

Observing

SEA TURTLES

in Costa Rica



Leatherback



Loggerhead



Green



Olive Ridley



Hawksbill

5



species of sea turtles:

Leatherback
Tortuga baula
Derموchelys coriacea

Green Turtle
Tortuga verde
Chelonia mydas

Olive ridley
Tortuga lora
Lepidochelys olivacea

Loggerhead
Tortuga cabezona
Caretta caretta

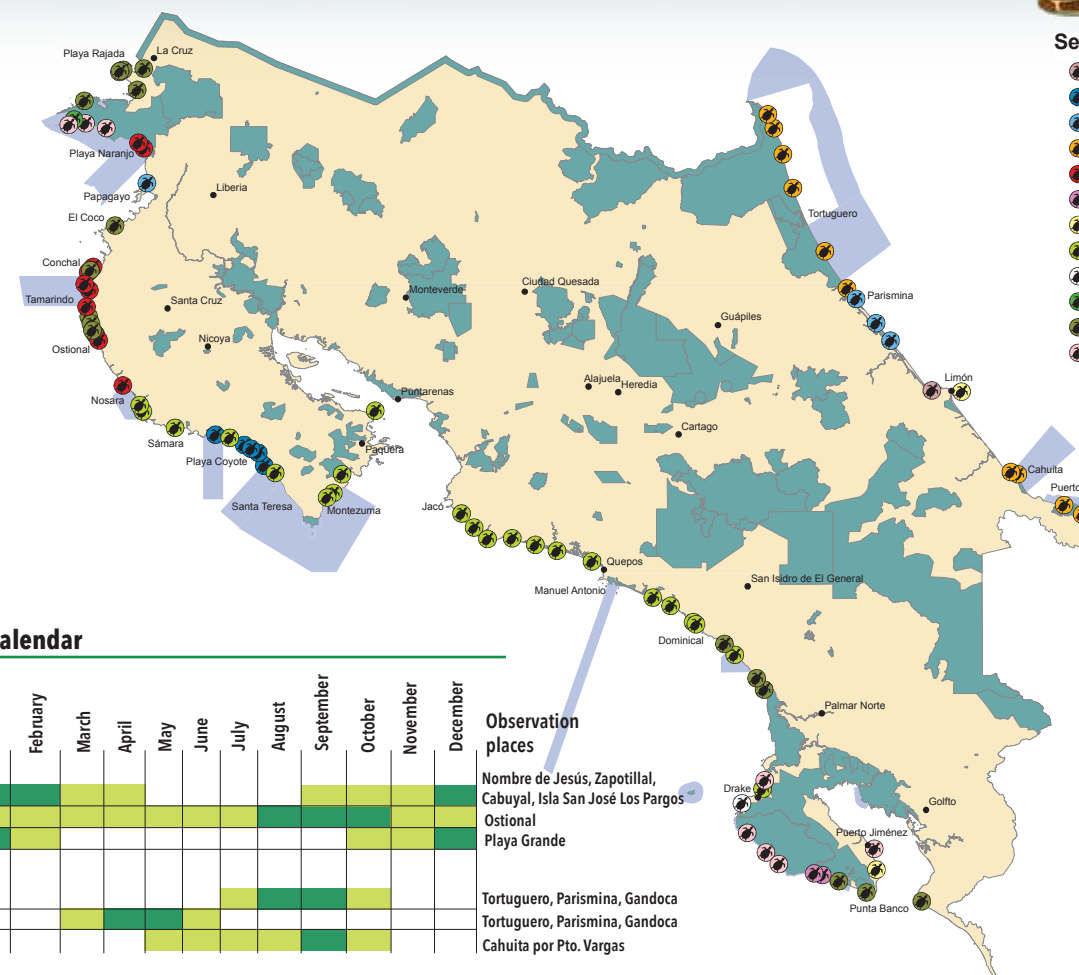
Hawksbill
Tortuga carey
Eretmochelys imbricata

Costa Rica is a privileged country, as it is visited by no fewer than five species of sea turtles, migratory species with a high ecological value and great indicators of the health of the oceans. The sea turtles nesting beaches play a very important role in ecosystem dynamics, as well as being a hotspot of ecotourism development in Costa Rica. The beaches have made it possible for local communities to carry out tourism activities related to the observation of the nesting process, which has brought significant economic and social benefits at the local and regional levels.

Costa Rica has also been one of the few countries in the world that has been carrying out sea turtle conservation for over 60 years, beginning in 1955 in the community of Tortuguero with Archie Carr. Sea turtles

are one of the most important animal groups mentioned in the declarations of several protected wildlife areas, including Tortuguero National Park, established in 1975, as well as some established later, including the **Ostional National Wildlife Refuge, Las Baulas Marine National Park and the Camaronal National Wildlife Refuge**. Over the years the government has made significant efforts to protect the sea turtles nesting beaches by including them in the management plans of protected wildlife areas, such as **Playa Nancite in Santa Rosa, Playa Hermosa and Punta Mala in Cahuita, and Gandoca-Manzanillo**.

In spite of these efforts, approximately 50% of the beaches used for sea turtle nesting are not covered by the country's natural heritage program (MINAE 2018).



Sea Turtle species

- Leatherback
- Leatherback and Olive Ridley
- Leatherback and Green
- Leatherback, Green and Hawksbill
- Leatherback, Green y Olive Ridley
- Leatherback, Green, Olive Ridley and Hawksbill
- Hawksbill
- Olive Ridley
- Olive Ridley and Hawksbill
- Green and Hawksbill
- Green and Olive Ridley
- Green, Olive Ridley and Hawksbill

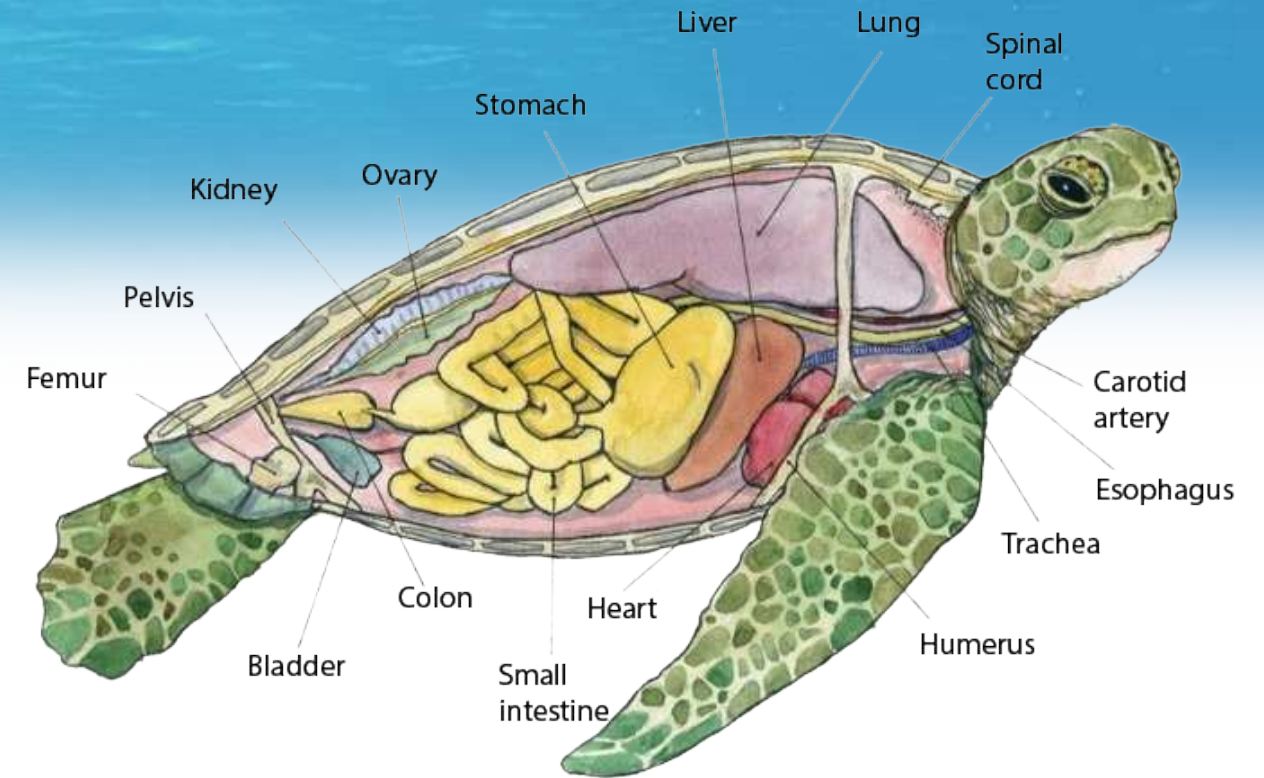
- Protected marine area
- Protected land area

Credits:
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Coordination and production: Mario B. Badilla Jara / Design and layout: Floria Leiva Pacheco / Turtle illustrations: Alexander Salazar / Maps: Pablo González.
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Species and their characteristics

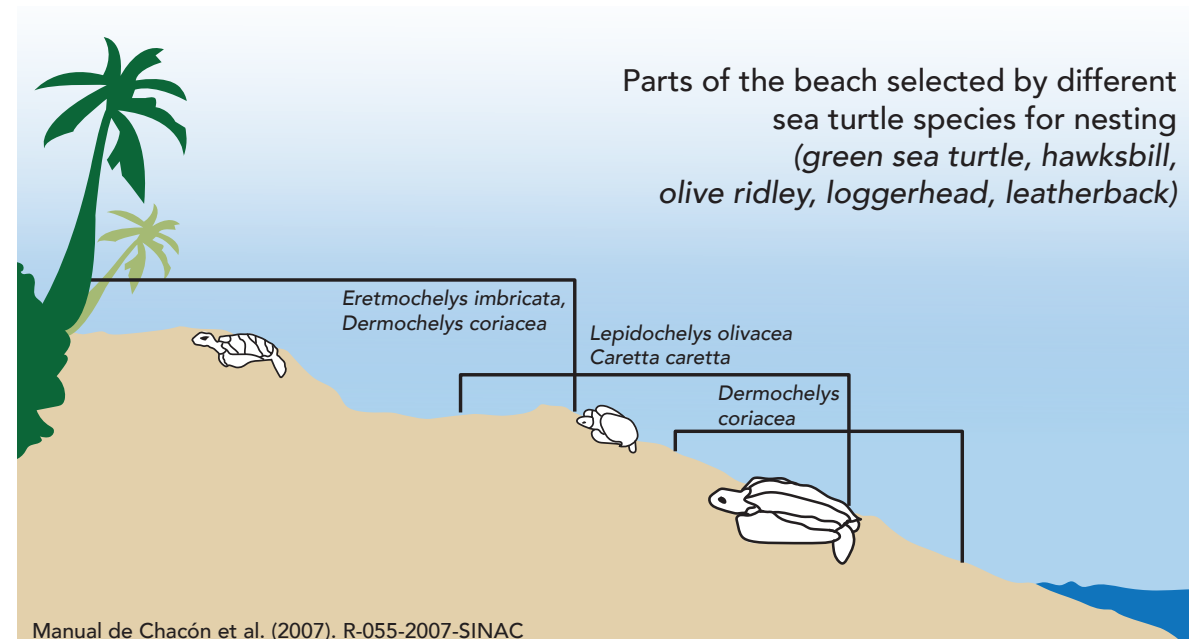
Species	Common name	Head	Shell	Plastron
<i>Eretmochelys imbricata</i>	Hawksbill Tortuga Carey	2 pairs of prefrontal scales	Scutes imbricated (overlapping)	4 inframarginal scutes without pores
<i>Chelonia mydas</i>	Green turtle Tortuga verde	1 pair of prefrontal scales	4 lateral scutes	4 inframarginal scutes without pores
<i>Lepidochelys olivacea</i>	Olive ridley Tortuga lora	More than 1 pair of prefrontal scales	6 or more lateral scutes 6 or more vertebral scutes	4 inframarginal scutes with pores
<i>Caretta caretta</i>	Loggerhead Cabezona	More than 1 pair of prefrontal scales	5 lateral scutes	3 inframarginal scutes without pores
<i>Dermochelys coriacea</i>	Leatherback Tortuga baula	No scales	Ridges	No scutes



Newborn sea turtles develop a temporary sharp egg-tooth called a caruncle, which they use to break the egg. The tooth remains for a short time, breaking off after a few days.



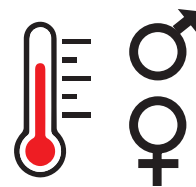
Beach nesting sites



Parts of the beach selected by different sea turtle species for nesting (green sea turtle, hawksbill, olive ridley, loggerhead, leatherback)

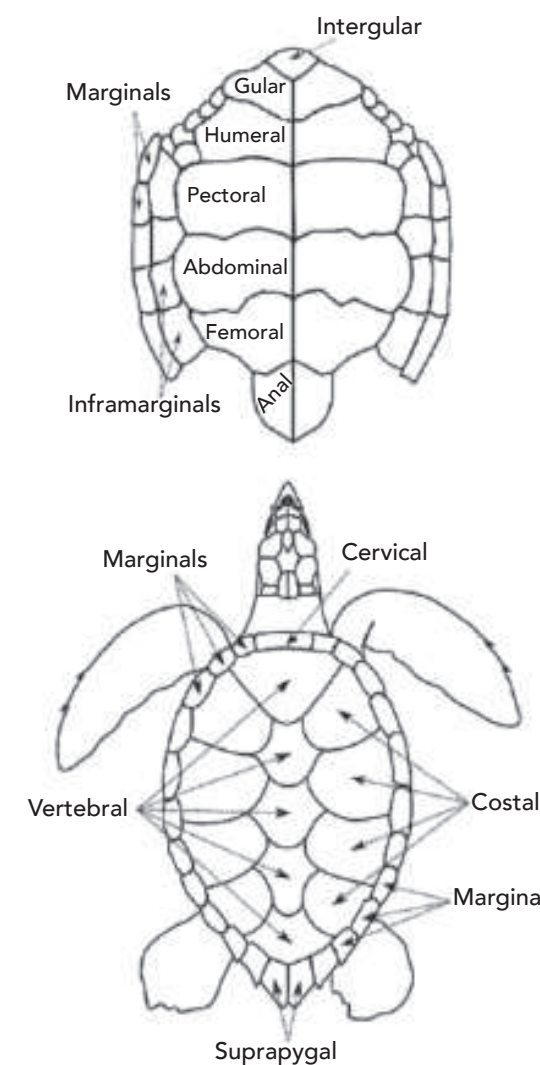
Manual de Chacón et al. (2007). R-055-2007-SINAC

Did you know?

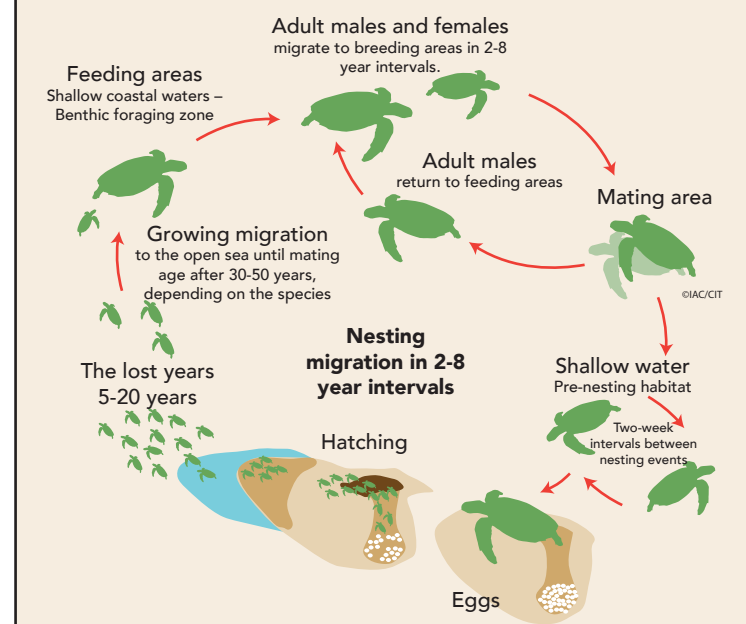


Temperature determines the sex of newborns.

If the temperature in the nesting cavity is above 28.7-30.0°C, a proportionally larger number of females will be born (depending on the species).



Life cycle of a sea turtle



The life cycle of sea turtles makes it hard to manage the species and exposes them to many impacts, natural as well as human-caused, which puts their survival at risk. Very few sea turtles survive to maturity: perhaps only 1 per 1000.

Inter-American Convention for the Protection and Conservation of Sea Turtles. For more information, visit www.iacseaturtle.org

Leatherback sea turtle

Leatherback sea turtles carry out extensive migrations between different feeding regions in various seasons and nesting zones.

Dermochelys coriacea

Tortuga baula

Shell

Elongated, with seven longitudinal ridges protruding from the back. The shell is soft, thick and does not contain scutes, the usual components of turtle shells. It is the only species in which the shell is composed of small bony plates called osteoderms.

Coloration

Dorsal side is predominantly black, with a variable abundance of white or lighter spots; spots can be bluish or pink on the neck and base of the fins; clear pigmentation predominates on the plastron.

Head

Triangular, up to 25 cm wide; covered with skin; no scales or scutes in adults. The head has a pinkish spot that differs between individuals and can be used for identification.

Plastron

Relatively small, flexible (contains very little material)

Up to 500 kg

One individual was reported with a weight of 1,000 kg and a size of 3 m.

Extremities

Frontal flippers are extremely long; skin does not contain scutes in adults; claws not present on any of the flippers.



Nesting period on the Pacific coast

September to March:

Grande, Ventanas, Langosta, Ostional, Nancite, Osa, Junquillal, Matapalo, Naranjo, Real, Honda, Zapotillal y Nombre de Jesús.

Nesting period on the Caribbean coast

February-August:

Barra del Colorado, Tortuguero, Moín, Parismina, Pacuare, Matina, 12 millas, Negra, Cahuita, Gandoca.

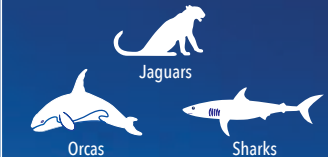
Leatherback turtles are circumglobally distributed, with nesting sites on tropical sandy beaches and foraging ranges that extend into temperate and subpolar latitudes. Leatherbacks are a single species worldwide comprising seven biologically described regional management units or subpopulations. (Wallace et al. 2010).

Predators

Eggs and newborns:



Adults:



The leatherback is the world's largest sea turtle species. It used to be a common sight in the northern Pacific coast, but currently arrives less frequently. It can also be observed in abundance along the Caribbean coast between March and July. These animals are not easy to spot, as they prefer to swim in the open ocean.



Average length in Costa Rica:
148.7 cm (Pacific)
152 cm (Caribbean)

NESTING PERIOD



Caribbean coast:
February-August

Pacific coast:
September to March

DIET



Juveniles and adults both feed on jellyfish and soft-bodied invertebrates.

MATING



Occurs every **four or more years** in shallow coastal waters

GEOGRAPHIC DISTRIBUTION



Worldwide distribution, with nesting sites on **tropical sandy beaches and foraging ranges** that extend into temperate and subpolar latitudes.

CONSERVATION STATUS



Tropical eastern Pacific: **critically endangered**
 Northwestern Atlantic region: **endangered**

THREATS



Egg poaching, plastic bags, bycatch, coastal development, sale, solid and liquid waste

AGE



30 - 50 years. Under ideal conditions, it is believed that they can live longer.

SEXUAL MATURITY



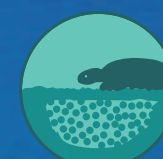
Reached between **9 and 14 years of age**

WHERE THEY SWIM



They prefer to swim in the open ocean, **from the surface to depths of 1,300 m.**

AVERAGE NEST SIZE



Between **68 and 80 normal eggs, 112 eggs per nest** (Caribbean)

NESTS PER SEASON



7-13 clutches of eggs laid per season

INCUBATION PERIOD



50-70 days

To find out on which beaches in Costa Rica you can see leatherback turtles, see the map on page #1.

GREEN TURTLE

Chelonia mydas

Tortuga blanca (Caribbean),
Tortuga negra (Pacific)

Oval shell (Caribbean)

Non-serrated margin, 4 pairs of costal scutes.

Heart-shaped shell (Pacific)

Posterior notch present in adults, non-serrate; commonly tectiform (shaped like a tent) and flattened on the anterior profile; 4 pairs of costal scutes.

Black coloration on the dorsal side in newborns, becoming brown with radial veins in juveniles and highly variable in adults (generally brown, creamy-yellow and other earthy shades; smooth, streaked or spotted); ventral side white in newborns, yellowish in adults.

Weight up to **230 kg** in the Caribbean and up to **120 kg** in the Pacific (70 kg on average)

One claw on each flipper (Pacific and Caribbean)

Head: Up to 15 cm (Caribbean) is the width of its head 2 prefrontal scales; 4 pairs of postorbital scales.

Head: Up to 13 cm (Pacific) 2 prefrontal scales; 4 pairs of postorbital scales is the most common number, followed by 3 pairs.

Extremities Relatively larger flippers than other populations of the *C. mydas* complex (Pacific)

Average length: **104,6 cm Caribbean**
88,6 cm Pacific

Except for their migrations, during which they cross the open sea, they generally live in shallow waters with coral reefs, seagrass beds and algae.



Nesting period on the Caribbean coast

June to October: Barra del Colorado, Tortuguero, Parismina, Pacuare, Matina, 12 millas, Negra, Cahuita, Gandoca.

Nesting period on the Pacific coast

Year-round:

Nombre de Jesús-Zapotillal, Los Pargos, Cabuyal, Ostional, Caletas, Camaronal, Matapalo, Isla San José, Nancite, Naranjo, Real and Honda.

The green sea turtle, also known as the black turtle, has a worldwide distribution, occurring in all tropical seas as well as subtropical waters with less frequency (eastern, northeastern, northwestern, southeastern and western Atlantic Ocean, eastern and western Indian Ocean, Mediterranean Sea, eastern, northwestern, southwestern and western Pacific Ocean).

PREDATORS

Eggs and newborns:

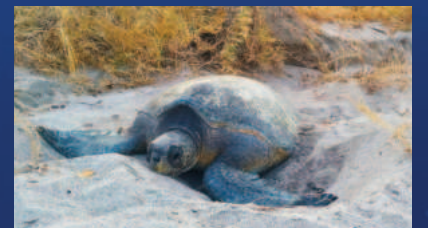


Adults:



There is a significant concentration of green sea turtles in Tortuguero, on the Atlantic coast, with over 100,000 nesting females per year.

A subspecies of the green sea turtle, called the black turtle, lives on the Pacific coast of Costa Rica. It is smaller, with dark coloration and a narrower rear portion of the shell. In addition to seagrass and algae, they consume mangrove propagules and marine invertebrates. Nombre de Jesús, Zapotillal, Los Pargos, Cabuyal, Isla San José and Golfo Dulce are very important sites for the feeding and nesting of this subspecies (*Ch. mydas agassizi*).



NESTING DATE



Caribbean: June to October
Pacific: August to March

DIET



Omnivorous from when they are newborns to juveniles, but become **herbivorous** as adults (seagrass, algae)

MATING



Occurs every **two to four years** in shallow coastal waters.

GEOGRAPHIC DISTRIBUTION



Found in all **tropical seas** as well as less frequently in subtropical waters (eastern, northeastern, northwestern, southeastern and western Atlantic Ocean, eastern and western Indian Ocean, Mediterranean Sea, eastern, northwestern, southwestern and western Pacific Ocean).

CONSERVATION STATUS



Endangered

THREATS



Egg poaching, bycatch, coastal development, sale, solid and liquid waste.

AGE



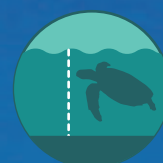
Up to **75 years**

SEXUAL MATURITY



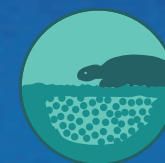
Reached between **20 and 50 years of age**

HABITAT



Except for their migrations, during which they cross the open sea, they generally live in shallow waters with coral reefs, seagrass beds and algae.

AVERAGE NEST SIZE



82 eggs in the Pacific and 112 eggs in the Caribbean

NESTS PER SEASON



3 or more times per season. The average nesting intervals is 14 days.

INCUBATION PERIOD



48-70 days

To find out on which beaches in Costa Rica you can see leatherback turtles, see the map on page 1

Green sea turtles are named for the color of their fat, which is green because of their diet of seagrass (*Thalassia sp.*) This gives their fat tissue an olive-green color, which is called *Calopee* on the coast of Limón.

OLIVE RIDLEY

Known as the only sea turtle that lays its eggs in a mass nesting event called *arribada*, with thousands of females arriving at the same beach to lay their eggs. Between 100,000 and 300,000 females can participate in the event. There are several beaches along the Pacific coast of Central America where the phenomenon occurs: Ostional and Nancite (Costa Rica), Playa La Flor and Chacocente (Nicaragua), and Isla Cañas and la Marinera (Panama).

Lepidochelys olivacea

Tortuga Lora

Shell

Short and broad, lightly tectiform (tent-shaped) in adults, five to nine pairs of costal scutes (commonly six to eight), frequently with an asymmetric configuration.

Head:

Relatively large, slightly triangular; up to 13 cm wide, two pairs of prefrontal scales.

Weight:

35 kg - 50 kg

Extremities

Two claws on each flipper (some adults may lose the second claw on the front flippers).

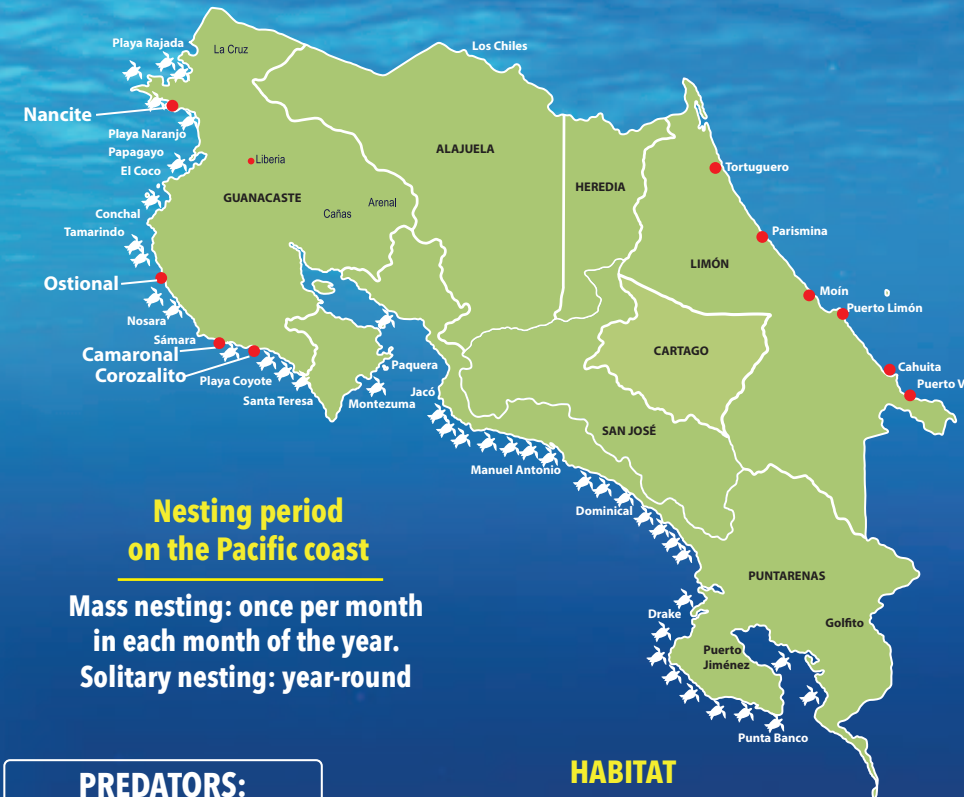
Plastron

Four inframarginal scutes with pores.

Coloration dorsal side is brown with amber-colored streaks in adults; ventral side has hues of pale yellow to white, sometimes with black spots (particularly in specimens on the Pacific).



Average length in Costa Rica:
66 cm to 72 cm



Nesting period on the Pacific coast

Mass nesting: once per month in each month of the year.
Solitary nesting: year-round

Nesting period on the Pacific coast (mass nesting)

Every month, but especially during the rainy season (June to November) in Nancite and Ostional



This is the only species able to come together and organize their nesting in groups, which are called *arribadas*. In Costa Rica, these *arribadas* occur in Ostional and Corozalito.

PREDATORS:

Eggs and newborns:



Adults:



HABITAT

Like most sea turtles, olive ridley sea turtles have a complex life cycle that requires a series of geographically separate areas and multiple habitats. Females nest on sandy coastal beaches, from where their newborns emerge and enter the sea to continue their development. They remain in a pelagic phase, passively traveling on ocean currents that take them away from the areas of their birth, with juveniles sharing habitats with adults until reaching sexual maturity. Reproductively active males and females migrate to the coastal zones and congregate near the nesting beaches.



MATING

The species has three modes of reproduction: **mass nesting, solitary nesting and a mixed strategy**. The first method is a massive, simultaneous mass nesting behavior that can include hundreds of thousands of females over a period of several days. This occurs in less than a dozen places around the world, including the Ostional National Wildlife Refuge, Nancite in Santa Rosa National Park and Corozalito in Nandayure, Guanacaste. The most common form of nesting is dispersed or "solitary" nesting, with no apparent links between the individual events. In some areas, a mix between these two nesting behaviors can be observed.

NESTING DATE



Mass nesting: Every month, but especially during the rainy season (June to November) in Nancite and Ostional

Solitary: Year-round

DIET



Omnivorous
Marine plants, lobsters, shrimp, fish, jellyfish, snails, algae.

GEOGRAPHIC DISTRIBUTION



Olive ridley sea turtles have a circumtropical distribution, nesting in all tropical seas with the exception of the Gulf of Mexico, and with migratory routes in tropical and some subtropical regions.

CONSERVATION STATUS



Vulnerable

THREATS



Egg poaching, plastic bags, bycatch, coastal development, sale, solid and liquid waste

AGE



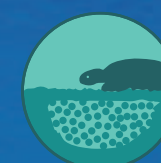
Estimated life expectancy of **50 years**

SEXUAL MATURITY



Reached at **13 years of age**.

AVERAGE NEST SIZE



110 eggs per nest

NESTS PER SEASON



Two per season.

Nesting interval: 26-66 days.

INCUBATION PERIOD



46-65 days

HAWKSBILL SEA TURTLE

One of the most highly exploited species by humans, the hawksbill turtle is captured for its meat and its attractive shell, which is used to make rings, combs, sunglasses, bracelets, necklaces, etc. Its eggs are also collected.

Eretmochelys imbricata

Tortuga Carey

Shell

Oval, with a markedly serrated posterior margin and with thick, imbricated (overlapping) scutes, except in newborns and some adults; 4 pairs of costal scutes.

Head:

relatively narrow; width of up to 12 cm; straight beak similar to a bird's; two pairs of prefrontal scales.

Weighs up to **80 kg** with an average weight of **60 kg**

Plastrón

Four pairs of inframarginal scutes without pores.

Extremities

Front flippers of medium length compared to other species; two claws on each flipper.

Coloration dorsal side is brown with amber-colored streaks in adults; ventral side has hues of pale yellow to white, sometimes with black spots (particularly in specimens on the Pacific).



Nesting period on the Caribbean coast:

May to November:
 Barra del Colorado, Tortuguero, Parímina, Pacuare, Matina, 12 millas, Negra, Cahuita, Moín, Gandoca and Uvita.



Average length in Costa Rica:
85,97 cm to 90 cm



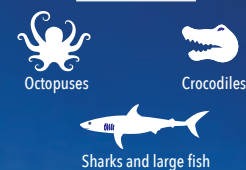
Its diet consists of sea sponges, jellyfish, invertebrates and other smaller organisms that live on the sea floor.

PREDATORS

Eggs and newborns:



Adults:



The hawksbill sea turtle is the rarest of the species found in Costa Rica. Though there is a resident colony that lives in Golfo Dulce, they are difficult to spot due to the small size of the population and endangered status.

Feeding zones: internal part of the Gulf of Nicoya, rocky reefs of Cabo Blanco, Coyote, Central Pacific and the internal area of Golfo Dulce. In Costa Rica the nesting of hawksbill turtles occurs sporadically along the Pacific coast. Nesting females have also been reported in the northern Pacific beaches, including Isla San José, Lagartillo, Avellanas, Punta Banco, Caletas and Caña Blanca.



NESTING DATES



Caribbean:
 May to November
Pacific:
 May to January

DIET



Omnivorous
 Sea sponges in large quantities, algae, marine worms, mollusks, seagrass and mangroves.

MATING



Mating events occur every two or three years in shallow waters.

GEOGRAPHIC DISTRIBUTION



The tropical and subtropical coastal waters of the Pacific, Atlantic and Indian Ocean.

CONSERVATION STATUS



Critically endangered

THREATS



Egg poaching, plastic bags, bycatch, coastal development, solid and liquid waste. Trade in products made from hawksbill turtle shells is a major problem in many countries, and continues to be a widespread threat in the Americas, Asia and parts of Africa.

AGE



Estimated life expectancy of **30 to 50 years**

SEXUAL MATURITY



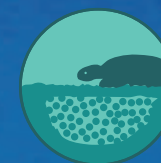
Reached at **20 years of age or later.**

HABITAT



Its marine environment is surrounded by coral reefs with a large quantity of sponges, algae and seagrass. It is also located close to rocky areas, sandbanks and mangroves; turtles can rest in caves and underneath rocks.

AVERAGE NEST SIZE



155 eggs per nest.

NESTS PER SEASON



5 clutches per season.

Nesting interval:
 14-16 days

INCUBATION PERIOD



47-75 days.

LOGGERHEAD SEA TURTLE

Except for their migrations, during which they cross the open sea, they generally live in shallow waters with coral reefs, seagrass beds and algae.

Caretta caretta

Tortuga cabeza, Tortuga caguama

Shell
Moderately wide; five pairs of costal scutes

Coloration
Dorsal side is reddish brown in adults; ventral surface yellow to orange in adults. Measures approximately 1 meter and can weigh up to 150 kg.

Head:
Large and triangular. Width up to 28 cm; two pairs of prefrontal scales.

Weights up to **180 kg** in the western Atlantic, and up to **150 kg** in Australia; under **100 kg** in the Mediterranean.

Plastron
Three pairs of inframarginal scutes without pores. Yellow-brown in color.

Extremities
Frontal flippers are relatively short in comparison to those of other species; two claws on each flipper.

Average length in Costa Rica:
87 cm



Nesting period on the Caribbean coast

May to August:
Barra del Colorado, Tortuguero, Parímina, Pacuare, Matina, Moín, 12 Millas, Negra, Cahuita, Gandoca.

Pacific
No nesting

This turtle is well-adapted to its marine surroundings.

It can be found exclusively in the reefs of Cahuita and Gandoca-Manzanillo on the country's Caribbean coast. There are no loggerhead turtles in the Costa Rican Pacific.

In addition to its large head, this species is known for climbing trees near rivers and streams.

Due to the large size of its head, it cannot be hidden inside the shell.

PREDATORS

Eggs and newborns:

- Ants
- Worms
- Crabs
- Seagulls
- Beetles
- Flies

Adults:

- Orcas
- Sharks

This species has been found as far as 240 km into the open sea. Though it is not commonly found nesting in Costa Rica, nests have been reported in Tortuguero. Globally, its distribution includes the Pacific Atlantic and Indian Ocean, and can be found in Washington state, Japan, India, Kenya, the British Isles, southern Chile, Australia, South Africa, and even Argentina. It is also found in the Caribbean and Mediterranean Seas. It migrates long distances from its feeding sites to its nesting beaches.



Photo: tortugueroinfo.com

NESTING DATE	DIET	MATING	GEOGRAPHIC DISTRIBUTION	CONSERVATION STATUS	THREATS	AGE	SEXUAL MATURITY	HABITAT	AVERAGE NEST SIZE	NESTS PER SEASON	INCUBATION PERIOD
<p>Caribbean: May to August</p> <p>Pacific: No information</p>	<p>Omnivorous from when they are newborns to juveniles, but become carnivorous as adults (crabs, snails, sponges, jellyfish, urchins, fish eggs, shrimp)</p>	<p>Mating is somewhat violent: males tend to bite the female's neck or flipper to be accepted. If the female rejects the male, she covers her cloaca and swims away towards the seafloor.</p>	<p>Loggerhead turtle are distributed globally, in the subtropical and temperate areas of the Pacific, Indian and Atlantic Oceans and the Mediterranean Sea.</p>	<p>Endangered</p>	<p>Egg poaching, plastic bags, bycatch, coastal development, sale, solid and liquid waste.</p>	<p>Estimated life expectancy of 47-67 years</p>	<p>Reached betweenage. 10 and 39 years of age</p>	<p>Commonly found in coastal waters, river deltas and coral reefs. Can dive for 15-30 minutes.</p>	<p>100-130 eggs per nest (Caribbean)</p>	<p>4 clutches per season, Nesting interval: 15 days</p>	<p>56-80 days</p>