



MEET THE

COSTA RICA SEA TURTLES

DID YOU KNOW?

Olive Ridley turtles often nest in high numbers when the moon cycle and weather is right.



OLIVE RIDLEY TURTLE

Scientific name: Lepidochelys Olivacea

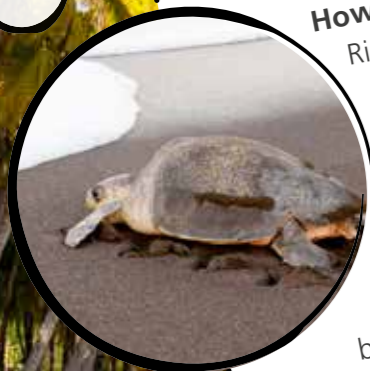
Average life span in the wild: 50 years

IUCN Status: Vulnerable (Although they are considered the most abundant of all sea turtle species, their numbers are dramatically decreasing)

Size: They are smaller than other sea turtles, averaging 60 – 70 cm in length and weighing around 90lbs. That's about the length of a 6-month-old baby but the weight of a 12-year-old!

How did they get their name? The Olive Ridley turtle is named after the greenish colour of its shell.

Fun Fact: Olive Ridley turtles often nest in high numbers when the moon cycle and weather is right. This is referred to as an arribada. When this occurs, hundreds and even thousands of turtles can come to the beach to nest over the course of a few nights.



Sea turtles originated in the Late Jurassic period, more than 150 million years ago. This means that turtles are one of the few species on earth that would have existed with dinosaurs.

There are seven main species of turtles and each of them have their own unique diet, size and characteristics. Unfortunately, six out of the seven species are now considered vulnerable or seriously endangered. Because turtles are migrating animals, who can travel as far as 1,400 miles in warm seas between nesting and feeding grounds, many species of turtles have graced the shores of Costa Rica. Most commonly spotted in Costa Rica are the Leatherback, Green, Hawksbill and Olive Ridley species of sea turtle.



Turtles can travel as far as 1,400 miles in warm seas

LEATHERBACK TURTLE

Scientific name: Dermochelys Coriacea

Average life span in the wild: 45 years

IUCN Status: Endangered

Size: These are the largest of all turtles on earth. The average Leatherback is around 1.8m long and weighs around 1,000lbs. The largest ever Leatherback turtle found was nearly 3m long and over 2,000lbs. That's 500lbs more than the average grizzly bear!

How did they get their name? While all other sea turtles have hard, bony shells, the inky-blue carapace (shell) of the Leatherback is somewhat flexible and almost rubbery to the touch – hence Leatherback!

Fun Fact: Leatherbacks could swim alongside some of the deepest-diving whales. They are capable of diving at least 3,900 feet!



GREEN TURTLES

Scientific name: Chelonia Mydas

Average life span in the wild: 80+ years

IUCN Status: Endangered

Size: Their average weight is up to 700lbs and are up to 1.5m long. This means that whilst they are only as long as a child their weight is over 3 times an average grown man!

How did they get their name? Despite the name, their shells are actually dark brown to black in colour. The green description comes from the colour of their cartilage and fat and it is thought to be green because they are herbivores and only eat plants such as seagrass and algae. The green colour can only really be found underneath their shells.

Fun Fact: Green turtles have flippers that resemble paddles which makes them powerful swimmers and therefore they're often labelled the most graceful of the world's sea turtle species. Crush, the sea turtle from Finding Nemo is based on a Green turtle!



HAWKSBILL

Scientific name: Eretmochelys Imbricata

Average life span in the wild: 30-50 years

IUCN Status: Critically endangered

Size: They weigh between 100 and 200lbs and are between 0.5 and 1m long. This is about the same weight as 13 bowling balls and the same length as an average guitar!

How did they get their name? They are named for their narrow, pointed beak.

Fun fact: While young, their carapace (shell) is heart-shaped, and as they mature it lengthens.



Sea turtles can't retract their heads into their shells but their skulls are fully roofed over with heavy bone that fits neatly under the shell protecting their necks.





THE

BIG THREE THREATS



1 THE RISE IN SEA LEVEL

...will impact sea turtle's nesting beaches. Sea turtles' memories are "imprinted" with a magnetic map of the sandy beach where they hatch. This gives them the unique ability to return to that same site decades later to repeat their ancient nesting ritual. With melting polar ice caps and rising sea levels, these beaches are beginning to disappear and thus, so are their nesting sites too.



2 THE INCREASE IN SEA TEMPERATURE

...will likely lead to an increase in the temperature of the sand in which eggs incubate. Temperature can actually determine the gender of the hatchling in a nest. Typically, the eggs in the lower, cooler, part of the nest will become males, while the eggs in the upper, warmer, part of the nest will become females. With increasing nest temperatures, scientists predict that there will be more female than male hatchlings, creating a significant threat to genetic diversity.



Find more resources at discover-education.co.uk

3 PLASTIC!

Recent research revealed that there is a 20% chance that a sea turtle will die after consuming just one piece of plastic. This risk increases to 50% for 14 pieces of plastic. With a 2015 study estimating that more than 15 trillion pieces of plastic are in the ocean, the risk of death by plastic for sea turtles and other marine creatures is one of the biggest threats to their survival.



STATUS

The International Union for Conservation of Nature (IUCN) provide the worlds most comprehensive inventory of the global conservation status of biological species.

All species fit into 9 categories:

- **Not evaluated (NE)**
- **Data Deficient (DD)**
- **Least Concern (LC)**
Unlikely to become extinct in the near future.
- **Near threatened (NT)**
Close to being at high risk of extinction in the near future.
- **Vulnerable (VU)**
Considered to be at high risk of unnatural (human-caused) extinction without further human intervention.
- **Endangered (EN)**
Very high risk of extinction in the wild.
- **Critically endangered (CR)**
In a particularly and extremely critical state.
- **Extinct in the wild (EW)**
survives only in captivity, cultivation and/or outside native range, as presumed after exhaustive surveys.
- **Extinct (EX)**
Beyond reasonable doubt that the species is no longer surviving.

OTHER THREATS INCLUDE

Entanglement in fishing gear

Consumption of their eggs

Coastal development

Illegal harvesting for meat, shell, oil cartilage, eggs and skin

Ocean pollution

Turtle shell trading

Discover the World Education

01737 218 807 | travel@discover-education.co.uk



THE IMPORTANCE OF A

COSTA RICA BEACH



Hawksbill turtle



Green turtle



Leatherback turtle

Costa Rica's coast hosts dozens of vital nesting beaches for sea turtles. These beaches are important for the survival of these species.

For a female turtle to give birth, she crawls up the beach in search of the perfect nesting spot. When she finds it, she uses her flippers to dig approximately 18 inches where she deposits the eggs. She will then crawl back into the sea. The whole process takes around 45 minutes!

These nests however, are not always a safe home for turtle eggs. Predators such as racoons, dogs and even humans dig up the nests to feed on the eggs. In fact, humans pose the greatest threat in some areas and although there are legal ways of sourcing turtle eggs, it is estimated that 6% of turtle eggs sold in Costa Rica are done so illegally.

For those that do hatch, they have a **1 in 1000 chance of surviving**. It is a dangerous race to the sea as birds and other predators try to feed on them.



From home



- ✓ Replace existing lightbulbs with CFL (Energy Saving) bulbs and turn off the lights when you aren't using them.
- ✓ Reduce your CO2 emission by using public transport or walking when possible.
- ✓ Use energy efficient or sustainable source run appliances and turn them off when you're not using them.
- ✓ Minimise waste and put food in compost bins.
- ✓ Minimise your use of water.
- Reduce, reuse, recycle! The more we recycle the less likely life-threatening plastic and waste will end up in the sea and on beaches!

- Tell a friend! As a wider group we stand more chance influencing change than as an individual. Telling a friend about these issues helps to spread concern and get the message heard!
- Look out for the blue MSC label when buying fish, if it doesn't have it, it hasn't necessarily been sustainably sourced. Destructive and aggressive methods of fishing can lead to sea turtles and other marine animals accidentally being caught up in the net.



WHAT CAN BE DONE



Rubbish on the beach



Measuring the length of a leatherback turtle

From Costa Rica

- ✓ When visiting these locations, avoid purchasing decorative turtle shells. They come at a deathly cost as the Hawksbill turtle has been hunted to the state that it is close to extinction.
- ✓ Join efforts to plant vegetation near beaches to help create better nesting habitats.
- ✓ Take part in a local beach clean-up!
- ✓ If you visit a beach at night, turn off, shield,

- or redirect lights visible from the beach. Lights disorient hatchling sea turtles and discourage nesting females from coming onto the beach to lay their eggs.
- ✓ Fill in holes and knock down sandcastles before you leave the beach. They can become obstacles for nesting turtles or emerging hatchlings.
- ✓ Volunteer for a turtle conservation programme such as Pacuare Reserve.

PACUARE LEATHERBACK

TURTLE RESERVE

We spoke to Mrs Heike Russell who works for the Pacuare Turtle Reserve about the importance of their work...

Why is the conservation of turtles so important in the local area?

The leatherback turtles, a species as old as the dinosaurs, are on the list of species in danger of extinction. Poaching of their nests, beach erosion, climate change and the pollution of our oceans have contributed to the decline of over 50% of the Atlantic Leatherback population in just the last 15 years. All sea turtles play an important ecological role on our planet: they help control the jellyfish populations in the oceans, transfer and deposit important nutrients on beaches and even help to conserve coral reefs. It takes about 12 to 15 years for a Leatherback turtle to reach maturity, and only 1 in a 1000 baby turtles are believed to survive to this age.

Why do you encourage students to come to Costa Rica to volunteer at the Reserve?

You will live a unique and unforgettable experience at Pacuare Reserve where you will become immersed in the life of an active, working conservation station. Here, you will live in close contact with nature, learn and contribute, hands-on, in conservation efforts and actively help save an endangered species. Only while "doing" do we truly understand the impact of our actions on our environment and the ecological consequences they produce. Imagine walking a deserted

beach at night with only the light of the stars above you and the sounds of the jungle and the sea on both sides and seeing a gigantic creature emerge from the depth of the oceans. A creature as old as the dinosaurs that has traveled thousands of miles and survived so many dangers to come home to nest. Your presence on this very beach will help protect her, her nest and her eggs. Imagine spending your days in the tropical jungle in a place with only solar power, away from the world as you know it, learning, living and helping preserve 2000 acres that provide a protected habitat for hundreds of species of wildlife. This type of experience will change your consciousness and it is our hope that you will take the lessons learned home with you to become a force of change for a better world in your own community. This past season over 900 adult turtles arrived at our beach. We protected 580 nests and over 48,000 eggs. This work could not be done without the manpower and economic contributions provided by students, volunteers and other visitors.

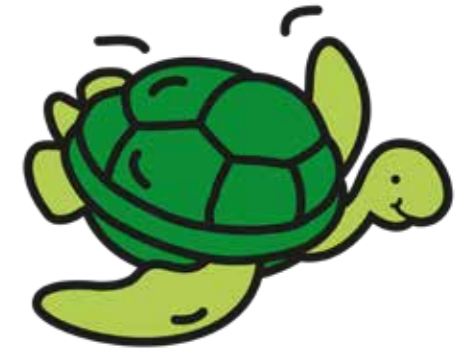
How does Pacuare Reserve protect turtles:

Pacuare Reserve has been protecting turtles for the last 30 years. At that time, almost all the nests were being robbed as the consumption of turtle eggs was and is still considered tradition in Costa Rica. Our sea turtle monitoring program includes many different aspects, including the nightly beach census. Small groups walk the beach at different intervals at night on the lookout for nesting turtles. This has resulted in a poaching rate of 0% in the 2019 Leatherback nesting season. We take the biometric data of the turtles, document the locations of the nests and relocate those nests that are in danger of being flooded. Every year, we build two hatcheries to relocate nests too. The hatching rate in this more controlled environment is more than double of those nests that are left in situ. This also allows us to monitor and time the liberation of hatchlings: giving

a greater number of baby turtles the chance to make it safely to the sea.

We also perform nest exhumations after a nest has hatched to count the shells, open those eggs that did not hatch to find out why, and we always find a few baby turtles that were left behind and could not make it out of the nest on their own. Additional research projects include the tracking of adults with satellite monitors and the weighing of some of the female adults.

In the 2019 season, 45% of all documented adult Leatherbacks that came ashore to nest along the Caribbean coast of Costa Rica arrived on the beach of Pacuare Reserve, making our 6km of beach the most important nesting site for the species in the country.



Leatherback baby turtles



Nigel Marvin and his team filming a nest hatching for an Animal Planet documentary



Heike Russell and visitor Tatiana Zuñiga about to liberate green turtles