Lepidochelys olivacea (Olive Ridley Turtle)

Family: Cheloniidae (Sea Turtles)
Order: Testudines (Turtles and Tortoises)
Class: Reptilia (Reptiles)

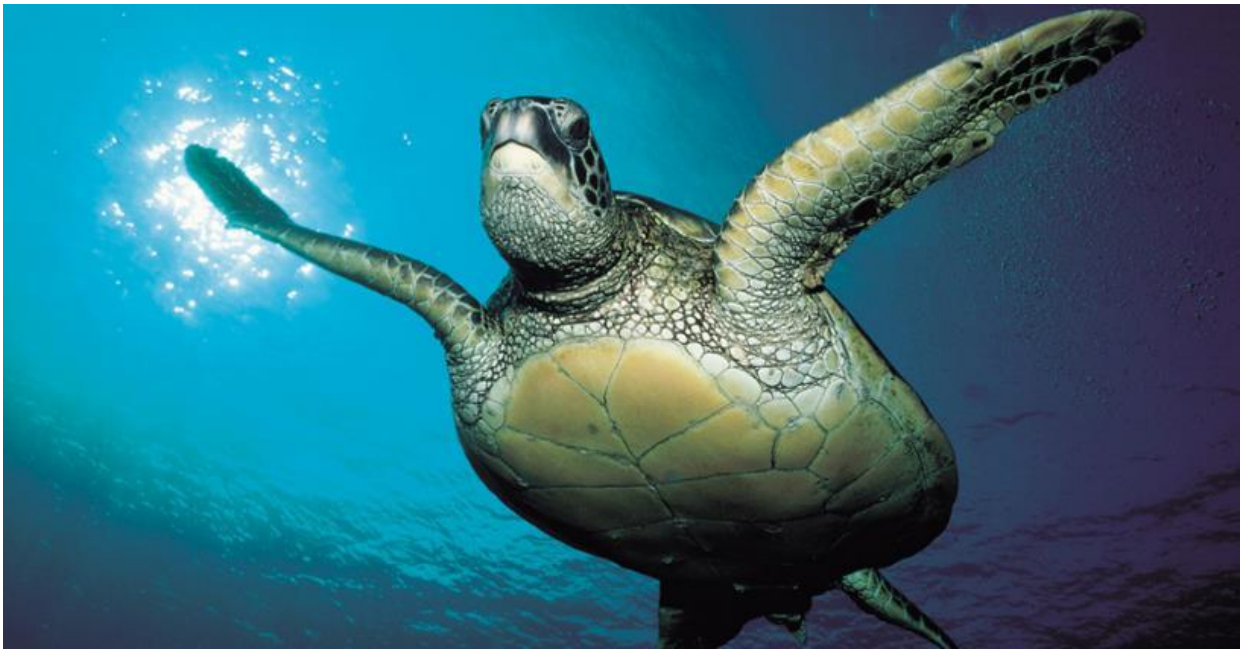

Fig. 1. Olive ridley turtle, *Lepidochelys olivacea.*
[http://www.nathab.com/central-america/mexico-sea-turtle-tour/, downloaded 9 March 2016]

TRAITS. *Lepidochelys olivacea* or the olive ridley turtle is named due to the greenish coloration of its skin and carapace, and is one of the smallest sea turtles (Fig. 1). Mature turtles typically weigh around 30-50 kg and grow to be around 60-75cm in length (Eckert, 1999). The carapace or protective shell of *Lepidochelys olivacea* has a short but wide structure that has high vertebral projections in juvenile turtles, and is smooth with an elevated tectiform (roof-like) shape in adult turtles. The carapace is also known to have an inconstant amount of lateral scutes, ranging between six to ten pairs. In addition to this, eight pores are found on the scutes of the ventral surface of the shell (Marcovaldi, 1999). The head of *Lepidochelys olivacea* is relatively larger than most turtles, with an average width of 13cm, and has two pairs of prefrontal scales. Male olive ridleys can be distinguished from females by their long tails, relatively soft and concave plastron, as well as sturdy talons found on their anterior limbs (Wibbels et al., 1991).

DISTRIBUTION. Olive ridleys are found only in warm waters such as the southern Atlantic Ocean, Pacific Ocean and Indian Ocean (Fig. 2). There are a few records of *Lepidochelys olivacea* being found in areas of the western Atlantic Ocean such as off the coast of Trinidad and Tobago, Brazil, Venezuela and Suriname (Schulz, 1975).

HABITAT AND ACTIVITY. *Lepidochelys olivacea* is mainly a pelagic (open-water) sea turtle, but can dive to depths of 150m to feed on benthic (bottom-living) invertebrates. They are found in open tropical waters and are primarily diurnal in nature with exceptions for nesting. Olive ridleys use the wind and tide in order to reach the beach for nesting with consistent migratory patterns being observed. Female turtles can lay about 100 eggs and can nest up to three times annually. Peak nesting for female turtles are observed between August and December (National Geographic, 2016).

FOOD AND FEEDING. Olive ridley turtles have very powerful jaws which allow them to have a diverse omnivorous diet which includes crabs, tunicates, rock lobsters, shrimp, jellyfish, salps, fish and also algae. A study off the coast of Oaxaca, Mexico showed that salps and fish were amongst the main food sources found in 139 mature olive ridley turtles. Molluscs, crustaceans and algae were also found in the turtle's diet. Although olive ridley turtles are very abundant, the diet habits of these turtles in the Indian and Atlantic Oceans are poorly known (Lutz and Musick, 1996).

POPULATION ECOLOGY. Olive ridley sea turtles are mainly a solitary species that spend a majority of their life alone, with exceptions for mating and nesting (National Geographic, 2016). Despite being a solitary species, olive ridleys display a unique schooling behaviour during nesting time called an arribada (Fig. 3). This mass nesting provides various adaptive advantages such as saturation nesting, which would minimize predation due to the overabundance of food (Pritchard, 1969). Olive ridley turtles are among the commonest of sea turtles, as well as the most exploited. They are also known as nomads of the sea.

REPRODUCTION. These turtles are often observed mating early in the morning or in the afternoon. Mating usually occurs close to nesting areas, however, olive ridleys have been observed copulating over 1000 km away from the nearest nesting site (Marquez, 1976). During copulation, the male uses its curved claws and tail to hold tightly onto the carapace of the female turtle, staying in this position for one to three hours. It is probable that some females can even store free sperm or sperm aggregates in their oviducts post-nesting (Owens, 1980). The majority of female olive ridley sea turtles can deposit two sets of eggs seasonally, in nests dug into sandy beaches (Fig. 4). Peak nesting is observed between the months of August to December (Spotila, 2004). Nesting occurs in aggregations called arribadas, which is where thousands of female turtles nest together at the same beach. There are however, some females that perform solitary nesting. The eggs of *Lepidochelys olivacea* are white, spherical and soft shelled (Marquez, 1976). The average incubation period of turtle eggs is approximately 51 days.

BEHAVIOUR. Very little is known about juvenile olive ridleys. However, hatchlings weigh around 17 grams and usually emerge from the sand at night (Fig. 5). Sex determination is influenced by environmental factors such as temperature. In Costa Rica temperatures of 32^{o}C and higher result in female hatchlings (Spotila, 2004). Predators of eggs include raccoons, snakes, and ghost crabs. While predators of hatchlings are often black vultures, sharks, and even crocodiles. Adult olive ridleys can fend off predators by flapping their flippers together, and are mostly at risk during nesting. Adults are solitary and are known for basking in the sun at the sea surface. Most scientist believe this is done in an effort to speed up metabolism and digestion.

APPLIED ECOLOGY. *Lepidochelys olivacea* is classified as a threatened species by the International Union for Conservation of Nature (IUCN). Unless the occurrences that pose a threat to the survival and reproduction of these turtles are improved, it is expected that *Lepidochelys olivacea* may become an endangered species (IUCN, 2015). Olive ridleys are easy targets during arribadas for poachers and hunters, who target these turtles for their shell and meat. These turtles are considered as a pest by some fishermen who accidently catch them in their nets. The only known disease known to be found in *Lepidochelys olivacea* is fibropapilloma, a common disease in sea turtles believed to be caused by a strain of the herpes virus.

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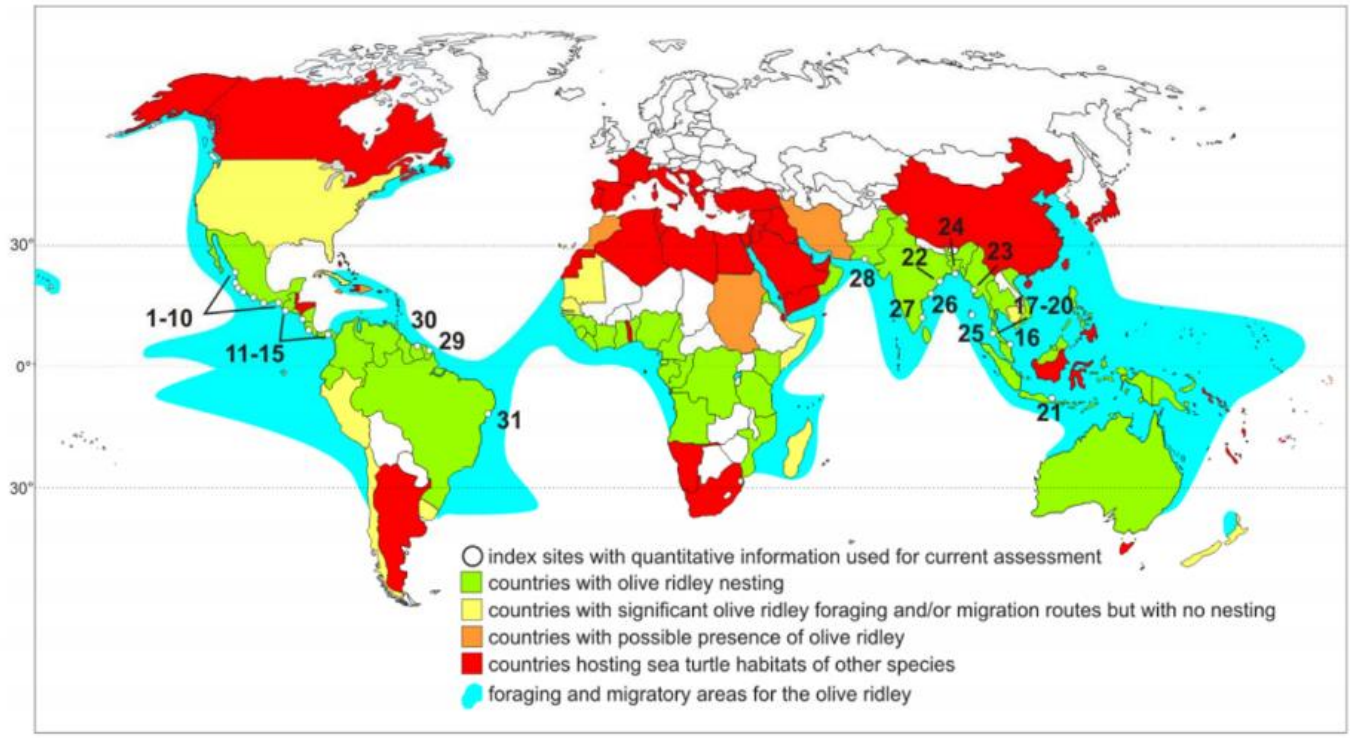

Fig. 2. Olive ridley turtle geographic distribution.

[https://dantablog.wordpress.com/2015/03/05/animals-that-need-our-help-olive-ridley-turtle, downloaded 10 March 2016]

Fig. 3. Olive ridley mass nesting or arribada.

[http://www.ranchochilamate.com/turtle-egg-smuggling, downloaded 10 March 2016]

Fig. 4. Olive ridley laying eggs.

[http://www.arkive.org/olive-ridley-turtle/lepidochelys-olivacea/image-G108754.html, downloaded 10 March 2016]

Fig. 5. Olive ridley hatchling.

[https://dantablog.wordpress.com/2015/03/05/animals-that-need-our-help-olive-ridley-turtle, downloaded 10 March 2016]