



FIELD GUIDE

Sea Turtle Nesting & Hatchery Management



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MARINE CONSERVATION

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Partners



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ROHINI
NILEKANI
philanthropies

Post Hatching Data Collection

After 65 days, carefully dig open the nest while wearing gloves and masks to prevent contamination and exposure to harmful bacteria or fungi.

Nest contents can be categorised as:

- **Shells** -Number of hatched out empty shells
- **Emerged** - Hatchlings that have emerged from the nest
- **Live in Nest** - Live Hatchlings still within the nest
- **Dead in Nest** - Dead Hatchlings within the nest
- **Live hatchling in pipped*** egg
- **Unhatched eggs** -
Unhatched/undeveloped eggs with **no obvious embryo**
- Unhatched egg with **obvious embryo**

What are Sea Turtles ?

Sea turtles are marine reptiles belonging to the family Cheloniidae or Dermochelyidae, known for their long lifespans and migratory behaviours.

They are found in oceans around the world and are vital to marine ecosystems, helping maintain healthy seagrass beds and coral reefs.

India is home to five of these seven species: Olive Ridley Turtle, Green Sea Turtle, Leatherback Turtle, Hawksbill Turtle, Loggerhead Turtle.

**The Kemp's Ridley and Flatback Turtle have never been reported in India.*

Species

On both the East and West Coast of India, Olive Ridleys are found most commonly, followed by Green, Hawksbill and then Loggerheads. Leatherback Sea Turtles are primarily found in Andaman and Nicobar with a few incidental reports of being found on the mainland.



Olive Ridley
Lepidochelys olivacea



Hawksbill
Eretmochelys imbricata



Green
Chelonia mydas



Logger Head
Caretta caretta



2 Leatherback
Dermochelys coriacea

Sea turtles regularly grow more than 100 kgs with the heaviest recorded Leatherback being 914kg.

Olive Ridleys are the smallest species found in India and can grow upto 50kg

Data Collection

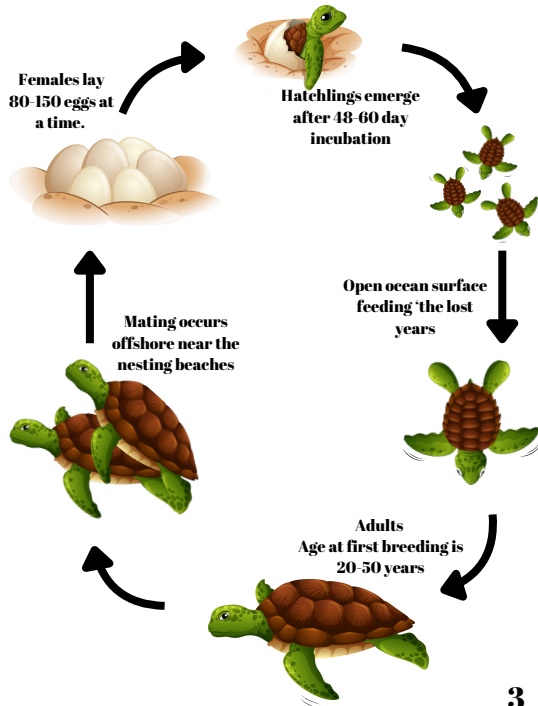
- The collection of accurate data is a very important part of any conservation programme.
- Information on the number of nesting turtles per season, or at least the number of nests (with eggs) on a given nesting beach provides information on population trends.

Nest No.	Date of Nesting	Location	Temp of sand	Depth of Nest	Relocated (Yes/ No)	Clutch size, if Relocated	Name of the forest officer

Hatchling Release Procedure

- Store hatchlings safely if release is delayed:
- Keep them in a soft, damp cloth or sack in a cool, dark place.
- **Never place hatchlings in water** containers, as this triggers swim frenzy behaviour, depleting vital yolk reserves needed for survival.
- **Release them as soon as possible** to ensure they retain sufficient energy for swimming past the breakers.

Life Cycle of Sea Turtles



Nesting Habits of Sea Turtles

- Sea turtles nest on sandy beaches in tropical and subtropical regions.
- Females typically come ashore at night, crawling above the high tide line to dig nests about two to three feet deep using their hind flippers.
- Once a sea turtle starts laying eggs, they enter a 'nesting trance,' making them less likely to be disturbed. Once done, the females cover the nest with sand and return to the sea.
- Along India's west coast, nesting usually occurs between December and April.
- Most females nest multiple times in a season, with about two weeks between each nesting event.

Hatchling Release Procedure

Anticipate hatching: Hatchlings may begin emerging as early as day 45 due to temperature variations. Hatching can also be identified by the sand surface above the nest caving in.

Allow natural imprinting: Let hatchlings crawl across the beach to imprint on their natal site. Avoid this step if the sand is too hot or the sun is bright.

Release hatchlings into the sea immediately after emergence, in groups, at different times of the night and from varied beach points to prevent predators from forming feeding stations.

Monitoring Nests

- **Monitor the nest twice daily** throughout the incubation period, which lasts approximately 60 days (2 months).
- **Observe and document changes** within the marked nesting area, including shifts in sand, signs of disturbance, or other notable activity.
- **Photograph regularly** to maintain a detailed visual record of the nest's condition, including evidence of human activity or predators.
- **Initiate night monitoring** upon noticing signs of hatchlings to ensure they safely make their way to the ocean without delay.

Sea Turtle Species Identification from Track Marks



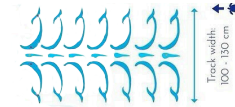
Logger Head
Caretta caretta

- Alternating flipper marks
- No tail-drag marks



Green
Chelonia mydas

- Parallel flipper marks
- Straight well-defined tail-drag marks



Hawksbill
Eretmochelys imbricata

- Shallow alternating flipper marks
- Wavy or no tail-drag marks



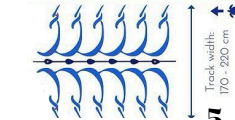
Olive Ridley
Lepidochelys olivacea

- Very light alternating flipper marks
- Very light or no tail-drag marks



Leatherback
Dermochelys coriacea

- Deep & broad parallel flipper marks
- Straight, well-defined tail-drag marks



Regulations

Laws that govern marine turtle conservation in India include:

- Wildlife (Protection) Act - 1972
- Ratification of the CITES - 1976
- Ratification of Bon Convention - 1981
- Environment (Protection) Act - 1986
- The Biological Diversity Act, 2002
- The Wildlife Protection Amendment Act-2002
- The Marine Fishing Policy, 2004
- Marine Fisheries (Regulation and Management) Bill, 2009
- Coastal Regulation Zone Notification, 2011
- State Fisheries Policies and Laws

All the five species of sea turtles in India, are legally protected under Schedule I of the Wildlife Protection Act, 1972 and Appendix I of the CITES Convention which prohibits trade in turtle products.

Relocation Of Nests



Count the number of eggs as they are transferred.



Dig the new nest to match the size and shape of the original. The shape should resemble a clay pot with a narrow opening.



Inspect the new nest for obstructions like plant roots or crab burrows.



Place the eggs carefully in the same orientation and order as they were removed. As temperature and polarity can effect the sex ratio.



Cover the eggs with a thin layer of moist sand, followed by a layer of dry sand. Set by a barricade and label the nest.

Relocation Of Nests

Relocating sea turtle nests is discouraged unless absolutely necessary.

If relocation is necessary, eggs should ideally be moved within **2-3** hours of nesting. Using the following guidelines



Wear gloves and masks when relocating nests.



Use a small container with moist sand above and below the eggs during transportation.



Mark each egg on the upper surface with an arrow pointing toward the ocean to keep its original orientation.

Threats to Sea Turtle Nests

Globally sea turtle populations face significant threats from human activities-



Coastal Development



Factory/Sewage Effluents



Poaching of Eggs and Sea Turtles

- Hatchery and nest monitoring is essential in areas with severe threats to eggs and hatchlings
- Hatcheries can also act as conservation tool to educate and engage local communities in conservation efforts.

Reporting

- **Avoid Disturbing the Nest:** Stay at a safe distance and minimise movement near the site. Do not touch eggs or the surrounding sand.
- **Mark the Nest:** Use a stick with a note or coloured cloth for easy reference.
- **Record Details:** Note landmarks, GPS coordinates (if possible), or take photos to aid relocation.
- **Report It:** Contact the local Forest Department or ReefWatch Marine Conservation.

Setting up barricades

- Build a **3 x 3 ft enclosure** using a **4-foot-high fiber mesh** for aeration. Secure with 4-foot-long sticks, burying 1 foot into the sand for stability.
- **Avoid:** Metal materials (disrupts magnetic cues) and fungal-infected sticks (harms eggs).
- **Cover:** Use fishing nets on top to protect against aerial predators.
- **Label:** Clear label with date of nesting, nest number and number of eggs (relocated nest)



