Notes on the presence of dwarf spinner dolphins *Stenella longirostris roseiventris* (Wagner, 1846) in Puerto Bay, Puerto Princesa City, Palawan

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ABSTRACT

This research note aimed to document the presence of dwarf spinner dolphins *Stenella longirostris roseiventris* (Wagner, 1846) in Puerto Princesa Bay to update the cetacean species inventory of the bay and the little-known distribution of the subspecies in the country. During a dolphin watching expedition, the subspecies was spotted for the first time in Puerto Princesa Bay, Puerto Princesa City, Palawan just east of Turtle Bay on 29 May 2021. The presence of Gray's spinner dolphins *S. longirostris longirostris* (Gray, 1828) in the same vicinity highlighted the difference in size and shape of individuals of the two groups. The subspecies was confirmed using biometrics on a picture taken of a mother and its calf. The dorsal fin height and the pectoral fin ratios to the snout-to-dorsal fin length fit that of the dwarf spinner.

Keywords: biometrics, cetacean species inventory, subspecies distribution

Puerto Princesa Bay in Puerto Princesa City, Palawan is a known habitat to a variety of large marine wildlife which include elasmobranchs, marine turtles, and marine mammals. Apart from the dugong *Dugong dugon* (Müller, 1776) Palmer, 1895, a total 10 species of cetaceans have been previously recorded in the bay, namely: (1) Bryde's whale *Balaenoptera edeni* Anderson, 1879 (Dolar et al. 2012a); (2) pygmy killer whale *Feresa attenuata* Gray, 1874 (Aquino 2009; Aquino et al. 2012a); (3) short-finned pilot whale *Globicephala macrorhynchus* Gray, 1846 (Aquino 2009; Aquino et al. 2012b); (4) Risso's dolphin *Grampus griseus* G. Cuvier, 1812 (Torres 2008; Aquino 2009; Aquino et al. 2012c); (5) Fraser's dolphin *Lagenodelphis hosei* Fraser, 1956 (Torres 2008; Aquino 2009; Dolar et al. 2012b); (6) melon-headed whale *Peponocephala electra* Gray, 1846 (Sabater et al. 2012); (7) Pantropical

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spotted dolphin *Stenella attenuata* Gray, 1846 (Torres 2008; Aquino 2009; Dolar et al. 2012c); (8) Gray's spinner dolphin *S. longirostris longirostris* (Gray, 1828) (Torres 2008; Aquino 2009; Dolar et al. 2012d); (9) Sperm whale *Physeter macrocephalus* Linnaeus, 1758 (Aquino 2009; Dolar et al. 2012e); and (10) Cuvier's beaked whale *Ziphius cavirostris* Cuvier, 1823 (Torres 2008; Aquino 2009; Aquino et al. 2012d).

With the high frequency of encounters with cetaceans, a unique dolphin watching enterprise as developed in the Bay before the onset of the COVID19 pandemic in 2019. Unlike most dolphin watching operations elsewhere, the local enterprise utilized fishers operating in the area as spotters. This, more often than not, assured cetacean encounters for the tourists they catered to. When the pandemic negated tourist travel to the city, the fishers continued to fish but the dolphin watching tours were grounded to a halt along with the updates they often collected on the cetacean populations in the Bay. After almost two years with no new information on the cetaceans in the Bay, the authors decided to go out and check on the animals. Thus, these notes were written to document and primarily provide update on the cetaceans encountered in the Bay.

In the morning of 29 May 2021, the team went out looking for cetaceans in Puerto Princesa Bay. Unlike the previous dolphin watching operations in the Bay, the observers had no prior access to the fishermen who could have directed them to the current location of the dolphins. After about three hours of random searching, however, a small group of spinner dolphins, about 16-24 individuals, were finally spotted off the coast of Puerto Princesa City, Palawan on the southern part of Puerto Bay approximately 9°39'47.6"N 118°46'00.7"E (Figure 1). The team initially saw three fishing vessels going back and forth and decided to check them out for the possibility of cetaceans feeding near them. Upon their approach, two dolphins jumped out of the water north of the vessels. Even before closer interaction, the observers determined the species to be spinner dolphins based on the acrobatic activity some individuals were engaged in.

During the interaction, several clusters of individuals were observed to be scattered in the general vicinity, most of which were exhibiting feeding/milling behavior. Two calves were noted swimming close to their respective mothers. One individual exhibited a large, deep wound on its back near the tail which may have been a cookie cutter shark bite but it did not appear to hinder its movements despite its size and depth (Figure 2). At some point of the interaction, several individuals approached the observers' speedboat to bow ride. These individuals had streamlined bodies and a very white underside (Figure 3).

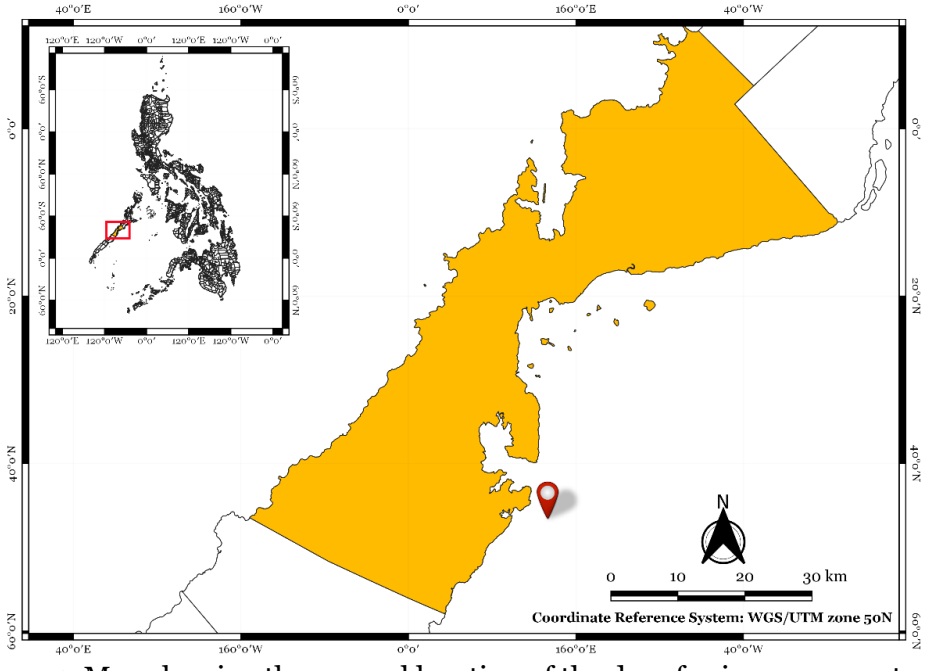

Figure 1. Map showing the general location of the dwarf spinner encounter in Puerto Bay, Puerto Princesa City, Palawan.

Figure 2. One dolphin had a rather deep and large wound on its back but it did not appear to affect its swimming.

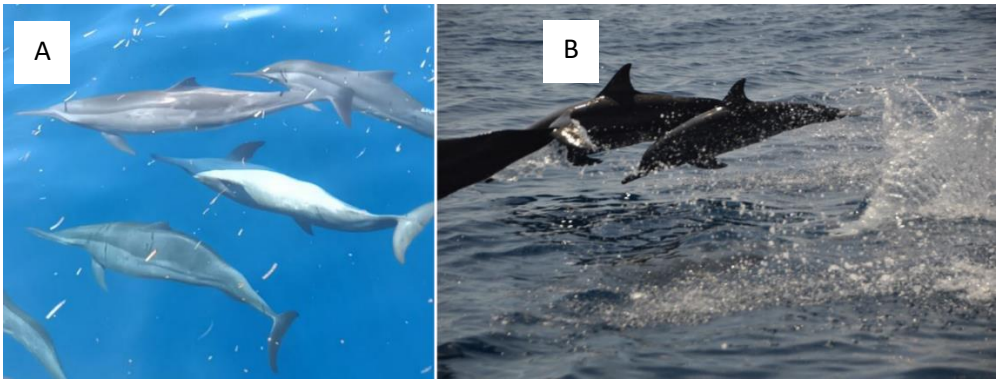

Figure 3. Most of the bow riding spinners had pale/white bellies (A) and streamlined bodies (B).

The team took note of a group of individuals constantly porpoising (i.e. alternately jumping fully out of the water and plunging back it while swimming) around the boat. These individuals were somewhat shorter than the rest but more rotund (thicker around the girth) with relatively smaller heads (Figure 4). These individuals were the first to break away from their interaction with the observers. When they had distanced themselves from the boat, they again started porpoising and the observers were presented with more opportunities to take pictures of individuals fully out of the water.

Figure 4. Dwarf spinners (both photos) are thicker around the girth and had smaller heads compared to the Gray's spinner dolphins (not in the photos above).

The difference in shape and size from the rest prompted the observers to suspect that these may be dwarf spinner dolphins loosely mixed in with a group of Gray's spinner dolphins. A review of the pictures taken by the group yielded pictures of a mother and calf completely out of the water and perpendicular to the observers, making biometrics possible. The dorsal fin height and pectoral fin length ratios to the snout-to-dorsal-fin length of the

mother fit that of dwarf spinner dolphins. The calf's measurements were recognized since it was far from fully grown. Nevertheless, the calf's close presence confirmed that the individual measured was its mother and, therefore, an adult female despite its small size (Figure 5).

Figure 5. Mother and calf dwarf spinners *Stenella longirostris roseiventris*.

Dwarf spinner dolphins were initially identified from 10 dead specimens yielded by a local shrimp fishery in the Gulf of Thailand (Perrin et al. 1989). These were similar in size as the spinner dolphins that had been accidentally caught in the Arafura and Timor Seas off northern Australia. The subspecies has been re-described to have a shorter body (about 158 cm long), smaller skull, and lesser teeth and vertebrae counts. It also had proportionately larger pectoral and dorsal fins than the Gray's spinner dolphin. Since all specimens at the time were dead, no description of its external size, shape, and coloration could be given. The study also concluded that the subspecies was distributed in the shallow waters of Southeast Asia including the Gulf of Thailand, Timor and Arafura Seas, and similar waters of Malaysia, Indonesia, and northern Australia but not, at the time, in the Philippines (Perrin et al. 1999).

However, during a boat survey conducted in the waters surrounding Balabac Islands, Palawan in 2006 by a team led by Dr. Louella Dolar, a pod of dwarf spinner dolphins was encountered which yielded photographs of adequate quality to clearly illustrate its external appearance for the first time (Perrin et al. 2007). The dorsal fin height and the pectoral fin length ratio to the dorsal-fin/beak-tip length measured 21% and 28%, respectively, which fit the previously described proportions of the dwarf spinner dolphin (Perrin et al. 1999; Perrin et al. 2007).

Since then, the subspecies' presence has been documented in Tañon Strait in the Visayas (Aquino and Aca 2019), the Bohol Sea (Sabater pers. comm.), and now in Puerto Princesa Bay, Palawan (Figure 6). It was noted that the Balabac and Tañon Strait encounters involved pure dwarf spinner pods while that in the Bohol Sea (Sabater pers. comm.) and Puerto Princesa Bay were loosely mixed with Gray's spinners. The sightings in the Philippines seemed to indicate that the distribution of the dwarf spinner dolphin may be wider in Southeast Asia than previously known. There is also still much to be understood about the subspecies, especially its behavior. To do so, there should be no doubt that the spinners encountered are dwarf and not Gray's spinners. Understandably, it is difficult to confirm the species identification since an adequate photo is needed to do biometrics on. Unfortunately, the rose-colored belly cannot be used for identification since it is a result of a physiologic reaction and other spinners may exhibit such coloration at some point as well (Perrin et al. 1999). The team was lucky that it was mixed with some Gray's spinner dolphins and thus had a basis for comparison. However, this may not always be the case at the Balabac and Tañon Strait. Thus, good photographs are necessary to confirm identification and learn more about the subspecies.

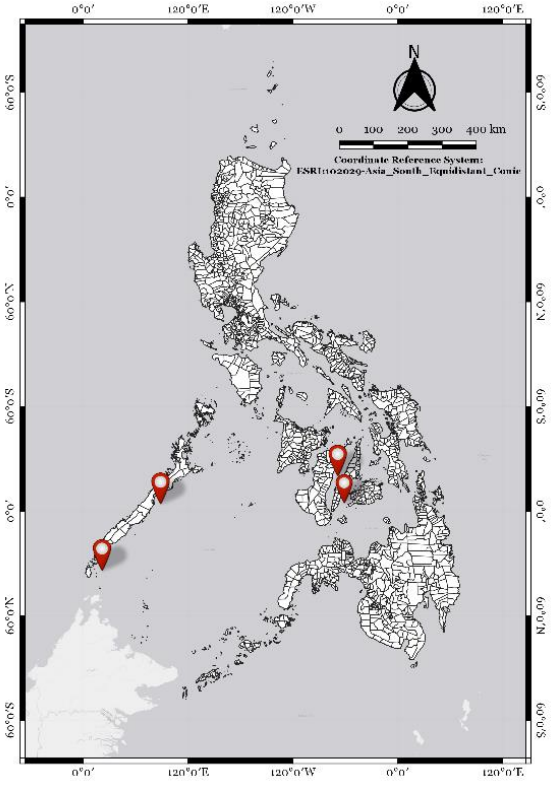

Figure 6. Map showing the location of confirmed encounters of dwarf spinner dolphins in the Philippines.

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ARTICLE INFO

Received: 21 June 2021
Revised: 29 October 2021
Accepted: 04 December 2021
Available online: 16 December 2021

Role of Authors: MTRA –spotter, photographer and writer; RMC, GMC, MADC and CHC – spotter and photographer.

The Palawan Scientist, 13(2): 118-126