

Stenella attenuata (Pantropical Spotted Dolphin)

Family: Delphinidae (Oceanic Dolphins)

Order: Cetacea (Whales and Dolphins)

Class: Mammalia (Mammals)



Fig. 1. Pantropical spotted dolphin, *Stenella attenuata*.

[<http://worldwidewaves.wordpress.com/tag/pantropical-spotted-dolphins/>, downloaded 11 November 2014]

TRAITS. *Stenella attenuata* more commonly known as the pantropical spotted dolphin, spotted porpoise or the white-spotted dolphin, is quite often confused with other species of dolphin such as the spinner dolphin, Atlantic spotted dolphin and the bottlenose dolphin. However a distinguishing feature of the pantropical spotted dolphin is that it has a smaller, slender body (Fig. 1). They possess a dark grey stretch of colour on their backs which reach half-way on either side of their bodies while their belly is lighter grey to white in colour. They also have a blowhole on their heads (McGinley and Saundry, 2014). The male dolphin can grow up to 2.6m and a weight of 110kg whereas the female can grow up to 2.4m and the juveniles up to 1m. Their beak is long and slim with a white tip. *S. attenuata* are spotless at birth but acquire their spots as they get older. *S. attenuata* can live up to 46 years (Culik, 2010).

ECOLOGY. The pantropical spotted dolphin has been estimated to have a world population of approximately 2.5 million. They inhabit both open oceans as well as oceanic waters along the coasts of islands and can be seen occupying tropical and subtropical waters globally that have surface temperatures above 25°C (McGinley and Saundry, 2014). During the day they tend to spend a lot of their time in shallow (100-300m) waters and then at night move deeper where they can find food. They usually feed on organisms such as crustaceans, squid and mesopelagic (midwater) fish (Chou et al., 2003).

SOCIAL ORGANIZATION. Pantropical spotted dolphins are usually seen associating in groups with each other and move about like this. They are said to be travelling in schools. Studies show that their schools are subdivided into groups consisting of pairs of mother and calf, groups with adult males as well as groups with the juvenile dolphins. The population of *S. attenuata* are often observed in close proximity to a number of other oceanic organisms which include some species of tuna, some birds, other dolphins such as the spinner dolphin and different species of fishes. This organization amongst a wide variety of species can be the result of a number of things including the availability of a range of food for the pantropical dolphins. Also the positioning amongst these other organisms may act as a barrier to predator species (Culik, 2010). *S. attenuata* have been observed to have varied interactions with another cetacean known as the spinner dolphin (*Stenella longirostris*), in their travelling in the pelagic regions of the waters of the eastern tropical Pacific. These interactions include aggression, foraging relationships, recreation and parental care and interspecific copulation (Fig. 2) (Herzing et al., 2003).

FORAGING BEHAVIOUR. *S. attenuata* acquire food with their long thin beaks. Their feeding habits display that they forage at night and return to their shallow waters during the day. It has been observed in experiments using time vs depth, that pantropical spotted dolphins perform the majority of its dives during the night time. This therefore supports the theory that *S. attenuata* are night feeders. In another study carried out using the stomach fullness index (SFI) showed that at dawn, the SFI displayed was very high which would therefore mean that the dolphin would have consumed the contents of his meal in the periods before this when it was dark, hence at night. Studies in Taiwan have shown that the pantropical spotted dolphin feed opportunistically depending on the abundances of fish as they differ from season to season. The reports showed that in fall and winter the fish that were in abundance was different from that for the other seasons. When the stomach of the dolphin was examined for each period it was seen that the species of fish that were highest in number corresponded closely to the species that had the highest population in that region for that particular period. It was said then that the migratory patterns of the dolphins can be associated with the abundance of food as during the summer, the pantropical dolphins move to warmer areas in Taiwan (Chou et al, 2003).

SEXUAL BEHAVIOUR. *S. attenuata* are a species that does not show seasonal mating as they can mate throughout the year. In the female pantropical spotted dolphin, sexual maturity occurs between ages 9-11 years and that for the male dolphin, 12-15 years (Culik, 2010). In studies carried out in the oceans surrounding the islands of Hawaii, the sexual behaviour between spinner dolphin and pantropical spotted dolphin were observed. It was seen that the male spotted dolphin oriented itself upside down under an unknown gender of spinner dolphin for a total of 5 secs. Complete copulation was believed to have occurred. There were multiple occurrences of

this act in a total of one minute. It must be noted that the male spotted dolphin was always underneath the spinner dolphin (Fig. 2).

JUVENILE BEHAVIOUR. After being born, pantropical spotted dolphins unusually feed from their mothers up to 2 years even though they also consume small food items. As they grow in size, their diets start to include larger fish and squid. Calves tend to travel with the parent dolphin as they are still feeding from them and hence are protected from predators by the parental care of the adult dolphin. However, juvenile spotted dolphins continue to develop holistically and venture off on their own. Juvenile dolphins are then susceptible to predators (Culik, 2010).

AGGRESSION. In the waters of Hawaii, aggressive interactions involving *S. attenuata* and *S. longirostris* were observed. Different situations of aggression were displayed. On one account, there was a large group of spinner dolphins seen surrounded by a group of spotted dolphins. From that group, 3 spotted dolphins swam in close proximity to a group of about 20 spinner dolphins and were observed to be swimming at quick rates towards the sides of the spinner dolphins as if they were going to attack. This resulted in the excitement of the spinner dolphins to move erratically and respond to the behaviour of the spotted dolphin with aggression. It was observed that the spinner dolphin attempted to scare off or warn the spotted by thrusting its fin at the spotted dolphin. However the spotted dolphin ignored the sign of warning and proceeded to advance toward the spinner dolphin yet again. This time the spinner dolphin snapped loudly with its mouth and head at the spotted dolphin making contact with its body. The spotted dolphin responded with vocal signals and aggressive bodily contact and then swam away (Herzing et al., 2003).

Also observed was a single male spotted dolphin following a group of calm, slow paced spinner dolphins closely. However the spotted dolphin was swimming in crazy swift motions and triggered a sign of retaliation, with a snap of the mouth from a male spinner dolphin. In the studies, Herzing et al. (2003) observed a behaviour that they had identified and associated amongst the members of the species *S. attenuata* during aggressive interactions between males. In the studies done in Hawaii, a dolphin was observed carrying out this specific behaviour which involves the release of bubbles which preceded a period of back and forth gestures of aggression. The pantropical spotted dolphin displaying the less aggressive behaviour in one circumstance as it was seen trying to escape the spinner dolphin later oriented itself under the spinner dolphin for copulation. There were intervals of copulating activity and chasing occurring between the pantropical spotted dolphin and the spinner dolphin (Herzing et al., 2003).

COMMUNICATION. Like many other species of cetaceans, *S. attenuata* communicate via vocal waves that sound like whistles. As seen in studies of interspecific aggressive interactions, spotted dolphins produce a whistling sound to warn off predators or as a sign of aggression in a fight. The whistles of species of dolphins differ as well as there are variations among the members of one species depending on their sex and age (Herzing et al., 2003). *S. attenuata* like other species of dolphins uses echolocation as a mechanism to orient in the ocean. They produce a high pitched frequency that essentially echoes off of objects and aids the dolphin in locating and identifying with its surroundings. The pantropical spotted dolphin also uses the whistle as a signal call to other members of the group that may be free roaming.

ACTIVITY. The slender bodies of the pantropical spotted dolphin facilitates its flexibility. This species of cetacean is one that is very agile and dive and flip frequently. They usually carry out these dives at night time to catch their prey from the water layer not too far from the surface. The younger dolphins are better at diving and can make significantly higher jumps. Supposedly as a form of recreation, while free roaming, the pantropical spotted dolphins can be seen trailing close to boats and riding the waves it produces (McGinley and Saundry, 2014).

REFERENCES

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Posted online: 2014



Fig. 2. Sexual behaviour between pantropical spotted dolphin (*Stenella attenuata*) and spinner dolphins (*Stenella longirostris*).

[<http://www.wilddolphinproject.org/wp-content/uploads/2011/11/Psarakos-Herzing-Martin-final.pdf>, downloaded 12 November 2014]

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