

Olive Ridley Turtles and Their Annual Nesting on the Odisha Coast

Introduction

The Olive Ridley turtle (*Lepidochelys olivacea*), one of the most abundant sea turtle species, holds great ecological and conservation significance in India. Odisha, with its long coastline and unique beach ecosystems, is one of the world's most important mass nesting sites for these marine reptiles. The annual arribada (mass nesting phenomenon) at Odisha's Gahirmatha, Rushikulya, and Devi River mouth beaches attracts global attention, making it a key area for turtle conservation.

Olive Ridley Turtles: An Overview

Olive Ridley turtles are small, with an average shell length of about 60–70 cm and a weight ranging from 30–50 kg. Their name comes from their olive-green colored shell. These turtles are primarily found in the warm waters of the Pacific, Atlantic, and Indian Oceans. They are known for their synchronized mass nesting behavior, called 'arribada,' where thousands of females come ashore simultaneously to lay eggs.

Importance of Odisha's Coast for Olive Ridley Turtles

1. Gahirmatha Beach - The Largest Nesting Site

Gahirmatha Marine Sanctuary is the world's largest rookery for Olive Ridley turtles. This protected area provides a safe habitat for nesting, despite threats from human activities. Every year, thousands of turtles arrive at Gahirmatha, making it the most significant nesting ground globally. The Odisha Forest Department and conservation organizations actively monitor the area, implementing strict protective measures to safeguard the nesting process.

2. Rushikulya Rookery - A Growing Nesting Ground

Rushikulya, located in Ganjam district, is an emerging nesting site where the number of turtles has been increasing due to conservation efforts. Unlike Gahirmatha, where nesting occurs on a protected marine sanctuary, Rushikulya is an open beach, making conservation efforts crucial. Increased community participation, improved monitoring, and habitat protection have contributed to the growing number of turtles arriving for nesting. The site has seen a significant rise in nesting numbers over the years, with thousands of turtles laying eggs annually.

3. Devi River Mouth - Another Important Nesting Zone

Although smaller than Gahirmatha and Rushikulya, the Devi River mouth is also a significant nesting area. Conservationists monitor this site closely to ensure the safety of nesting turtles. Due to its proximity to human settlements, this location is more vulnerable to threats such as predation, pollution, and habitat destruction. Efforts such as night patrolling, awareness campaigns, and hatchery programs have been initiated to improve the survival rate of hatchlings and protect the nesting grounds from human interference.

The Arribada Phenomenon: A Natural Wonder

Every year, between November and May, thousands of Olive Ridley turtles migrate from deep ocean waters to Odisha's coast for breeding. Nesting peaks between January and March. Female turtles lay around 100-150 eggs per clutch in a pit they dig in the sand. The eggs hatch in about 45-60 days, and hatchlings instinctively move toward the sea, guided by moonlight.

Endangered Olive Ridley Turtles Reappear at Odisha Beach After 33 Years

Endangered Olive Ridley turtles have reappeared at Ekakulanasi island in Gahirmatha marine sanctuary in Odisha for mass nesting after a gap of 33 years, an official said.

"The idyllic beach on the island had undergone sea erosion, leading to the beach profile getting truncated. However, the beach is currently elongated as it has started accreting since 2020. This has turned out conducive for turtles to turn up en masse to lay eggs," Assistant Conservator of Forests Manas Das said.

Das said the marine species had last appeared at the beach in 1992 when 3 lakh turtles had laid eggs.

"It's an exceedingly positive development in the turtle protection initiative that is underway under the stewardship of Odisha Forest Department," he said.

The profile of the Ekakulanasi beach, which was around 4 km long earlier, has now been elongated to 8 km following the natural process of accretion, which is a process of sediments returning to the beach. The nesting beach played host to 1.7 lakh turtles over the last two days, he said.

The beach, apart from Nasi-2 beach, has emerged as the favourite nesting site, the official said, adding 2.63 lakh turtles have emerged on Nasi-2 beach to dig pits and lay eggs.

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The Olive Ridley turtles turn up in millions for mass nesting along the Odisha coast every year. Gahirmatha beach in Kendrapara district is acclaimed as the world's largest-known nesting ground of these turtles.

Apart from Gahirmatha, these threatened aquatic animals turn up at Rushikulya river mouth and Devi river mouth for mass nesting.

After egg-laying, the turtles leave the nesting ground to stride into the sea waters. Hatchlings emerge from these eggs after 45-50 days.

It is a rare natural phenomenon where the babies grow without their mother, the official added.

Threats to Olive Ridley Turtles in Odisha

Despite legal protections, Olive Ridley turtles face several threats:

1. Fishing Activities and Bycatch Mortality

Trawling and gillnet fishing operations cause thousands of turtle deaths each year. Many turtles get caught in fishing nets and drown due to their inability to surface for air.

2. Coastal Development and Habitat Destruction

Urbanization, sand mining, and beach lighting disturb nesting sites, making it difficult for females to lay eggs and for hatchlings to reach the sea.

3. Predation and Poaching

Natural predators such as dogs, jackals, and birds prey on turtle eggs and hatchlings. Human poaching for meat and eggs further threatens their population.

4. Climate Change and Rising Sea Levels

Rising temperatures can affect hatchling sex ratios, as warmer sand temperatures produce more females, leading to an imbalanced population. Erosion due to climate change also destroys nesting beaches.

Conservation Efforts in Odisha

1. Legal Protection and Marine Sanctuaries

The Olive Ridley turtle is protected under the Wildlife Protection Act, 1972, and listed in Schedule I, ensuring the highest level of protection. Gahirmatha Marine Sanctuary plays a crucial role in conservation.

2. Turtle Excluder Devices (TEDs)

The Indian government mandates the use of TEDs in fishing trawlers, which allow turtles to escape while retaining the catch.

3. Community Participation and Awareness Programs

Local NGOs and government agencies conduct awareness campaigns, involving coastal communities in conservation efforts.

4. Beach Patrolling and Hatchery Programs

Forest officials and volunteers patrol beaches to protect nests and relocate eggs to hatcheries when necessary.

Conclusion

Odisha's coastline plays a crucial role in the survival of Olive Ridley turtles. While significant conservation efforts are underway, challenges such as fishing-related deaths, habitat destruction, and climate change persist. Strengthening protective measures, enforcing stricter regulations, and increasing community involvement can ensure the long-term survival of these remarkable marine creatures.

FAQs on Olive Ridley Turtles and Odisha Coast

1. Why is Odisha important for Olive Ridley turtles?

Odisha hosts three major nesting sites—Gahirmatha, Rushikulya, and Devi River mouth—where thousands of turtles arrive for mass nesting each year.

2. When does Olive Ridley nesting occur in Odisha?

Nesting takes place between November and May, with peak activity between January and March.

3. What are the major threats to Olive Ridley turtles in Odisha?

Fishing activities, habitat destruction, poaching, and climate change are the primary threats.

4. What steps are being taken to protect Olive Ridley turtles?

Conservation measures include marine sanctuaries, TEDs in fishing nets, community awareness programs, and beach patrolling.

5. How can people help in Olive Ridley conservation?

Avoiding littering on beaches, supporting conservation programs, reporting illegal activities, and spreading awareness can contribute to their protection.

By ensuring a balanced approach between conservation and sustainable development, Odisha can continue to be a haven for the Olive Ridley turtles for generations to come.

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