

ESTUARINE CROCODILES

by P.A. Rosenzweig

Class REPTILIA

Order CROCODYLIA

CROCODYLIDAE

A single species in the area sometimes found out at sea.

Crocodylus porosus Schneider, 1801

CHP

Frequent synonyms / misidentifications: None / *Crocodylus siamensis* (Schneider, 1801).

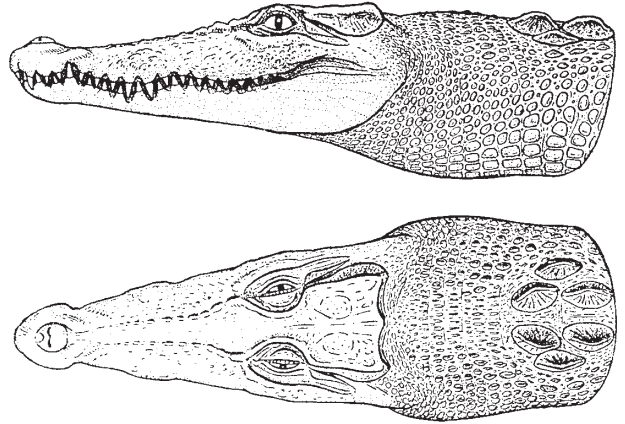
FAO names: En - Estuarine crocodile; Fr - Crocodile marine; Sp - Cocodrilo estuarino.

Diagnostic characters: Crocodylians are cold-blooded, amphibious, egg-laying reptiles with 4 legs, partially webbed feet, and a long powerful tail. Their external skin has scales, often strengthened by bone deposits (osteoderms), and they have a flattened, tooth-lined skull with broad or narrow snouts. *Crocodylus porosus* is broad-snouted, with a triangular-shaped head and pronounced ridges on the snout forward of the eyes in subadults and larger individuals. **Colour:** ranges through tan, grey, and black, usually with a cream to white underside.

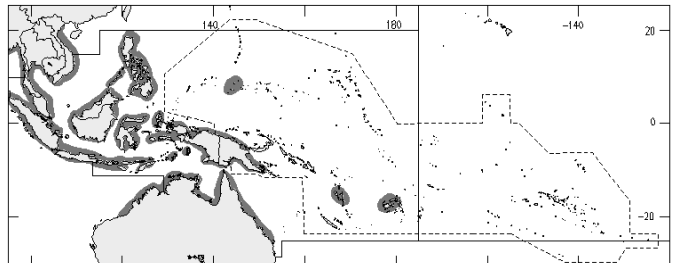
Size: The largest living crocodylian, with known maximum length 6.2 m; in the wild, specimens over 6 m are rarely encountered; weight for a 6 m adult is 1 100 kg.

Habitat, biology, and fisheries: Three families of the order Crocodylia are recognized, Crocodylidae (true crocodiles), Alligatoridae (alligators and caimans), and Gavialidae (gharials). Several species of crocodylians have been recorded in the FAO Yearbook of Fishery Statistics as being caught in Australia, Cambodia, Indonesia, Malaysia, Papua New Guinea, Singapore, Solomon Islands, and Thailand. However, *C. porosus* is the only species in the Western Central Pacific really found out at sea. It inhabits fresh water and brackish tidal rivers and estuaries, lakes, coastal mangrove forest, deltas, and coastal swamps. It often swims around coastlines, and occasionally travels further out to sea. Isolated individuals have been recorded around islands over 1 000 km from the nearest population. It can also be found well inland, far from the coast. *C. porosus* constructs a mound nest during the wet season (late November to early April) with an average of 40 to 60 eggs per clutch. The female aggressively protects the nest, and helps the hatchlings leave the nest in response to their calls from within the egg. This species is carnivorous and opportunistic. Juveniles select appropriately small prey such as aquatic insects, fish, and small amphibians, whereas larger adults take a wide range of prey from crustaceans, fish, and amphibians to lizards, birds, and mammals. *C. porosus* frequently cannibalize smaller crocodiles, and have a well-deserved reputation for being "man-eaters". It has, in the past, been heavily hunted for the skin trade throughout its range. The skin is highly prized due to the small, even size of the belly scales and their lack of osteoderms. In 1995, the reported total production of skins of *C. porosus* in the Western Central Pacific amounted to 37 021 t (FAO Yearbook of Fishery Statistics). *C. porosus* is legally protected in most countries but subject to controlled sustainable harvesting in Australia, Indonesia, and Papua New Guinea, as part of the conservation management programme in those regions.

Distribution: Found widely from eastern India and Sri Lanka throughout coastal Southeast Asia eastwards to the Philippines, Western Carolines, and Papua New Guinea, to northern Australia, the Solomon Islands, as far east as Vanuatu.



(from Wermuth, 1953)

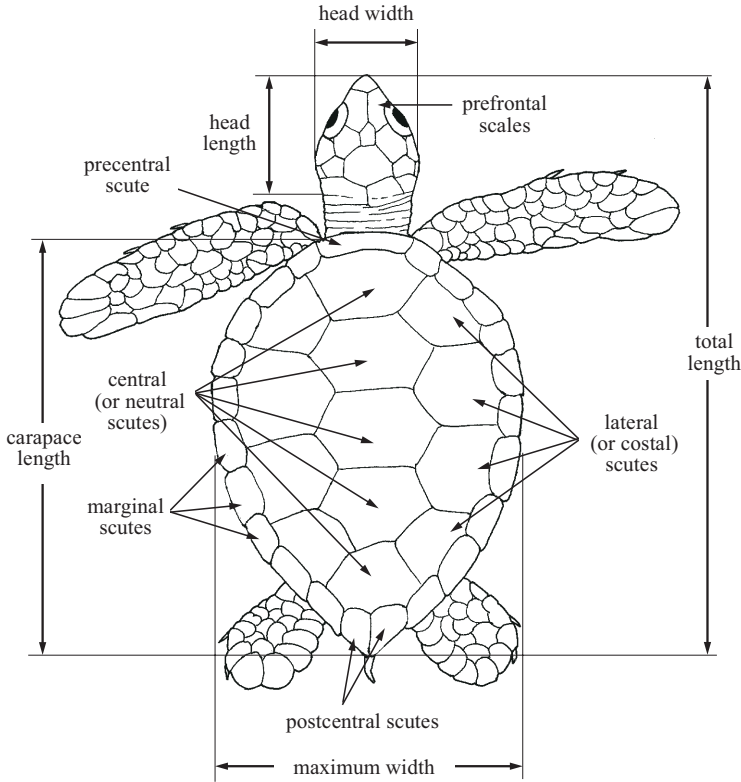


SEA TURTLES

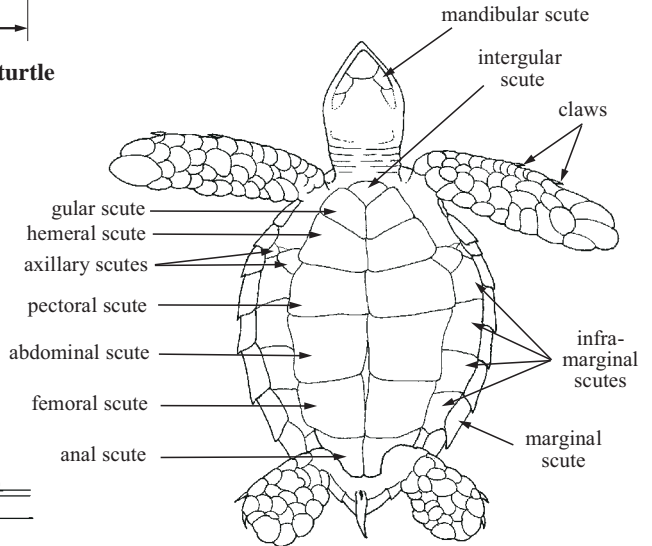
by E. Gomez and E.F.B. Miclat

Based on René Márquez M. (1990), "FAO species catalogue. Vol. 11. Sea turtles of the world. An annotated and illustrated catalogue of sea turtle species known to date."

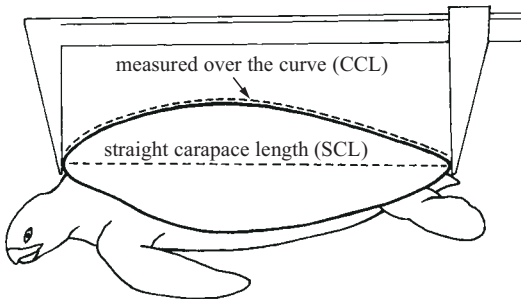
TECHNICAL TERMS AND MEASUREMENTS



**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

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 layer of horn on the outside, the horny layer displays a geometrical pattern of lamellae or scutes in the majority of sea turtle species (family Cheloniidae), but is covered by leathery skin in the leatherback turtle *Dermochelys coriacea*, the only member of the family Dermochelyidae. The dorsal part of 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 limbs or flippers of sea turtles are paddle-shaped.

The size of turtles is principally related to the carapace length, which is considered a reliable measure of overall size. Measurements over the carapace curve (CCL) in adults are 3 to 4 cm larger than straight carapace length (SCL) - see figure on left page. The available data sometimes 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, size reports on females are more common than those on 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 some are highly migratory and are found in the open sea. After the nesting season, some species overwinter buried in muddy bottoms of shallow coastal waters or migrate to warmer areas to avoid freezing 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 at the end of 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. Migrations in large groups or "flotillas", with simultaneous arrival at rookeries or nesting beaches ("arribazones") are commonly observed. 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 also 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 ½ months), the hatchlings emerge from the nest (mostly at night) and run to the sea. They apparently have a pelagic-nektonic existence until they reach juvenile size, but actually very little is known about habits and behaviour of hatchlings and the juvenile and subadult stages.

Turtles are highly vulnerable to predation. The eggs are principally eaten by badgers, dogs, pigs, monkeys, varanid lizards, ghost crabs, dipterous 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.

Since ancient times turtles have been highly esteemed as food for man. Both the flesh and the eggs are of delicate taste and 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 and the processing of tortoise-shell, leather, and 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 (an interesting method of turtle hunting is the use of the "living fish hook", the sucking fish or remora, family Echeneidae, see Vol. 4, pp. 2652-2654). Catch data on turtles from the Western Central Pacific are scarce: for 1995, the FAO Yearbook of Fishery Statistics lists a total catch of 540 t of sea turtles from the area (mainly Indonesia); separate statistics are only available for the green sea turtle (*Chelonia mydas*) from Fiji (6 t for 1995). A not insignificant number of sea turtles are incidentally caught in trawling, drift net, and other fishing operations, often resulting in the death of the turtles. In some countries, measures such as turtle exclusion devices are being adopted to minimize this incidental catch, a practice which should be adopted more widely.

Some sea turtle species are in bad need of protection from irrational 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, nowadays all species are considered vulnerable or endangered by the IUCN and included in Appendix I of CITES. Commerce of 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, turtle fishing and egg-harvesting still goes on. The farming of sea turtles, especially of the green turtle, has been successfully introduced to some regions; it is hoped that this technique will

become more widespread in the near future and thus take off some of the fishing pressure exerted on the species. In addition to the enforcement of protective legislation, the establishment of natural reserves for sea turtles is highly desirable.

KEY TO THE 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 tomium 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 single 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**

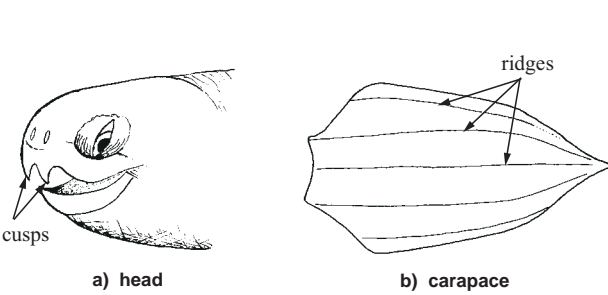


Fig. 1 *Dermochelys coriacea*

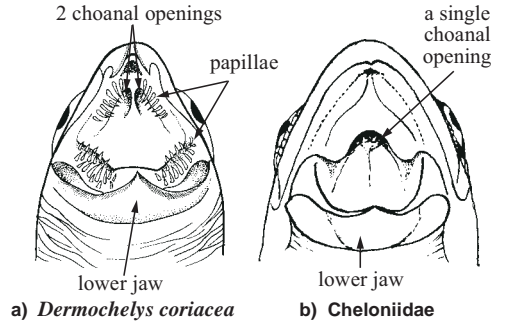


Fig. 2 ventral view of head (mouth open)

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

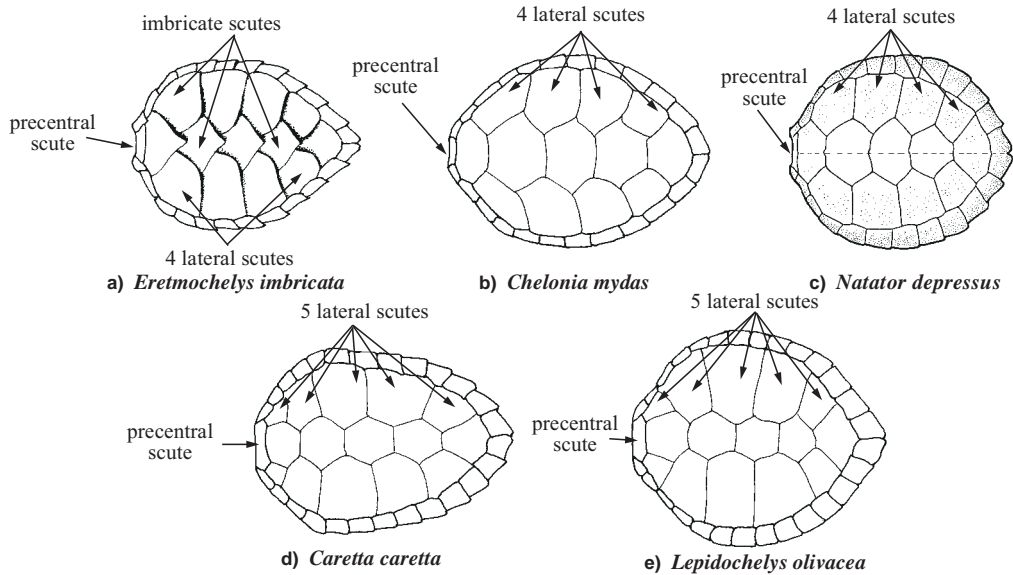


Fig. 3 carapace

- 3a. Carapace elliptical, covered by imbricate scutes (Fig. 3a) except in very old individuals; head narrow, with 2 pairs of prefrontal scales (Fig. 4a); tomium 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); tomium serrated (Fig. 4b); flippers usually with only 1 distinct claw *Chelonia mydas*
- 3c. Carapace nearly round and flattened, with slightly upward-folded margins, covered by moderately thin, non-imbricate scutes, waxy to touch (Fig. 3c); preorbital distance nearly equal to orbital length (Fig. 4c); a single pair of prefrontal scales, usually 3 postorbital scales (Fig. 4c); tomium not serrated (Fig. 4c); flippers with 1 distinct claw *Nاتور depressus*

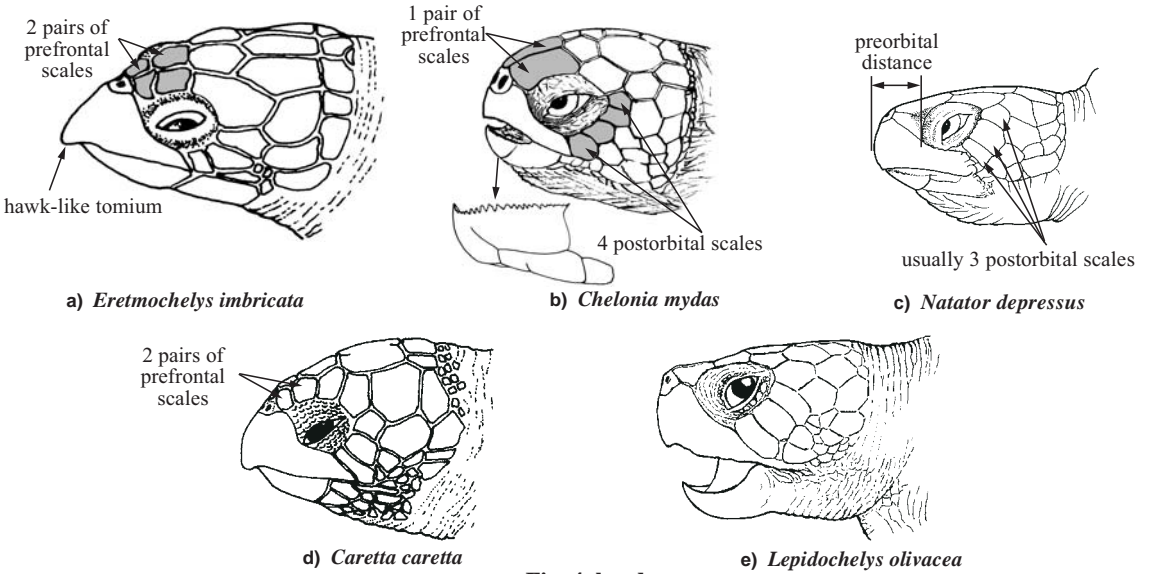


Fig. 4 head

- 4a. Carapace cardiform, its length always greater than the width (Fig. 3d); 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 tomium lacking an internal alveolar rim (Fig. 4d); body colour usually reddish brown or yellowish brown *Caretta caretta*
- 4b. Carapace nearly round, its length similar to the width (Fig. 3e); plastron usually with 4 pairs of pored inframarginal scutes (Fig. 5b); lateral scutes are often more than 5 pairs; carapace scutes smooth to touch; head moderately small, with a cutting tomium provided with an internal alveolar rim (Fig. 4e); 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 *Lepidochelys olivacea*

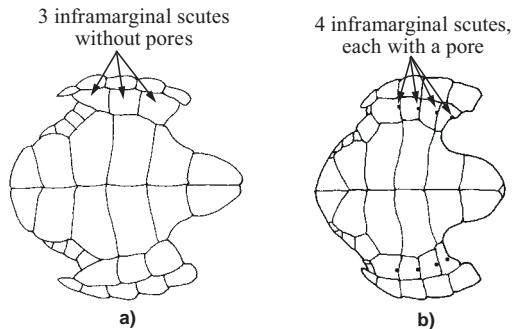


Fig. 5 plastron

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 olivacea* Eschscholtz, 1829
 🐢 *Natator depressus* Garman, 1880

DERMOCHELYIDAE

- 🐢 *Dermochelys coriacea* (Vandelli, 1761)

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Class REPTILIA

Order TESTUDINES

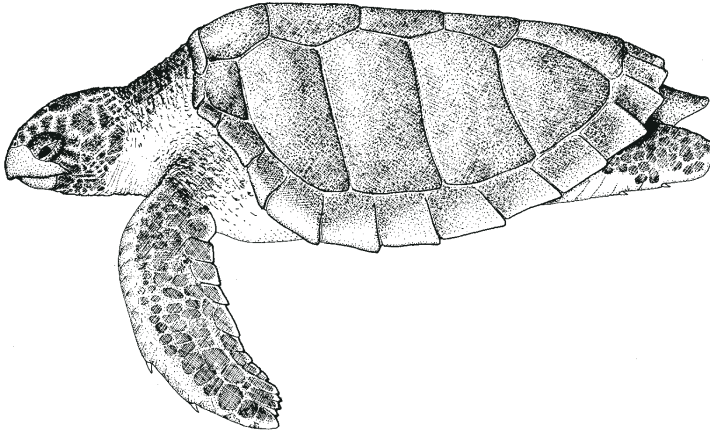
CHELONIIDAE

Caretta caretta (Linnaeus, 1758)

TTL

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

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

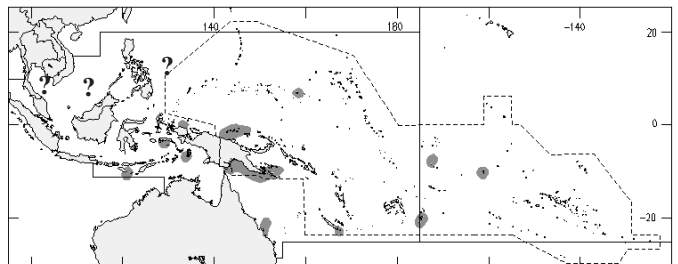


Diagnostic characters: Carapace of adults heart-shaped in dorsal view, its width about 76 to 86% of its length. Head large, broad, and subtriangular, 23 to 28% carapace length, with 2 pairs of prefrontal scales, and commonly 1 interprefrontal. Horny beak very strong, thicker than in other sea turtles. Scutes of carapace thin, but hard and very rough, commonly covered with barnacles; 5 pairs of lateral scutes (anterior one touching the precentral scute), 5 centrals (neurals), and commonly 12 or 13 pairs of marginals, including postcentral or pygal scute. Three pairs of inframarginal scutes underneath the bridge of the 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 by reddish brown dorsal coloration; hatchlings dark brown dorsally, with flippers pale brown marginally and underneath, plastron usually much paler.

Size: Mature females with carapace length (SCL) of 81.5 to 105.3 cm; mean weight near to 75 kg.

Habitat, biology, and fisheries: Inhabits continental shores of warm seas; common in shallow waters. Nesting usually occurs in spring and summer and is mostly repeated every 2 or 3 years. Carnivorous throughout its life cycle, feeding on benthic prey. Usually caught on the nesting beaches and by setting entangling nets in front of the beaches, but the species is more prone to incidental catch by shrimp trawlers, gill nets, or tuna longlines and bottom trawls. Up to the seventies, it was commonly fished for its meat, eggs, leather, and fat, but the flesh and leather are less valuable than those of the green turtle, and the carapace brings a lower price than that of the hawksbill turtle.

Distribution: Widely distributed in coastal tropical and subtropical waters. Distribution in the area insufficiently known, due to confusion with *Lepidochelys olivacea* and *Chelonia mydas*; recorded from Indonesia (Sumatra, Borneo, Java, Solor, Sulawesi, Ambon, Aru, and Irian Jaya); Papua New Guinea, Philippines, Australia (Queensland, Great Barrier Reef), Kiribati, Tokelau, Cook Islands, Solomon Islands, New Caledonia, Tonga, possibly Fiji.

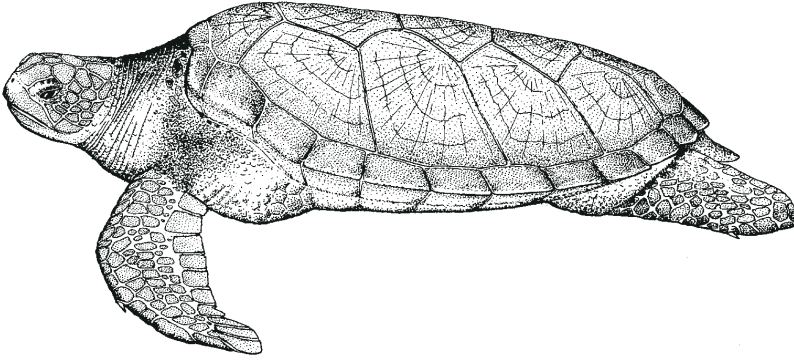


Chelonia mydas (Linnaeus, 1758)

TUG

Frequent synonyms / misidentifications: None / *Caretta caretta* (Linnaeus, 1758); *Lepidochelys olivacea* Eschscholtz, 1829; *Natator depressus* (Garman, 1880).

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

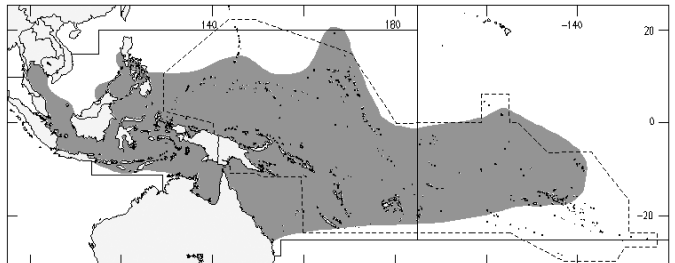


Diagnostic characters: Body generally depressed in adults; **carapace oval in dorsal view, its width about 88% of its length.** Head small and blunt, about 20% carapace length; **1 pair of elongate prefrontal scales between orbits.** **Tomium of lower jaw with sharply serrated cutting rim** corresponding with strong ridges on inner surface of upper tomium. 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 juveniles but median keel absent in subadults and adults), and usually 12 pairs of marginal scutes. Ventral scutes also smooth and moderately 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 and plain colour **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. Pacific forms dark grey; bluish green on lower side. 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 carapace length (SCL) 81.2 to 111.6 cm; weight 186 kg (Australia) to 89.8 kg (Solomon Islands).

Habitat, biology, and fisheries: A solitary nektonic species, occasionally forming feeding aggregations in shallow seagrass beds. Nesting is usually repeated every 2 years; due to its wide distributional range, the time of the nesting season varies among localities. A herbivorous turtle. Mainly taken by entangling nets, drift nets, harpoons, grapnels, hooks, by hand on the nesting beaches, and as bycatch in shrimp trawls, set nets, gill nets, and beach seines. Principally caught for its meat, but also for the eggs; other products are calipee, calipash, and oil. Considered the best turtle species for commercial farming and ranching. International commerce of wild green turtles is banned, but capture for use as food for local consumption persists in many Central Pacific islands and parts of Southeast Asia. From 1990 to 1995, the FAO Yearbook of Fishery Statistics reports a range of yearly catch of 6 to 49 t of green turtles from the WCP area (Fiji only). In the same period, the yearly aquaculture production of this species in Reunion ranged from 5 to 30 t (FAO Aquaculture Production Statistics).

Distribution: Widely distributed in tropical and subtropical waters, rare in temperate waters. The most abundant sea turtle in the area, known from the Gulf of Thailand, Malaysia (Sarawak, Sabah), Philippines, Indonesia (Sumatra, Riau Province, Kalimantan, Sulawesi, Java, Madura, Sumbawa, Flores, Irian Jaya, the islands of Obi, Ambon, Banda, Maluku Province), Papua New Guinea, Australia (Northern Territory, Queensland), Wake Island, Guam, Northern Mariana Islands, Palau, Micronesia, Marshall Islands, Line Islands (Jarvis), Kiribati, Tuvalu, Samoa, Cook Islands, Solomon Islands, Vanuatu, New Caledonia, Fiji, Tonga, French Polynesia (Society Islands, Tuamotu Archipelago, and Marquesas).

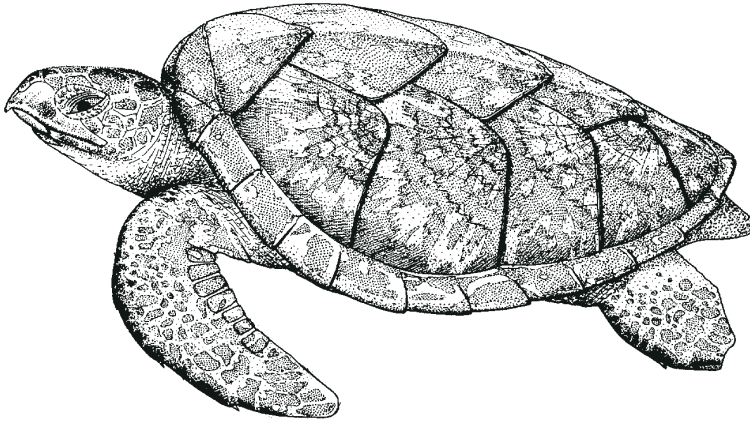


Eretmochelys imbricata (Linnaeus, 1766)

TTH

Frequent synonyms / misidentifications: None / None.

FAO names: En - Hawksbill sea turtle; Fr - Tortue caret; Sp - Tortuga de carey.

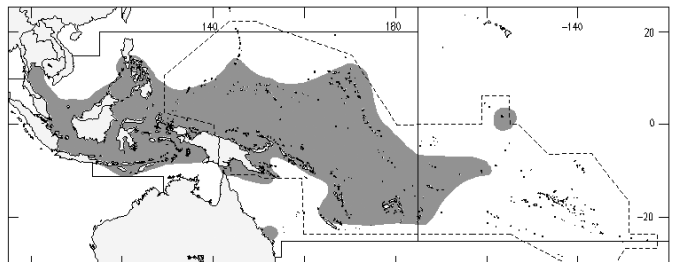


Diagnostic characters: Carapace of adults cardiform or elliptical, its width 70 to 79% of its total length. Head medium sized, narrow, with **pointed beak**, the head length 21 to 33% of SCL, with **2 pairs of prefrontal scales** and 3 or 4 postorbital scales; tomium not serrated on cutting edge, but hooked at tip. **Scutes strongly imbricated at maturity**, but overlapping character frequently lost in older animals. Carapace with 5 central, **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 and subadults with scutes of carapace indented on rear third of carapace margin. **Colour:** pattern variable, from very bright colours to heavy melanistic forms in the eastern Pacific; 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 moderately 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 homogeneous 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: Carapace length (SCL) of adult females 53 to 114 cm (worldwide); weight of adult females around 36 to 77 kg.

Habitat, biology, and fisheries: Inhabits clear, littoral waters of mainland and island shelves. Nesting is repeated every 2 or 3 years, the season occurs mostly towards the end of spring and throughout summer. Carnivorous; individuals over 10 cm carapace length are benthic feeders. Usually captured on the nesting beaches, but also by harpoons, entangling nets of different mesh-sizes, and scuba diving. The meat is avoided as food in some places, because of the high risk of intoxication, which has frequently led to fatalities. The brightly-coloured, thick, flexible carapace scutes ("carey", "tortoise-shell") are used in jewellery and for low-quality souvenir trinkets. With the CITES restrictions, the exports of carey scutes have decreased substantially and only few countries retain a reservation effective for the species.

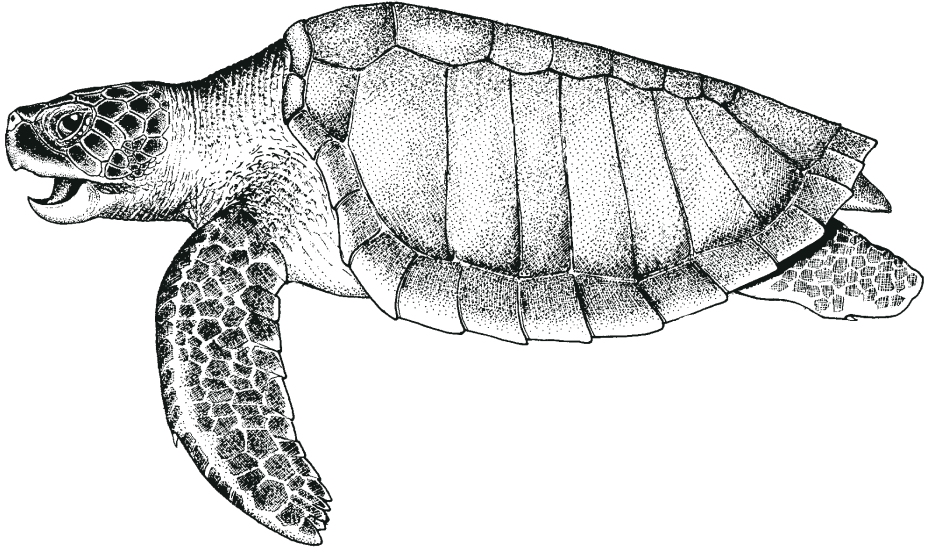
Distribution: Circumtropical; in the area, known from the Gulf of Thailand, Philippines, Indonesia (Riau Province, Sumatra, Java, Kalimantan, Sulawesi, Maluku, Irian Jaya), Papua New Guinea, Australia (only Torres Straits, northern Great Barrier Reef, and some Northern Territory areas), Guam, Northern Marianas, Micronesia, Palau, Marshall Islands, Kiribati, Tuvalu, Samoa, Cook Islands, Solomons, Vanuatu, New Caledonia, Fiji, Tonga, and French Polynesia (Society Islands, and Marquesas).



Lepidochelys olivacea (Eschscholtz, 1829)

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

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

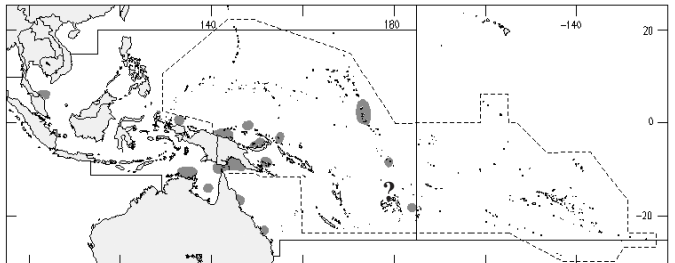


Diagnostic characters: Carapace of adults nearly round, upturned on lateral margins, flat on top, its width 90% of its length. Head subtriangular, moderate sized, averaging 22.4% of SCL. (3-year old juveniles with carapace width 93% of SCL, and head length 26% SCL.) Head with 2 pairs of prefrontal scales. Carapace with 5 central scutes, 5 or more 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 in 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. Newborn hatchlings, when wet, almost completely black, sometimes with greenish sides, and in general become dark grey after drying; with growth, they change to grey dorsally and white underneath.

Size: Carapace length (SCL) of mature animals 51 to 75 cm (worldwide); weight usually 33 to 43.4 kg.

Habitat, biology, and fisheries: Adults are most frequently neritic, travelling or resting in shallow continental surface waters, but also dive down to 300 m. Nesting is repeated every 1 to 3 years; the nesting season extends from beginning of summer to the end of autumn. A facultative carnivore, for long periods capable of eating a single kind of food. Probably the most abundant sea turtle worldwide, captured legally or illegally throughout its range. Up to the end of the seventies, it was excessively caught for its leather; the leather trade continues today on a smaller scale. Hunted for its meat and oil and provides a high-quality protein and residual fertilizer. Harvesting of eggs continues in the majority of the nesting grounds; in some parts (e.g. Malaysia) it is legalized and subjected to quotas. The incidental catch by shrimp trawlers, longliners, and purse-seiners may amount to several thousand turtles each year.

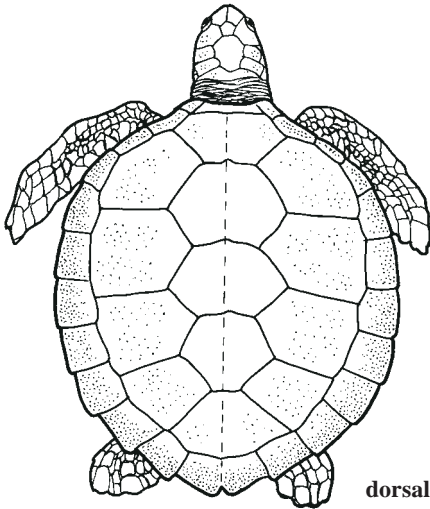
Distribution: A pantropical species, mainly in the northern hemisphere, with the 20°C isotherms as its distributional boundaries; nearly unknown around oceanic islands. In the area, known from Malaysia (Peninsular Malaysia, Sarawak, Sabah), Philippines, Indonesia (only Irian Jaya), Papua New Guinea, Australia (only Arnhemland, Gulf of Carpentaria, northern Queensland), Northern Mariana Islands, Micronesia (Yap District), Kiribati, Tuvalu, Solomon Islands, New Caledonia, and possibly Fiji and Tonga.



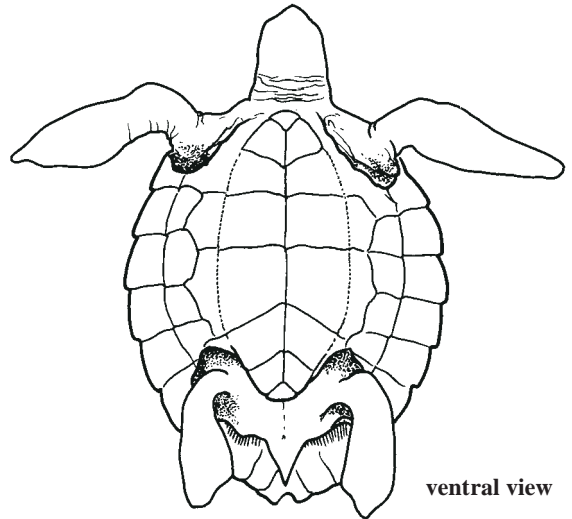
Natator depressus (Garman, 1880)

Frequent synonyms / misidentifications: None / *Chelonia mydas* Linnaeus, 1758.

FAO names: En - Flatback turtle; Fr - Tortue platte; Sp - Tortuga plana de Australia.



dorsal view



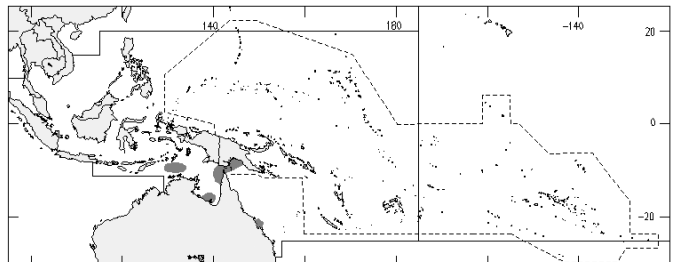
ventral view

Diagnostic characters: In adults, **body flat and carapace smooth, nearly elliptical, with upturned margins**; in subadults, carapace rim usually indented from middle part backward. **Carapace width 82 to 84% of carapace length (CCL)**. Head medium sized, subtriangular, flat on top, with a moderately serrated lower tomium. Scutellation similar to *Chelonia mydas* (5 centrals, **4 pairs of laterals**, and 12 pairs of marginals), but carapace soft, waxy, and smooth to touch, usually free of barnacles. **Head with 3 postorbital scales each side** (4 in *C. mydas*), and **prefrontals without or with very limited contact to sheath of upper tomium**; sometimes, an extra-preorbital (preocular) scale on each side. Snout longer than in *C. mydas*, nearly equal to orbit length. Ventrally, scutes have same counts as in *C. mydas*; only 1 axillary scale in each bridge of the plastron. **Each flipper has a single visible claw** (young individuals with extra distal claw, more apparent in fore flippers) and scales of fore and rear flippers interrupted by wrinkled skin overlying the phalanges. **Colour: adults dorsally dull olive grey**, with pale brownish yellow tones marginally; neck and head with same pale tonality; ventrally the plastron, side of neck and proximal part of flippers creamy white. Young individuals more brightly coloured. Colour of hatchlings distinct from other species, the carapace scutes forming a dark grey reticulate pattern, each scute with a pale olive grey centre and the entire rim of carapace and flippers contoured by a cream-coloured band; ventrally, hatchlings cream white.

Size: Carapace length (CCL) of nesting females 88 to 96 cm in southeastern Queensland (with mean weight 74.4 kg), and 80.5 to 97 cm in Crab Island (with weight 59.5 to 84 kg).

Habitat, biology, and fisheries: Completely neritic and endemic to shallow waters of Australia. At Mon Repos, the turtles nest every 1 to 5 years. Nesting season in southeastern Queensland extends from October to January, at Fog Bay from May to October, and in other places throughout the year. A carnivorous forager. The turtle has never been favoured as food; local consumption is low because some consider the flatback meat as poisonous; the eggs are more appreciated. The catch is mainly incidental: in the Gulf of Papua, several turtles per year are captured during prawn trawling; also in the Gulf of Carpentaria and Shark Bay, flatbacks are often caught by prawn trawling and large-meshed set nets. Because of its restricted distribution and intrinsic biology, the flatback turtle is more vulnerable than other sea turtles to habitat change or overexploitation.

Distribution: Restricted to northwestern, northern, and northeastern Australia (from 21°S in the west to 25°S in the southern part of Queensland), including southern coastal waters of Timor and Arafura seas. Single individuals were reported from the Gulf of Papua, Fisherman's Island, and Tureture village.

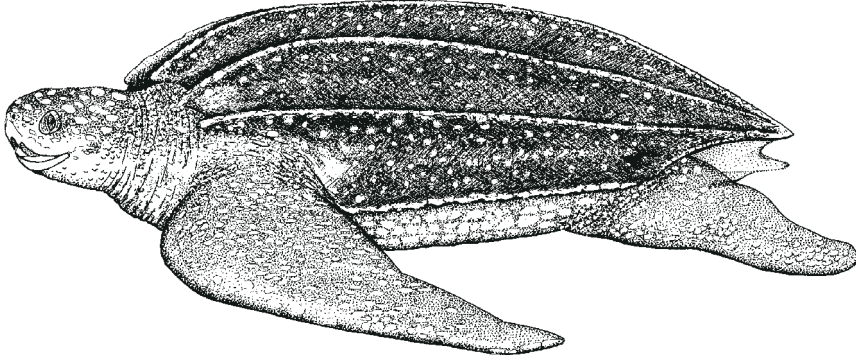


DERMOCHELYIDAE

Dermochelys coriacea (Vandelli, 1761)

Frequent synonyms / misidentifications: None / None.

FAO names: En - Leatherback turtle; Fr - Tortue luth; Sp - Tortuga laúd.



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 horny 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, much above tail. Body covered with scales in juveniles, but absent in subadults 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 the keels.

Size: In Queensland, 150.5 to 174.5 cm carapace length (CCL). An adult caught off Ponape Island (Micronesia) measured 2.17 m total length and weighed 444 kg.

Habitat, biology, and fisheries: Seldom forms large aggregations. Previously considered to be strictly epipelagic, but frequently descends into deep waters; approaches coastal waters only during the reproduction season. Nesting is repeated every 2 or 3 years, usually in autumn and winter. Probably carnivorous throughout its life cycle. No commercial fisheries; caught incidentally by set or drift nets and by longlines. In some places used as a bait in longline shark fisheries; it yields many liters of oil which was used in the past for caulking wooden boats and for oil lamps. In many countries, the populations have been threatened by egg-harvesting.

Distribution: Worldwide in tropical to subtropical oceans, but even found in waters with temperatures of 10° to 20°C; in the area, known from Malaysia (Terengganu, Sarawak, Sabah), Philippines (single record from Cebu; Cuyo Islands, Diit, Maniguin Island), Indonesia (southeastern Java, Solor, Irian Jaya), Papua New Guinea, Australia (only east coast of Queensland, occasionally north coast of Northern Territory), Micronesia, northern Mariana Islands, Guam, Kiribati, Tuvalu, American Samoa, Solomon Islands, Vanuatu, Fiji, and French Polynesia (single record).

