zapote, Barra de Santiago, Ahuachapan department (Figure 1). Based on a protruding tooth which erupted from the middle of the lower jaw, a small head with a slightly bulging melon and a short beak (Reyes and Van Waerebeek, 2018) it was identified as an adult male Peruvian beaked whale (*Mesoplodon peruvianus*) (Figure 2). This is the first confirmed record of this species in El Salvador.

On 3 October 2013, a fresh 195 cm beaked whale was found at Punta Roca, El Cuco, San Miguel department (Figure 1). Unfortunately only the skull (Figure 3), without mandibles, was saved. Based solely on skull shape (Reyes and Waerebeek, 2018) and body length, we hypothesize it could be a young female *M. peruvianus*.

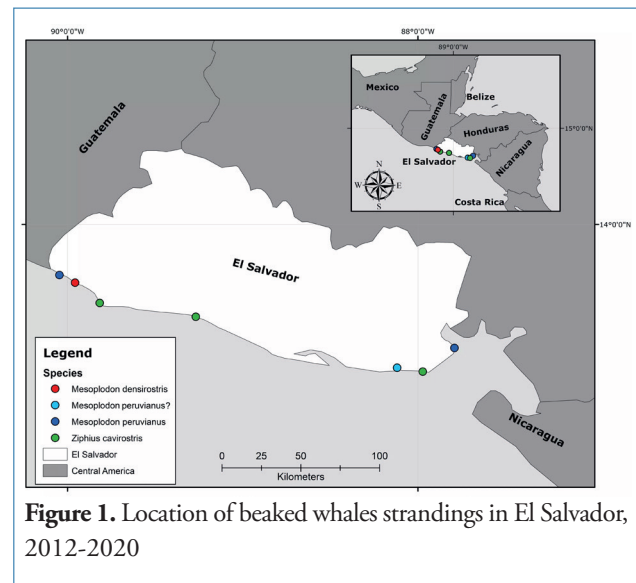


Figure 1. Location of beaked whales strandings in El Salvador, 2012-2020

Table 1. Beaked whales strandings in El Salvador, 2012-2020. F = female, M = male, U = unknown.

Date	Locality	Length (cm)	Sex	Species
01 Apr 2012	Bocana El Zapote, Barra de Santiago, Ahuachapan	300	M	<i>Mesoplodon peruvianus</i>
03 Oct 2013	Punta Roca, El Cuco, San Miguel	195	F	<i>Mesoplodon peruvianus?</i>
31 Oct 2013	Barra Salada, Sonsonate, Sonsonate	450	F	<i>Ziphius cavirostris</i>
01 Nov 2013	San Diego, La Libertad, La Libertad	unknown	U	<i>Ziphius cavirostris</i>
28 Jan 2014	Bocana El Saite, Barra de Santiago, Jututla, Ahuachapan	360	F	<i>Mesoplodon densirostris</i>
27 Mar 2018	Punta Chiquirín, La Unión, La Unión	300	M	<i>Mesoplodon peruvianus</i>
09 Apr 2020	Las Tunas, Conchagua, La Unión	495	F	<i>Ziphius cavirostris</i>



**Figure 2.** *Mesoplodon peruvianus* stranded in Ahuachapan in 2012. Photo: Roberto Santamaría



**Figure 4.** *Ziphius cavirostris* stranded alive in Sonsonate in 2013. Photo: Herberth Cienfuegos Cortéz



**Figure 3.** Skull of a possible *Mesoplodon peruvianus* calf, San Miguel 2013. Photo: Ricardo Ibarra Portillo



**Figure 5.** Probably the same *Ziphius cavirostris* in Figure 4 washed on the following day in La Libertad in 2013. Photo: Luis Pineda

On 31 October 2013, a 450 cm (length estimated by locals) beaked whale stranded alive at Barra Salada, Sonsonate, Sonsonate department (Figure 4). It was pushed back into the ocean by locals. On the following day a dead beaked whale was found at San Diego, La Libertad, La Libertad department (Figures 1, 5), approximately 49 km from the original stranding site. The carcass was not measured before being buried on the beach. Based on the characteristic features and profile of the animal's head, including a smoothly-sloping forehead, stubby, poorly-defined beak, and a mouth-line that was curved along most of its length with an upturn at the rear, both specimens were identified as Cuvier's beaked whales *Ziphius cavirostris* (Heyning, 1989), and presumed to have been the same whale. This is the first record of this species in El Salvador.

On 28 January 2014, a decomposed 360 cm beaked whale was found at Bocana El Saite, Barra de Santiago, Jujutla, Ahuachapan department (Figures 1, 6). Based on a high arching lower jaw without erupted teeth, it was identified as a female Blainville's beaked whale (*M. densirostris*) (Mead, 1989) and represents a first stranding record of the species in this country.

On 27 March 2018, a 300 cm beaked whale (length estimated by locals) was found dead at Punta Chiquirín, 9 km from La Unión, La Unión department (Figure 7). It was pushed back to the sea by locals, and left there. Its whereabouts are unknown. Based on a protruding tooth which erupted from the middle of the lower jaw, a small head with a slightly bulging melon, and a short beak (Figure 7), it was identified as a male Peruvian beaked whale (Reyes and Van Waerebeek, 2018).

Lastly, on 9 April 2020, a 495 cm female cetacean was found dead at Playa Las Tunas, Conchagua, La Unión department (Figures 1, 8) and was buried the following day. Based on a smoothly-sloping forehead, stubby, poorly-defined beak, and a mouth-line that was curved along most of its length with an upturn at the rear, this whale was identified as a Cuvier's beaked whale (Heyning, 1989).

*Mesoplodon peruvianus* strandings have been reviewed recently (Reyes and Van Waerebeek, 2018). Two more





**Figure 6.** A female *Mesoplodon densirostris* stranded in Ahuachapán in 2014. Photo: Elba Martínez de Navas



**Figure 7.** A male *Mesoplodon peruvianus* washed in La Unión in 2018. Photo: Milagro Villatoro

whales of this species were found in Colima, Mexico in 2017 (C. Ortega Ortiz, Universidad de Colima, pers. comm., 10Oct2019). Finally, a calf presumed to be of a Peruvian beaked whale was found stranded alive in Oaxaca, Mexico in 2019 (P. Villegas, Universidad de Oaxaca, pers. comm., 20Jul2019). The head shape and body coloration of the latter is very similar to a calf reported in this paper.

*Ziphius cavirostris* is the most widely distributed of all the beaked whales, and strandings have been previously reported (Heyning, 1989) and summarized (Bachara and Norman, 2013). In Pacific Central America a stranding hot spot is Mexico (Bachara and Norman, 2013; J. Urbán, Universidad Autónoma de Baja California Sur, pers. comm., 03Feb2016). There are also records from Costa Rica and Panama (Bachara and Norman, 2013).

*Mesoplodon densirostris* is thought to have the widest range of all species in the genus (Mead, 1989). Along the Pacific coast of Central America strandings are very



**Figure 8.** A female *Ziphius cavirostris* washed in La Unión in 2020. Photo: Santos Rogelio Pineda Villalobos

rare. In 2000, a 442 cm female was found 3.2 km off Southeast End, Cocos Island Puntarenas, Costa Rica<sup>1</sup>. There is a stranding record from Baja California Sur, Mexico in 2016 (Urbán *et al.*, in prep.). In August 2017, a Blainville's beaked whale was found stranded alive in Santa Rosa province, Guatemala (W. Bachara, unpub. data). Lastly, in 2019 a fresh juvenile of this species was found in Colima, Mexico (C. Ortega, Universidad de Colima, pers. comm., 10Apr2019).

In the Eastern Tropical Pacific, Blainville's beaked whales and unidentified mesoplodonts (possibly Peruvian beaked whales) have been sighted in offshore, as well as nearshore areas of Central America (Pitman *et al.*, 1987; Pitman and Lynn, 2001). Unidentified ziphiids and Cuvier's beaked whales were seen in waters of Pacific Central America (Kinzey *et al.*, 2001). Off Costa Rica, May-Collado *et al.* (2005) reported one sighting of three Blainville's beaked whales in deep offshore waters based on compiled sightings from 1979 to 2001, with Cuvier's the most frequent beaked whale identified to species. Jackson *et al.* (2008) reported some ziphiid species and two sightings of *Mesoplodon* sp. in waters near the coast

<sup>1</sup>Smithsonian National Museum of Natural History, Division of Marine Mammals database, <http://collections.mnh.si.edu/search/mammals/>

of Costa Rica during surveys in July–December 2006. Cabrera *et al.* (2014) reported sightings of unidentified mesoplodonts and Cuvier's beaked whales in Guatemalan waters. Finally, two Peruvian beaked whales were observed in waters 10 km from Oaxaca, Mexico (García-Grajales *et al.*, 2017).

We have reviewed all stranding records of beaked whales in El Salvador, and presented the first stranding records of Peruvian, Blainville's and Cuvier's beaked whales for the country.

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