

Short Note

A Rare Observation of Bottlenose Dolphins (*Tursiops truncatus*) with a Whale Shark (*Rhincodon typus*) off the Florida Panhandle, Gulf of Mexico

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Reported incidences of shark-cetacean interactions run the gamut from predator-prey and competitive (i.e., competition for the same prey in multispecies feeding aggregations) to mutual tolerance (Wood et al., 1970; Heithaus, 2001). There are only two published accounts of interactions of cetaceans with the whale shark (*Rhincodon typus*); these were both predation by the killer whale (*Orcinus orca*) on the whale shark, and both were in the Gulf of California (Fertl et al., 1996; O'Sullivan & Mitchell, 2000). We report on a brief encounter between bottlenose dolphins (*Tursiops truncatus*) and a whale shark off the Florida Panhandle in the Gulf of Mexico. We also review non-predatory observations of cetaceans with whale sharks worldwide.

At 1239 h on 26 June 2013, while monitoring marine mammals from a Cessna T337H Turbo Skymaster aircraft in conjunction with a U.S. Navy testing event off Panama City Beach, Florida, biological observers sighted a group of approximately 40 to 50 traveling bottlenose dolphins dispersed over approximately a 3.6-km diameter. The group consisted of several subgroups with at least seven mother-calf pairs. The sighting occurred at 30.03 N and 85.81 W, approximately 12 km from shore in waters with a bottom depth of 30 m in a Beaufort Sea State 2. Photographs of the encounter were taken using a Canon EOS 7D digital camera with a 100- to 400-mm telephoto zoom lens. During the sighting, the aircraft circled at a range of 216 to 236 m.

The bottlenose dolphins were observed before, during, and after the 1.5-min duration in which the group was documented with the whale shark as follows. When first seen at 1239 h, the observers recorded probable feeding by the bottlenose dolphins on an unidentified species of schooling fish. Approximately 1 min later, a large whale shark was spotted swimming with its pectoral

fins outstretched horizontally from its sides in the water (later confirmed as a whale shark based on photographs depicting a flat head that was square in front and a bluish-green colored body covered with many white spots [Hoese & Moore, 1977]). Bottlenose dolphins were swimming as close as within half a body length in the general area of the whale shark. At 1241 h, three bottlenose dolphins appeared to remain stationary approximately two body lengths in front of the whale shark. One bottlenose dolphin faced the whale shark head-on, and the other two bottlenose dolphins were positioned at about a 30° angle from the center of this dolphin, facing the whale shark. Bottlenose dolphins also followed the whale shark at this time, positioned in the slipstream between a half and two body lengths of the whale shark. About 30 s later, the whale shark was not observed further and disappeared, and the observers continued focusing on the entire bottlenose dolphin group for another 16 min without resighting the whale shark. Observers noted that the bottlenose dolphin subgroups were probably feeding throughout the observation session. It is unknown whether the whale shark was sighted again or not due to harassment from the bottlenose dolphins, from possible disturbance by the aircraft, or from some other undetermined reasons.

Little is known or published on species that associate with whale sharks, other than fish (including schooling fish) and other elasmobranchs (Arnbom & Papastavrou, 1988; Silas, 1989; Colman, 1997; Gaertner & Medina-Gaertner, 1999; Graham, 2003; Ebert et al., 2004; Hoffmayer et al., 2005; Nelson & Eckert, 2007; Andrades et al., 2012). Our review of video and photographs from other encounters (Table 1), as well as information from our observations reported herein, are reminiscent of some published interactions of small cetaceans with baleen whales. These interactions include swimming around

Table 1. Records of cetacean interactions with whale sharks

Date	Location	Cetacean species	Source	Comments
20 August 1979	Gulf of Mexico (off South Texas)	<i>Stenella frontalis</i> , <i>Globicephala macrorhynchus</i>	Fritts & Reynolds, 1981; Hoffman et al., 1981	Observed from Cessna 337 Skymaster at altitude of 91 m. Whale shark in aggregation with seabirds, Atlantic spotted dolphins, short-finned pilot whales, fish, and smaller sharks. The whale shark was hanging vertically, tail down, near the surface disturbance.
Unknown	Gulf of Mexico	<i>Stenella</i> sp.	https://www.youtube.com/watch?v=oyZR8w dTYc0&feature=player_embedded	Video taken from a vessel. Dolphins swam near side and around head of whale shark, occasionally darting quickly at the whale shark. Whale shark moves head in response.
2 August 2010	Gulf of Mexico (130 km SW of Port Fourchon, Louisiana)	<i>Stenella</i> sp.	www.seashepherd.org/commentary-and-editorials/2010/09/08/sea-shepherds-find-healthy-whale-sharks-in-the-gulf-70	Photos taken from air: five to six dolphins with one adult and one subadult whale shark. Dolphins and whale shark appeared to take turns chasing each other.
2003	Belize, Caribbean Sea	<i>Steno bredanensis</i> , <i>Stenella attenuata</i> , <i>Tursiops truncatus</i>	Graham, 2003	Only bottlenose dolphins were observed interacting with whale sharks frequently. Bottlenose dolphins swam in front of whale shark, nipped at the whale shark's pectoral fins, positioned themselves about a foot from stationary whale shark's snout, and tapped the whale shark's pectoral fins with their own fins.
N/A	Utila, Honduras	<i>Tursiops truncatus</i>	S. Kuczaj, pers. comm., 21 August 2013	Underwater observations of multispecies aggregation feeding on bait ball of small fish, including whale shark, bottlenose dolphins, and marlin. No interaction between the whale shark and bottlenose dolphins was noted.
February 2004	Red Sea (off Sudan)	<i>Tursiops truncatus</i>	www.redsea-diving.info/news/details_whaleshark_dolphins.htm ; www.youtube.com/watch?v=-EJFGsn3EF0&sns=em	Underwater observations and photos of a whale shark made by divers swimming with the animal until a group of bottlenose dolphins arrived. Bottlenose dolphins chased and tried to deter the whale shark. The whale shark turned and moved tail to deter the divers and bottlenose dolphins.
14 April 2006	The Settlement, Christmas Island, Indian Ocean	<i>Stenella longirostris</i>	www.flickr.com/photos/82948976@N00/128323501	Underwater photos of two spinner dolphins swimming in front of whale shark.
16 June 2013	Florida Panhandle, Gulf of Mexico	<i>Tursiops truncatus</i>	This paper	Photos and aerial observations. Bottlenose dolphins total 40 to 50. Whale shark alone. Bottlenose dolphins traveling in same direction as whale shark. Only five to six bottlenose dolphins appeared to be interacting with whale shark. Bottlenose dolphins swam in front of whale shark, underneath it, and behind the whale shark's pectoral fins.

the head of the larger animal (often resulting in dolphins surfing on the pressure wave created by the baleen whale's movements) and swimming in its slipstream (Leatherwood, 1974; Tsutsui et al., 2000; Würsig, 2008a, 2008b; Deakos et al., 2010). Such behavior was described as "playful" by Würsig (2008b).

The overlap in distribution of both bottlenose dolphins and whale sharks, and the inquisitive nature of bottlenose dolphins increases the likelihood of these two species interacting with one another. Bottlenose dolphins are seen in both the coastal and oceanic waters of the Gulf of Mexico (Baumgartner et al., 2001). Whale sharks in the Gulf of Mexico occur primarily along the continental shelf break and off the mouth of the Mississippi River (Hoffmayer et al., 2005; Burks et al., 2006), with sporadic sightings in waters over the continental shelf (Hueter et al., 2013).

This short note adds a new species to the known associates of the bottlenose dolphin, and it contributes to the limited literature on cetacean interactions with sharks in general. We hope that this review will encourage the reporting of similar observations and promote their publication in the scientific literature to better understand the behavioral and ecological interactions of cetaceans and sharks, particularly whale sharks.

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