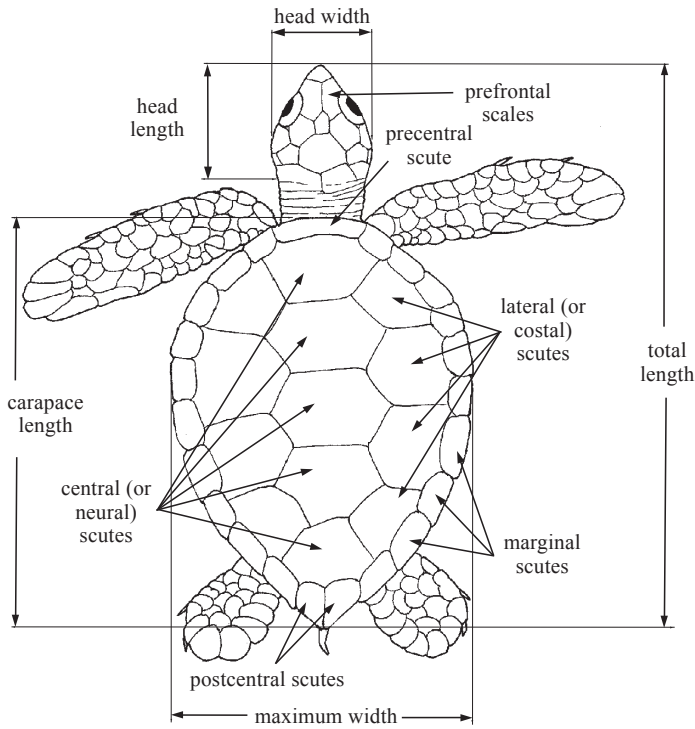


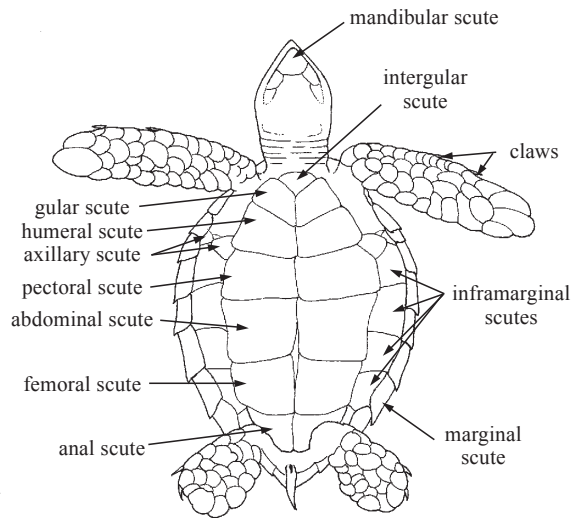
SEA TURTLES

By J.A. Musick, Virginia Institute of Marine Science, USA

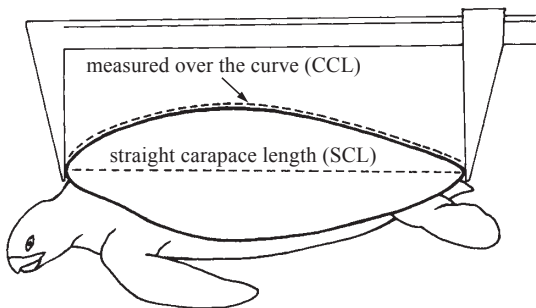
TECHNICAL TERMS AND MEASUREMENTS



dorsal view of a juvenile sea turtle (family Cheloniidae)



ventral view of a juvenile sea turtle (family Cheloniidae)



measurements of carapace length (see notes under 'General Remarks')

GENERAL REMARKS

Sea turtles are large to huge marine reptiles with adults averaging about 45 kg in the ridleys (*Lepidochelys kempii*, *L. olivacea*) and 500 kg in the leatherback (*Dermochelys coriacea*). The most typical feature of a turtle is the hard shell encasing the entire body. This shell consists of a layer of bones underneath and a horny layer on the outside arranged in a geometrical pattern of scutes in the majority of sea turtle species (family Cheloniidae), but is covered by leathery skin in the leatherback turtle, the only member of the family Dermochelyidae. The dorsal part of the shell, the carapace, is joined at the sides to the ventral part or plastron, which is notched at front and rear ends where the limbs emerge from the shell. All turtles have a strong, horny beak; none of them have true teeth, even though tooth-like projections may be present on the jaws. The front limbs of sea turtles are paddle-shaped like flippers.

Overall size in sea turtles is usually given as carapace length. Measurements over the carapace curve (CCL) in adults are 3 to 4 cm larger than straight carapace length (SCL, see figure). In addition, both straight and curved carapace lengths may be measured in several ways. Because the precentral scute may be concave and because there is a distinct notch between the postcentral scutes in the Cheloniidae, measurements may be taken from the furthest point on the front margin of the carapace to the furthest part on the hind margin (tip to tip), or from the nearest point on the front margin to the notch in the rear margin (notch to notch) or any combination of these. Available data often do not indicate in which way the measurements were done, and in those cases the information must be used as a reference of relative value, bearing in mind that such records could be biased by up to 4%. Because of their presence on the nesting beaches, female sizes are more often reported than those of males.

The sea turtles occur in all tropical and warm-temperate oceans. The majority of species inhabit shallow waters along coasts and around islands, but most are highly migratory, particularly as juveniles, and are found in the open sea. After the nesting season, species in temperate areas migrate to warmer waters to avoid cold temperatures. They are swift swimmers and may attain a speed of about 35 km per hour. Unlike fresh-water turtles, they move forward by simultaneous action of the front flippers. The majority of sea turtles are predominantly carnivorous, although some species are omnivorous and the green sea turtle changes to a vegetarian diet during the juvenile stage.

Nesting is performed on sandy beaches, just above the high tide mark; the clutch of around 100 eggs is buried in the sand and left unattended. Migration in large groups or 'flotillas', with simultaneous arrival at rookeries or nesting beaches ('arribazones') are commonly observed in some species. Usually, these arrivals have fortnightly or almost monthly periodicity, and each female may come to nest 2 to 5 times per season. It is assumed that the synchronized nest-building arrivals are an adaptive response to predation on both adults and eggs and are favourable for survival of the hatchlings which will emerge from several nests at the same time, thus making it easier for at least some of the young to escape from predators while running to the sea. Individuals have a reproductive cycle of 1 to a few years. After a long incubation period (usually 45 days to 2 1/2 months), the hatchlings emerge from the nest (mostly at night) and run to the sea. All western Atlantic species have a pelagic-oceanic existence which may last from a few months in some hawksbills (*Eretmochelys imbricata*) to 12 years in some loggerheads (*Caretta caretta*). Leatherbacks may use pelagic-oceanic habitats throughout their lives.

Turtles are highly vulnerable to predation. The eggs are principally eaten by raccoons, coyotes, dogs, pigs, monkeys, ghost crabs, fly maggots, ants, and beetles; also fungal and bacterial infections are common. The hatchlings, just before erupting from the nest can be attacked by ants, mites, and fly maggots, and the nests may be opened by mammals. When the hatchlings emerge from the nest and move to the sea, they are attacked by mammals, birds, and ghost crabs. In the water, predation continues by birds at the surface and fishes in the water column. Sharks and other fishes feed on juvenile sea turtles. Except for man, the worst enemy of adult sea turtles are sharks, particularly the tiger shark (*Galeocerdo cuvier*).

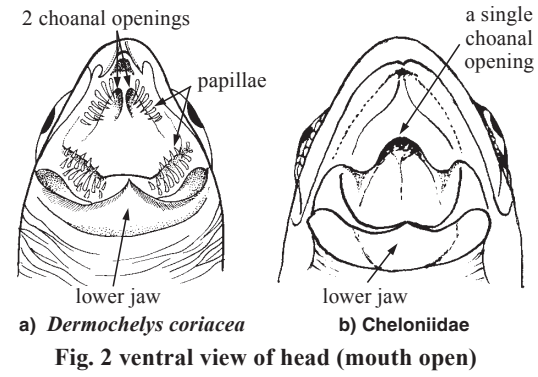
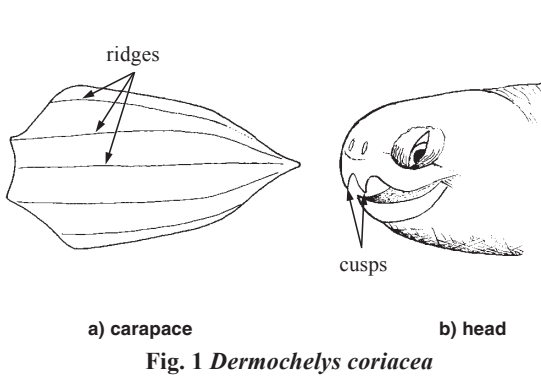
Since ancient times turtles have been highly esteemed as food for man. Both the flesh and eggs are of delicate taste and historically much of the production has been exported frozen or canned for the preparation of turtle soup, calipees, and other delicacies. Other uses include the extraction of oil from turtle fat, the processing of tortoise-shell and leather industries and as meal or fertilizer. Many turtles are captured directly on the nesting beaches by turning the females onto their backs; at sea they are caught by tangle nets, gill nets, seines, and harpoons.

All sea turtle species are in need of protection from unmanaged exploitation. Because sea turtles grow slowly, mature at late ages (12 to 50 years), and have long life spans (ca. 30 to 100 years) they have low intrinsic rates of increase and cannot withstand heavy rates of exploitation. They are especially vulnerable on land during their nesting period. Egg harvesting is now totally or partially banned in nearly all countries with nesting beaches. Because of the severe depletion of the majority of wild sea turtle populations, all species are considered endangered or critically endangered by the IUCN and are included in Appendix I of CITES. Commerce turtle products is restricted by international regulations, and all signatory countries to CITES are committed to implement measures to conserve these species and avoid illegal trade. However, though officially banned, tur-

tle fishing and egg harvesting continues. The farming of sea turtles, especially the green turtle, has been successful in some regions; however, the practice is controversial because cultured sea turtle products may encourage demand and further threaten wild populations through illegal harvest.

Key to the genera and species of sea turtles occurring in the area (After Márquez M., 1990)

- 1a. Body without horny scutes, covered by leathery skin (small scales present only in hatchlings); carapace with 5 dorsal longitudinal ridges (Fig. 1a); upper jaw with a pair of frontal cusps (Fig. 1b); choanae open in 2 separate apertures on anterior half of roof of mouth; patches of papillary projections arranged in rows on roof of mouth and in throat (Fig. 2a); flippers without visible claws **Dermochelyidae**
 (a singles species, *Dermochelys coriacea*, in the family)
- 1b. Carapace and plastron covered with scutes; scales present on head and flippers; choanae open in a single aperture on rear half of roof of mouth (Fig. 2b); papillary projections absent in mouth but present in throat; flippers with 1 or 2 developed claws **(Cheloniidae) → 2**



- 2a. Carapace with 4 lateral scutes on each side, the first pair not in contact with the precentral scute (Fig. 3a, b) → 3
- 2b. Carapace with 5 lateral scutes or more on each side, the first pair in contact with the precentral scute (Fig.3c, d) → 4

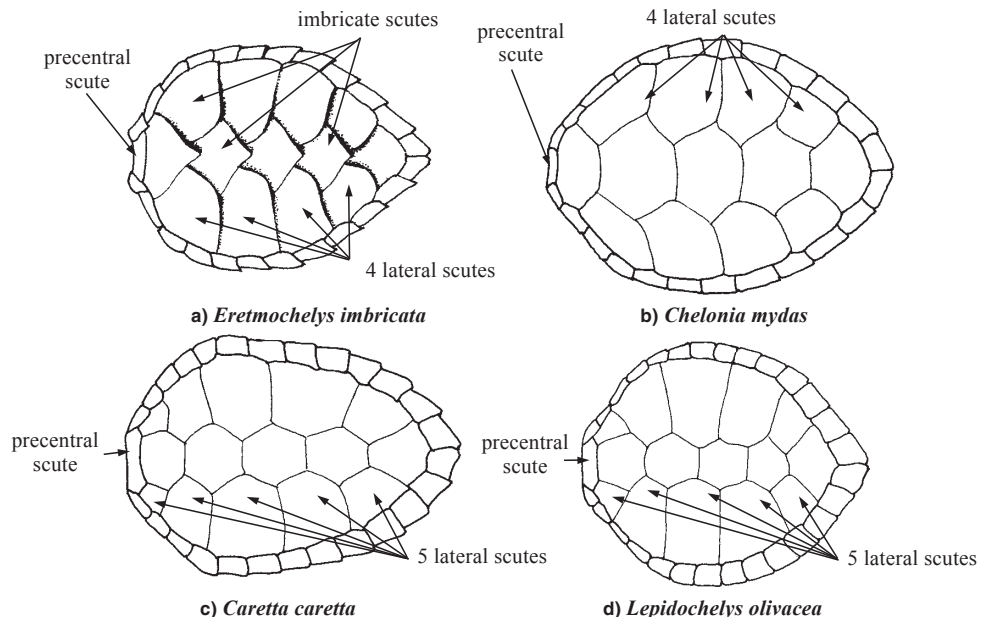


Fig. 3 carapace

- 3a. Carapace elliptical, covered by imbricate scutes (Fig. 3a) except in very old individuals; head narrow, with 2 pairs of prefrontal scales (Fig. 4a); jaw hawk-like, not serrated (Fig. 4a); flippers usually with 2 evident claws *Eretmochelys imbricata*
- 3b. Carapace nearly oval, with no imbricate scutes (Fig. 3b); head blunt (short snout), the preorbital distance clearly smaller than orbital length (Fig. 4b); a single pair of prefrontal scales, usually 4 postorbital scales (Fig. 4b); lower jaw serrated (Fig. 4b); flippers usually with only 1 distinct claw. *Chelonia mydas*

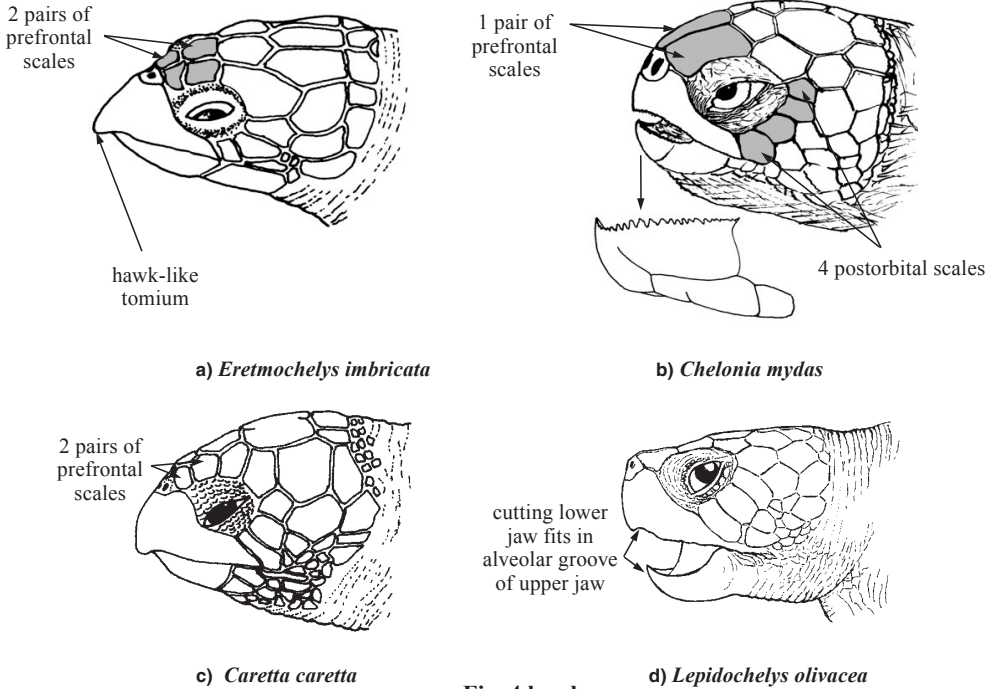


Fig. 4 head

- 4a. Carapace cardiform, its length always greater than its width (Fig. 3c); plastron usually with 3 pairs of inframarginal scutes, generally without pores (Fig. 5a); carapace scutes thick and rough to touch; head comparatively large, with a heavy and strong jaw lacking an internal alveolar rim (Fig. 4c); body colour usually reddish brown or yellowish brown *Caretta caretta*
- 4b. Carapace nearly round, its length similar to the width (Fig. 3d); plastron usually with 4 pairs of pored inframarginal scutes (fig. 5b); lateral scutes are often in 5 or more pairs; carapace scutes smooth to touch; head moderately small, with a cutting jaw provided with an internal alveolar rim (Fig. 4d); fore flippers with 1 or 2 visible claws on anterior border, sometimes another claw on distal part; rear flippers with 2 claws; body colour grey, olive, or olive yellowish. → 5

- 5a. Five pairs of lateral scutes, carapace grey or greyish olive, plastron white *Lepidochelys kempii*
- 5b. Usually 6 or more pairs of lateral scutes, carapace olive, olive brown, plastron creamy yellow *Lepidochelys olivacea*

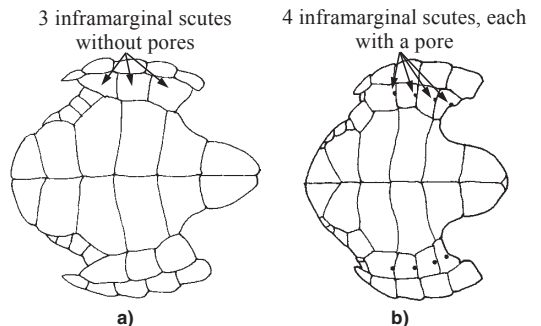


Fig. 5 plastron

List of species occurring in the area

The symbol 🐢 is given when species accounts are included.

CHELONIIDAE

- 🐢 *Caretta caretta* (Linnaeus, 1758).
- 🐢 *Chelonia mydas* (Linnaeus, 1758).
- 🐢 *Eretmochelys imbricata* (Linnaeus, 1766).
- 🐢 *Lepidochelys kempii* (Garman, 1880).
- 🐢 *Lepidochelys olivacea* (Escholtz, 1829).

DERMOCHELYIDAE

- 🐢 *Dermochelys coriacea* (Vandelli, 1761).

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Class REPTILIA
Order TESTUDINES
CHELONIIDAE

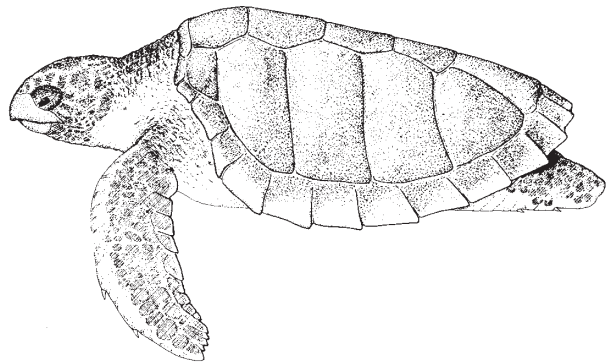
Caretta caretta (Linnaeus, 1758)

TTL

Frequent synonyms / misidentifications: None / *Chelonia mydas* Linnaeus, 1758; *Lepidochelys olivacea* Eschscholtz, 1829.

FAO names: En - Loggerhead turtle; Fr - Caouane; Sp - Caguama.

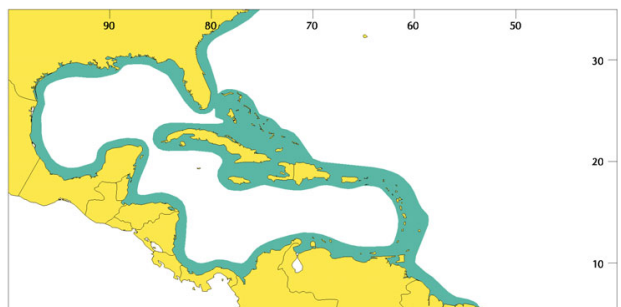
Diagnostic characters: Carapace of adults heart-shaped in dorsal view, its width about 76 to 86% of its length. Head large, broad, and subtriangular, 23 to 28% carapace length, with 2 pairs of prefrontal scales, and commonly 1 interprefrontal. Horny beak very strong, thicker than in other sea turtles. Scutes of carapace thin, but hard and very rough, commonly covered with barnacles; 5 pairs of lateral scutes (anterior one touching precentral scute), 5 centrals (neurals), and commonly 12 or 13 pairs of marginals, including postcentral or pygal scute. Three pairs of inframarginal scutes underneath bridge of plastron, rarely with pores. Fore flippers short and thick, each with 2 visible claws on anterior margin; rear flippers with 2 or 3 claws. Hatchlings and juvenile turtles with blunt spines on carapace scutes, forming 3 longitudinal keels that disappear during juvenile stage. **Colour:** adults distinct reddish brown dorsally with yellow ventrally; hatchlings dark brown dorsally, with flippers pale brown marginally and underneath, plastron usually much paler.



Size: Mature females with mean carapace length (straight carapace length) of 87 to 105 cm; mean weight near to 115 kg.

Habitat, biology, and fisheries: Inhabits warm seas. Nesting occurs in spring and summer on warm-temperate and tropical beaches. Females mature at about 20 years, deposit 44 to 152 eggs, 35 to 55 mm in diameter, and renest in about 14-day intervals. Individuals may nest from 1 to 6 times in a season and remigration may take place every 2 to 6 years. After an incubation period of about 60 days, the hatchlings move to the sea and swim to the Gulf Stream until they find refuge in *Sargassum*. Pelagic juveniles travel with the North Atlantic gyre for 6 to 12 years to the eastern Atlantic and back to the western Atlantic coastal waters where they become demersal, seasonally entering estuaries to feed on large, benthic invertebrates including horseshoe crabs (*Limulus*), crustaceans, and molluscs. The loggerhead is classified as Endangered by IUCN and international trade is prohibited by CITES. Fisheries for loggerheads are illegal in most places because of the decline of the species, but poaching of eggs and individuals is carried out locally. Bycatch of loggerheads in shrimp and other trawl fisheries, gill nets, and longlines continues to be a problem, hindering the recovery of this species.

Distribution: Circumglobal, recorded from Newfoundland to Argentina in the western Atlantic, but mostly distributed through tropical, subtropical, and warm-temperate coasts. This is the most temperate of the sea turtles with regular seasonal foraging migrations north of Cape Hatteras into the Middle-Atlantic Bight of the USA. Nesting occurs on high-energy beaches throughout the area with the largest nesting colony along the south Florida coast. Other nesting concentrations occur from north Florida to the Carolinas, the Florida panhandle in the Gulf of Mexico, and on the Yucatán peninsula.

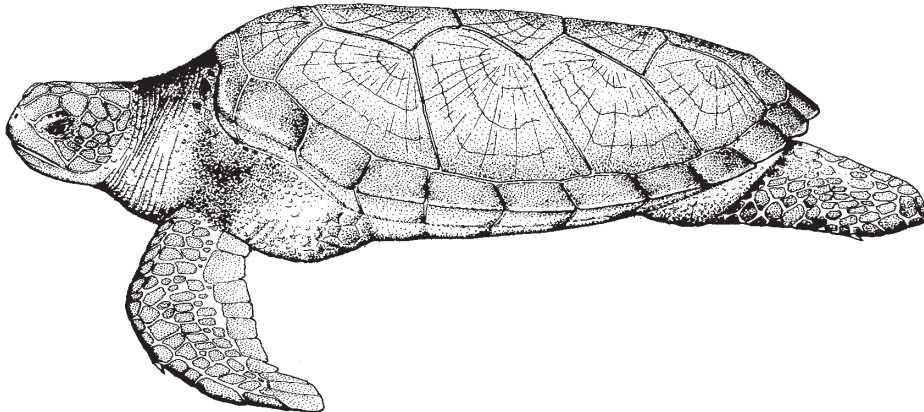


Chelonia mydas (Linnaeus, 1758)

TUG

Frequent synonyms / misidentifications: None / *Caretta caretta* (Linnaeus, 1758); *Lepidochelys olivacea* (Eschscholtz, 1829).

FAO names: En - Green sea turtle; Fr - Tortue verte; Sp - Tortuga verde.

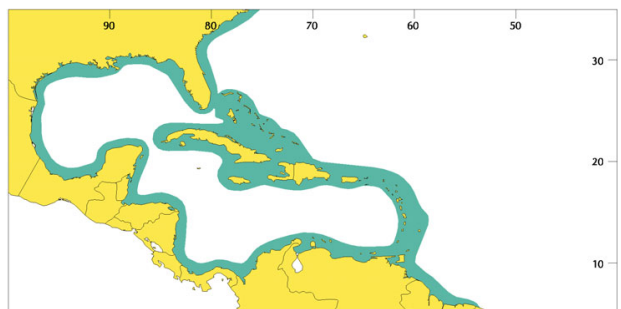


Diagnostic characters: Body generally depressed in adults; **carapace oval in dorsal view, its width about 88% of its length.** Head small and blunt, about 20% carapace length; **1 pair of elongate prefrontal scales between orbits. Lower jaw with sharply serrated cutting rim** corresponding with strong ridges on inner surface of upper jaw. Scutes of carapace thin, smooth, and flexible when removed; **4 pairs of lateral scutes (foremost one not touching precentral scute)**, 5 central scutes (low-keeled in small juveniles but median keel absent in larger juveniles and adults), and usually 12 pairs of marginal scutes. Ventral scutes also smooth and rather thin; 4 pairs of inframarginal, 6 pairs of central plastral, usually 1 intergular, and sometimes 1 interanal scute. **Each flipper with a single visible claw.** **Colour:** upper side pale to very dark brown **varying to brilliant combinations of yellow, brown, and greenish tones, forming radiated stripes, or abundantly splattered with dark blotches.** In juveniles, scales of head and upper side of flippers fringed by a narrow, clear, yellowish margin. Hatchlings dark brown to nearly black on upper side, carapace and rear edges of flippers with white margin, lower side white.

Size: In the area, nesting females with mean carapace length (straight carapace length) 102 cm; mean weight 136 kg.

Habitat, biology, and fisheries: Nesting occurs at night on tropical and subtropical beaches. Females mature at 20 to 50 years, deposit 110 to 140 eggs, 44 to 55 mm in diameter, and renege at 12- to 14-day intervals. Individual females may nest 1-5 times in a season and remigration occurs every 2 to 4 years. Egg incubation takes 48 to 70 days, and the hatchlings enter the sea, remaining pelagic for 2 to 4 years, often occurring in convergence zones. Younger demersal juveniles recruit to reef habitats where they continue to feed on invertebrates. Older juveniles and adults switch to herbivory, feeding on marine algae and seagrasses. Classified by the IUCN as endangered, and protected from international trade by CITES, green turtle harvest continues throughout the region on local and national scales, particularly in the Miskito Cays, Nicaragua. This is the most sought after sea turtle for meat, but the eggs are also harvested, and other products such as calipee, calipash, and oil are important as well. Fishery methods used to capture green turtles primarily include tangling nets, harpoons, and hand capture.

Distribution: Circumglobal in tropical and subtropical waters. Occurs in shallow seagrass beds and nests on high-energy beaches throughout the area. Major nesting aggregations in the Atlantic occur on Ascension Island, and in Suriname, and in the Caribbean at Aves Island, Costa Rica. Juveniles pelagic throughout the area.

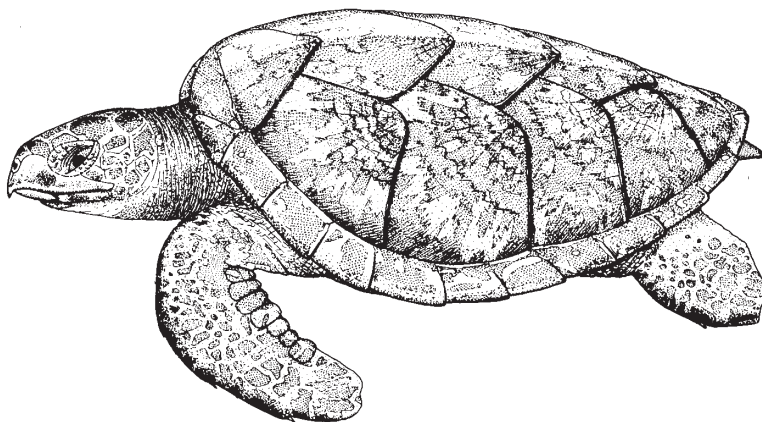


Eretmochelys imbricata (Linnaeus, 1766)

TTH

Frequent synonyms / misidentifications: None / None.**FAO names:** En - Hawksbill sea turtle; Fr - Tortue caret; Sp - Tortuga de carey.

Diagnostic characters: Carapace length of adults cardiform or elliptical, its width 70 to 79% of its total length. Head medium-sized, narrow, with **pointed beak**, the head length 21 to 33% of straight carapace length, with **2 pairs of prefrontal scales** and 3 or 4 postorbital scales; jaw not serrated on cutting edge, but hooked at tip. **Scutes strongly imbricated at maturity**, but overlapping character frequently lost in older animals. **Carapace with 5 costal, 4 pairs of lateral (the first not touching the precentral scute), 11 pairs of marginal,**

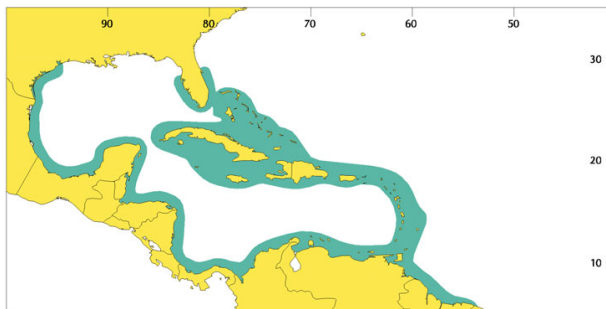


plus 1 pair of postcentral or pigal **scutes**. Ventrally, 5 pairs of scutes, plus 1 or 2 intergular, and sometimes 1 small interanal scute; **each plastron bridge covered by 4 poreless inframarginal scutes. Rear and fore flippers each with 2 claws on anterior border.** Hatchlings and juveniles with 3 keels of spines along carapace, disappearing with growth. Juveniles with scutes of carapace indented on rear third of carapace margin. **Colour:** pattern variable, scales of head with creamy or yellow margins; dorsal carapace with amber ground colour, and brown, red, black, and yellow spots or stripes, usually arranged in a fan-like pattern; ventrally, scutes rather thin and amber-coloured (juveniles with brown spots in rear part of each scute); dorsal sides of head and flippers darker and less variable. Hatchlings more homogenous in colour, mostly brown, with paler blotches on scutes of rear part of carapace, and also with small pale spots on "tip" of each scute along the 2 keels of the plastron.

Size: Mean carapace length (straight carapace length) of adult females 53 to 114 cm (worldwide), but reportedly highly variable; weight of adult females around 36 to 77 kg.

Habitat, biology, and fisheries: Hawksbills nest at night on tropical beaches, usually further from the water, nests often being deposited amongst shrubs and small trees. Age at maturity of female hawksbills in the western Atlantic is not known but probably lies between 12 and 18 years based on its size and similarity to other cheloniids. Females deposit from 70 to 200 eggs at 2-week intervals and reneest 2 to 5 times in a season, with remigration in 2 to 3 years. Incubation is 47 to 75 days and after entering the sea, hatchlings are pelagic for 1 or 2 years before recruiting to shallow coral reef and mangrove habitats. Hawksbills feed primarily on sponges but also may subsist on other invertebrate prey such as colonial anemones (*Zooanthus*). This species is classified as critically endangered by IUCN and trade is prohibited by CITES. Local harvest still continues in the region for food and collection of the shell ('tortoise-shell' or 'carey'), which is highly valued for production of jewelry. Hawksbills are captured by hand on nesting beaches (where eggs are also taken) and by free diving. Entangling nets and harpoons have also been used. Hawksbill flesh is sometimes toxic to humans.

Distribution: Circumtropical; although it has been reported from Cape Cod, USA to southern Brazil, its principal habitat lies primarily in the tropics. Nesting tends to be more scattered than with other sea turtle species, but principal nesting colonies are located on the Yucatán peninsula, Mexico, southern Cuba, several Caribbean islands and northeastern Brazil. Juveniles pelagic throughout the area.



Lepidochelys kempii (Garman, 1880)

LKY

Frequent synonyms / misidentifications: None / *Caretta caretta* (Linnaeus, 1758).

FAO names: **En** - Kemp's ridley turtle; **Fr** - Tortue de Kemp; **Sp** - Tortuga lora.

Diagnostic characters:

Carapace of adults nearly round (width of carapace about 95% of its length). Hatchlings have longer carapace, width about 84% of total length (straight carapace length), and larger head, about 41% of carapace length. **Head with 2 pairs of prefrontal scales. Carapace with 5 central, 5 pairs of lateral, and 12 pairs of marginal scutes; bridge area with 4 scutes, each with a pore.** Usually only 1 visible claw on fore flippers, hatchlings show 1 or 2 claws on rear flippers.

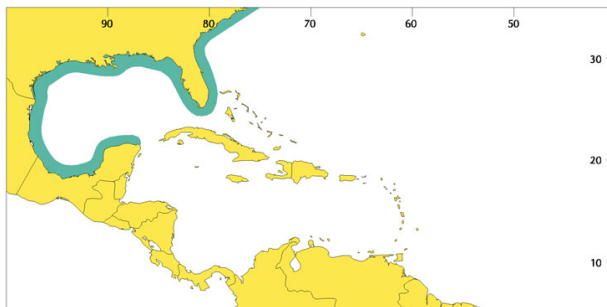
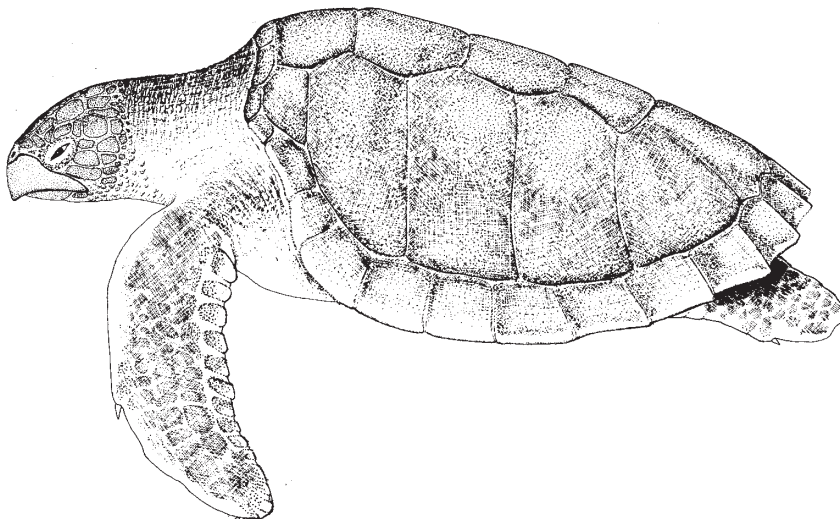
Colour: body of adults plain olive-grey dorsally,

white or yellowish underneath. Hatchlings are entirely jet black when wet, but this changes significantly with age, and after 10 months the plastron is nearly white.

Size: Together with its congener, *L. olivacea*, Kemp's ridley is the smallest of all sea turtles with a body mass of <50 kg. Mean carapace length (straight carapace length) of adults, 52 to 78 cm; weight of adult females 22 to 48 kg.

Habitat, biology, and fisheries: Natural nesting of Kemp's ridley occurs mostly on one small stretch of the Tamaulipas coast (Mexico) near Rancho Nuevo, a second small nesting colony is being established at Padre Island, Texas, USA. Kemp's ridleys have mass nestings (arribadas or arribazones) during the day in windy weather. Females mature at 10 to 12 years and nest 1 or 2 times a season depositing 97 to 112 eggs, 34 to 55 mm in diameter at each nesting. Remigration is 2 or 3 years. Egg incubation is 45 to 58 days after which the hatchlings enter the sea and remain pelagic for 1 to 2 years. Most juveniles remain in the Gulf of Mexico but about 25% move up the Atlantic coast of the USA, where they recruit in summer to shallow demersal estuarine foraging areas. A small number of pelagic juveniles may be carried into the eastern Atlantic. Demersal juveniles in temperate foraging grounds migrate south in winter and north in summer. Kemp's ridleys are mostly carnivorous, feeding on several different kinds of crabs, particularly portunids. Kemp's ridleys underwent a precipitous decline from 40 000 nesting females on a single day on one beach in 1947, to about 400 females nesting in an entire season in 1985. IUCN classifies this species as critically endangered, and it is protected from international trade by CITES. The population appears to be rebounding slowly with complete protection on the nesting beaches, and mandatory use of turtle excluder devices in shrimp trawls which are the principle source of fisheries bycatch mortality. Despite conservation efforts and government regulations, Kemp's ridleys continue to suffer bycatch mortality in shrimp trawls, gill nets, and other fishing gear.

Distribution: Mostly confined to continental coastal areas in the Gulf of Mexico and the Atlantic coast of the USA. Scattered nesting from Padre Island, Texas to Campeche, Mexico, with the vast bulk of the population nesting in Tamaulipas, Mexico. Juveniles pelagic in the Gulf of Mexico and from Florida north.

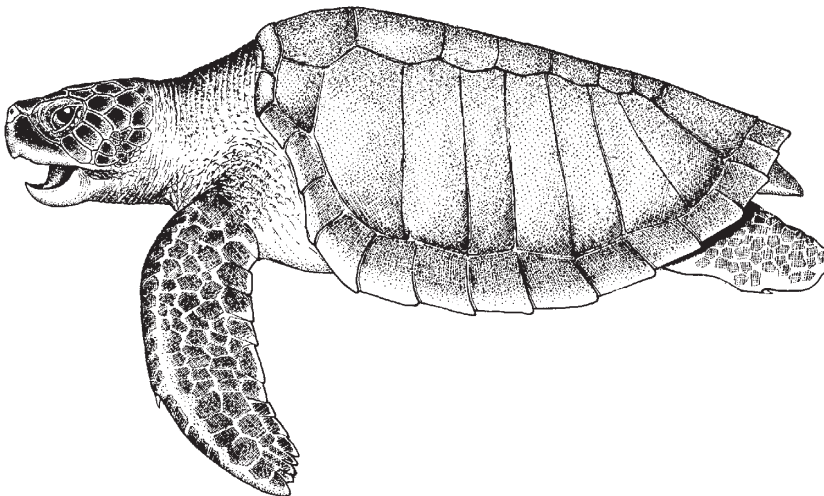


Lepidochelys olivacea (Eschscholz, 1829)

LKV

Frequent synonyms / misidentifications: None / *Caretta caretta* (Linnaeus, 1758); *Chelonia mydas* (Linnaeus, 1758).

FAO names: **En** - Olive ridley turtle; **Fr** - Tortue olivâtre; **Sp** - Tortuga golfina.

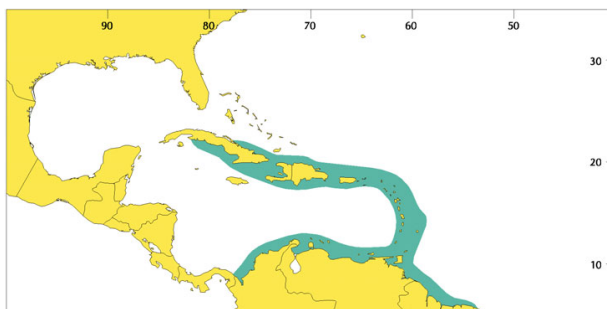


Diagnostic characters: Carapace of adults nearly round, upturned on lateral margins, flat on top, its width 93% of its length. Head subtriangular, moderate size, averaging 22.4% of straight carapace length. Head with 2 pairs of prefrontal scales. Carapace with 5 central scutes, 5 to 9 (usually 6 to 8) pairs of laterals (first pair always in touch with precentral scute), and 12 pairs of marginal scutes. Plastral bridges with 4 pairs of inframarginal scutes, each perforated by a pore toward its hind margin. Fore flippers with 1 or 2 visible claws on anterior border, and sometimes another small claw on distal part; rear flippers also with 2 claws. As in other turtle species, males have larger and more strongly curved claws, as well as a longer tail. **Colour:** adults plain olive grey above and creamy or whitish, with pale grey margins underneath. Hatchlings, black, grey dorsally, and white underneath.

Size: Mean carapace length (straight carapace length) of mature animals 64 to 72 cm (western Atlantic); weight usually 35 to 42 kg.

Habitat, biology, and fisheries: Females emerge in large aggregations (arribados or arribazones) to nest at night on tropical beaches. Age at maturity is unknown but probably similar to that of Kemp's ridley, 10 to 12 years. Western Atlantic olive ridleys deposit 30 to 168 eggs, 3.7 to 4.1 cm in diameter. Most females nest only once a season but 37.5% nest twice, and 3.89% may nest 3 times with internesting intervals of 17 to 30 days depending on weather. Remigration occurs from 1 to 3 years ($x = 1.4$). Hatchlings emerge after an incubation period of about 55 days and immediately enter the sea. Little is known of the pelagic stage in juvenile olive ridleys. In the western Atlantic, older juveniles and adults are demersal, foraging in coastal areas and estuaries for crustaceans, tunicates, and other invertebrates. Classified by the IUCN as endangered and protected from international trade by CITES, olive ridleys continue to be harvested locally. Eggs are taken illegally and both the meat and skin (for leather) are sought after. Hand capture both on the beach and underwater, and gill nets are the principle modes of harvest. Bycatch in shrimp trawls also exerts considerable mortality on the species. Population trends of nesting females show precipitous declines on the principle nesting beaches in Suriname and the Guianas.

Distribution: Circumtropical. In the western Atlantic, olive ridleys range normally in coastal waters from Venezuela to Bahia, Brazil with strays reported from Panama and Cuba in the north to Uruguay in the south. The largest nesting colonies occur in Brazil, French Guiana, and Guyana.



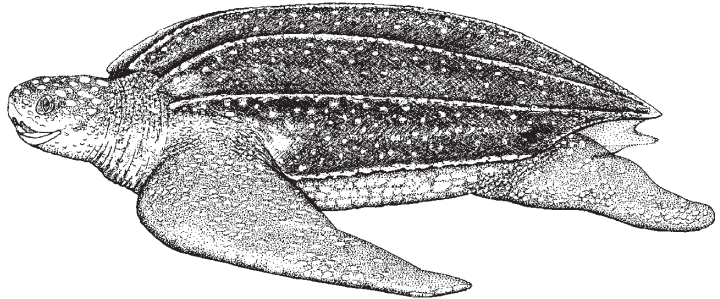
DERMOCHELYIDAE

Dermochelys coriacea (Vandelli, 1761)

DKK

Frequent synonyms / misidentifications: None / None.**FAO names:** **En** - Leatherback turtle; **Fr** - Tortue luth; **Sp** - Tortuga laúd, Baula.

Diagnostic characters: **Head of adults small**, round, and scaleless, 17 to 22.3% carapace length. Beak feeble, lacking crushing surfaces but sharp-edged; **upper jaw with 2 pointed cusps at front; lower jaw with single, pointed central hook that fits between upper cusps when mouth closed**; part of mouth cavity and throat covered with rows of posteriorly-directed, spine-like papillae. **Carapace reduced, without scutes, formed by a mosaic of small, polygonal osteodermic pieces**, supported by a thick matrix of cartilaginous, oily dermal tissue, **with 7 dorsal and 5 ventral longitudinal keels**; dorsal keels converging posteriorly in blunt end, above tail. **Body covered with scales in small juveniles, but absent in larger juveniles and adults, which are covered by a rubber-like, leathery skin.** **Flippers large and paddle-shaped**; in adults, fore flippers usually equal to or exceeding 1/2 carapace length; in hatchlings, fore flippers as long as carapace; rear flippers connected by membrane to tail; claws may be present in hatchlings only. Males distinguished from females by longer tail and narrower and less deep body.



Colour: variable in adults: dorsal side essentially black, with scattered white blotches, usually arranged along the keels, becoming more numerous laterally and very dense beneath body and flippers, the ventral side becoming mainly whitish; pinkish blotches on neck, shoulders, and groin, becoming more intense outside water; females have a pink area on top of head. Hatchlings and juveniles with more distinct white blotches, clearly arranged along keels.

Size: In western Atlantic adults ranges from 137 to 183 cm (curved carapace length) and 204 to 696 kg. The largest leatherback on record (from Wales) weighed 916 kg.

Habitat, biology, and fisheries: Nesting occurs at night on tropical and subtropical beaches. Females mature at 9 to 14 years, deposit 46 to 160 eggs, 51 to 54 mm in diameter and renest at 8- to 12-day intervals. Individuals may nest from 4 to 7 times a season and remigration occurs at 2 or 3 years. Egg incubation may last from 50 to 78 days; after which the hatchlings emerge and move immediately to the sea where they become pelagic. Growth is apparently faster than that of the Cheloniids as the leatherback is warm-blooded. This species remains pelagic during its entire life foraging on jellyfish, siphonophores, and other gelatinous prey in the open ocean as deep as 1 000 m, and on the continental shelf, even entering large estuaries. Because it can maintain an elevated body temperature this species regularly makes foraging migrations in summer to high latitudes. Leatherbacks are listed as endangered by the IUCN and protected from international trade by CITES. Most populations have shown precipitous declines in recent years, although some Caribbean populations are increasing. Monitoring population trends on nesting beaches for this species may be less reliable than for other sea turtles as leatherbacks show lower nest-site fidelity. Regardless of legal protection, leatherback eggs continue to be harvested, and the species is killed for its meat and oil locally. Bycatch mortality continues in trawl, gill net, and longline fisheries.

Distribution: Circumglobal with nesting concentrated in tropical areas. Seasonal foraging migrations extend as far as Labrador in the north and Mar del Plata, Argentina in the south. It nests throughout the Caribbean to south Florida with the largest colonies in Suriname and French Guiana.

