



# **VISAKHA SOCIETY**

For

# **PROTECTION and CARE**

OF

# **ANIMALS**



## **OLIVE RIDLEY**

## **SEA TURTLE PROTECTION PROGRAMME**

## **2014-2015**

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## ACKNOWLEDGEMENTS

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Last but not the least; we would like to thank the brave OLIVE RIDLEY SEA TURTLES which make the long and arduous journey from MEXICO to nest in our land's beaches.



## SUMMARY OF REPORT

This report is written in order to educate the reader about the endangered Olive Ridley sea turtle, a species of marine life that conducts its unique and famous nesting ritual on Vizag's shores; and the efforts in place by the Visakha Society for the Protection and Care of Animals (VSPCA) to protect it. All data is collected, maintained and interpreted by the VSPCA. Over the last few years, rapid development along the Vizag coast and increasing pollution levels in our city have been causing severe deterioration of our environment, making it utterly difficult for sea turtles to nest here. There have been cases of mother turtles being unable to find a proper place to lay their eggs on account of horrifically dirty conditions in our polluted beach, and so they lay eggs in the water itself, with no hope for eggs to survive. It is tragic because this constrains our efforts to conserve this highly endangered marine creature that has been around in our planet from the time of the dinosaurs. The mighty dinosaurs had become extinct, their kind unable to survive the earth, whereas these humble creatures of the sea continued, until today.

According to the Marine Turtle Specialist Group (MTSG) of the IUCN, there has been a 50% reduction in population size since the 1960s. Although some nesting populations have increased in the past few years, the overall reduction is greater than the overall increase. Expansion of the shrimp trawling fishery in the eastern Indian Ocean in the mid-1970s has resulted in numerous olive ridley deaths. Over 10,000 olive ridley carcasses a year have been counted on the Orissa coast since 1999. These carcasses have largely been attributed to the shrimp trawl fishery, but trawling is not the only source of olive ridley mortality in the eastern Indian Ocean.



## ABOUT VSPCA

VSPCA (Visakha Society for the Protection and Care of Animals) is an animal welfare organization based in Visakhapatnam, Andhra Pradesh that was founded on 30 June 1996. We run numerous programs for the rescue, protection, care and treatment of all kinds of animals, both domestic and wild. VSPCA's mission is to save and protect animals, to promote an environment that is an oasis without suffering, to teach humane lifestyle (which is ideally a vegan diet) and farming to our area and throughout India.

VSPCA works to stop the illegal trade in internationally-protected sea turtles, rescues cows and water buffalo too old or injured to be kept by their previous owners, as well as provides permanent happy sanctuary to hundreds of dogs, cats, birds, monkeys, horses, rabbits, tortoises, ducks and other animals who had been suffering severe abuse or neglect at its two shelters. We perform Animal Birth Control (spay/neuter/vaccinate) operations daily to 20 dogs, also cats.

We are responsible for animal rescues in our area and get calls day and night. We currently have over 1500 large and small animals rescued from all types of abuse and exploitation in the sanctuary near the city as well as the new "Kindness Farm".

We have provided spay and neuter, as well as vaccines and health checks to more than 100,000 street dogs. The population of street dogs in this area is getting smaller, healthier and ever shrinking as a result of this wonderful program. The community based Sea Turtle Protection Program conducted on the coasts of VIZAG and BHEEMUNIPATNAM is one of our oldest programs, having started around the time of conception of the organization itself. We have several achievements in the field of Animal Welfare. More information on this can be found on our website [www.vspca.org](http://www.vspca.org)



# Olive Ridley Sea Turtles

## **FAST FACTS**

Olive ridleys get their name from the coloring of their heart-shaped shell, which starts out gray but becomes olive green once the turtles are adults. They have one to two visible claws on each of their paddle-like flippers.

**Type:**

Reptile

**Diet:**

Omnivore

**Average life span in the wild:**

50 years

**Size:**

2 to 2.5 ft (62 to 70 cm)

**Weight:**

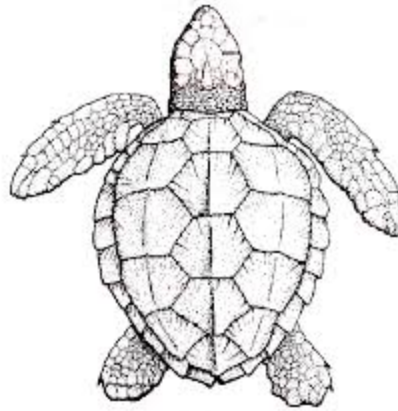
Up to 100 lbs (45 kg)

**Protection status:**

Endangered

**Did you know?**

Male olive ridleys can be distinguished from females by their tails, which stick out beyond their carapace.



## **BIOLOGY**

Olive ridley turtles have powerful jaws which enable them to feed on a variety of crustaceans such as shrimp and crabs, molluscs, tunicates and fish.

These turtles nest solitarily and in arribadas (in group), sometimes twice in each season. Arribadas may be precipitated by such climatic events as a strong offshore wind, or by certain phases of the moon and tide, but there is a major element of unpredictability at all arribada sites. This unpredictability and the apparent ability of gravid females (distended with or full of eggs) to wait for weeks while holding fully-shelled eggs, may be an important aspect of the survival advantage of arribada-formation, a phenomenon usually interpreted as one that evolved as a predator-saturation device.

The turtles mate in offshore waters during the breeding season, from January to May. Reproductive aggregations or patches occur off the mass-nesting beaches, and are between 50 and 60 sq. km in size. After successful mating, males return to their feeding grounds. The



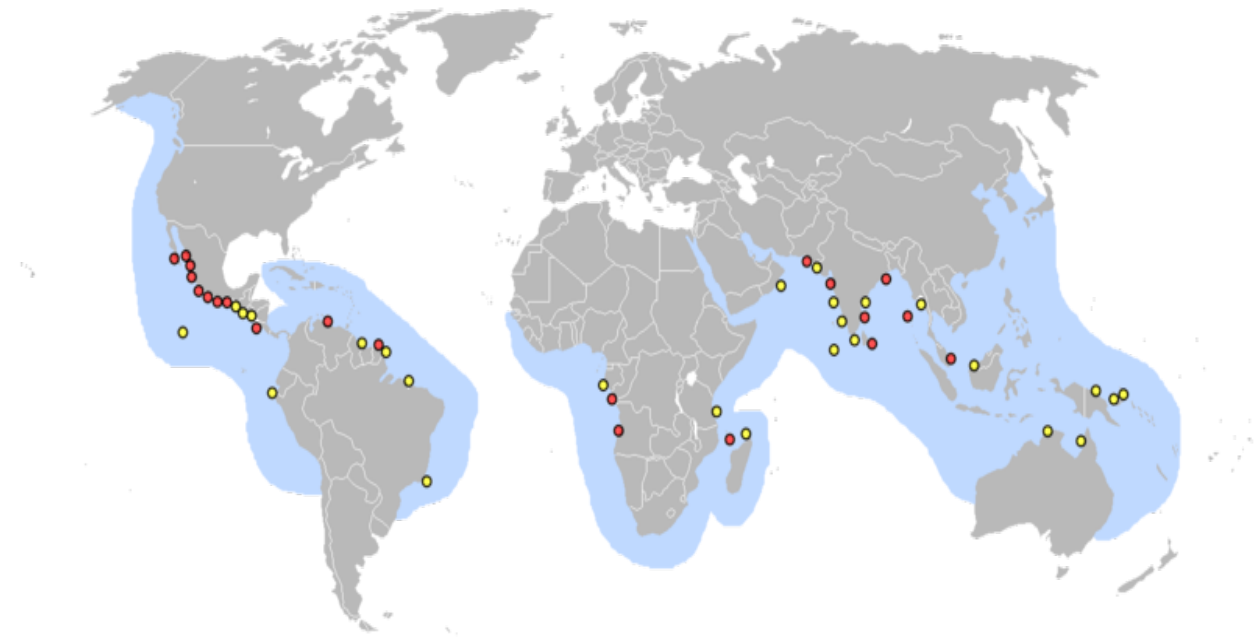
females come on to the beach to nest. Females nest every year, and often more than once in a season. Clutch sizes are usually about 100 to 120 eggs per nest and eggs measure about 4 cm in diameter. The eggs hatch after 45 to 50 days of incubation after which the hatchlings emerge and find their way to the ocean. Hatchlings weigh less than 30g and measure about 3.8 cm in length. Once hatchlings reach the sea, they are carried by currents across ocean basins for several years till they move to nearshore developmental habitats, and eventually to adult feeding grounds.

## **DISTRIBUTION**

Olive ridleys occur globally and are found mainly in tropical regions of the Pacific, Indian, and Southern Atlantic Oceans. They are primarily pelagic, spending much of their life in the open ocean, but may also inhabit continental shelf areas and venture into bays and estuaries.

Arribadas (group nesting) occur in Mexico, Nicaragua, Costa Rica, Panama, Australia, parts of Africa, and a few beaches along the coast of India. The largest ones occur in Costa Rica, Mexico, and India. Other solitary nesting areas include Guatemala, Brazil, Myanmar, Malaysia, and Pakistan. Worldwide, they nest in approximately 40 countries.

## **ON THE WORLD MAP**

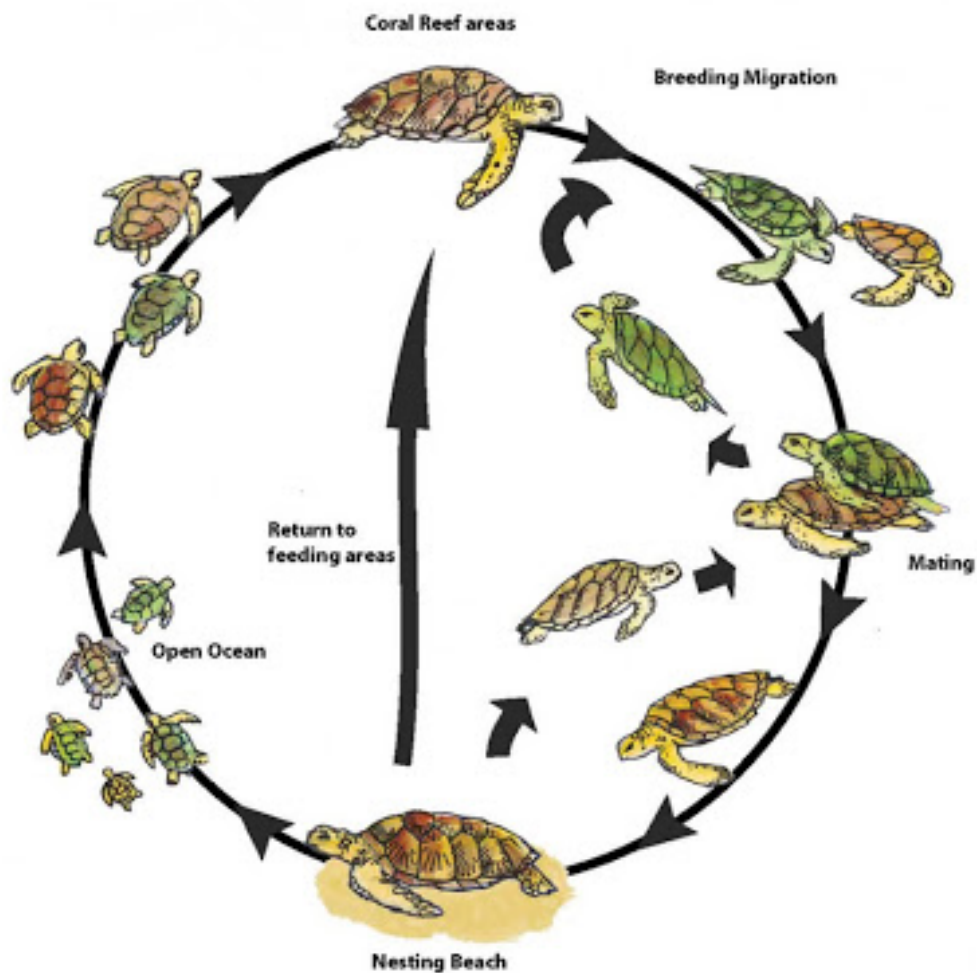




## HABITAT

Most observations are typically within 15 km of mainland shores in protected, relatively shallow marine waters (22–55m deep). They typically forage offshore in surface waters or dive to depths up to 150 m. to feed on bottom dwelling crustaceans. Olive ridleys are occasionally found in open waters. The multiple habitats and geographical localities used by this species vary throughout its life cycle.

## LIFE CYCLE





## WHY CONSERVE OLIVE RIDLEYS

Olive ridleys have been internationally categorised as an endangered species. The direct harvest of adults and eggs, incidental capture in commercial fisheries and loss of nesting habitat are the main threats to this species. In India, olive ridleys were taken in tens of thousands for the markets of West Bengal in the late 1970s and early 1980s, after the advent of mechanization in the fishing sector. This declined after the implementation of the Indian Wildlife (Protection) Act, 1972 enforced by the forest department and coast guard. It has been listed as a Schedule I species in the Act, thereby being offered maximum protection. However, rapid development of India's coastline threatens one of the only three arribadas that occur in the world. Nesting and nearshore habitats of ridleys in other parts of the subcontinent also face mounting threats, although these sites tend to receive less attention.

### **Status:**

**Indian Wildlife (Protection) Act: Schedule I**

**IUCN Red list: Vulnerable**

## MAJOR THREATS AROUND THE WORLD

In many parts of the world and in India, sea turtle populations are affected by a wide variety of threats. Even under natural conditions, survival rates are low, and eggs and hatchlings are predated by small carnivorous mammals, birds, lizards and crabs. Hatchlings are preyed upon as they travel across the beach to the water by vultures, crabs, and snakes. In the water, hatchling predators most likely include oceanic fishes, sharks, and crocodiles. Major threats include degradation of nesting beaches. Many of their nesting beaches are being destroyed by coastal development and subsequent erosion. Other major threats include mortality associated with boat collisions, and incidental takes in fisheries.





## THREATS TO THEM ON URBAN VISAKHA BEACH

The sea turtles of Visakhapatnam face a severe threat from a lot of sources: the tragedy is that a species that has thrived for millions of years, surviving undersea catastrophes such as volcanoes and tsunamis: things that other larger creatures like dinosaurs haven't survived is now endangered, its population declining in a span of very few years.

The List of hindrances at our coast is categorized according to the threats they face on the sea and on the shore.

### THREATS ON THE SEA

#### **Incidental catch in mechanised fisheries:**

Sea turtle mortality occurs primarily in gill nets and in trawl nets by drowning. Although sea turtles are capable of staying submerged for half an hour or more, the stress of being trapped for many hours in gill and trawl nets usually results in drowning. Some turtles trapped in trawl nets are not dead, but comatose, and if they are thrown back into the water immediately, they are likely to die.

### THREATS ON THE SHORE

#### **Loss of nesting beaches due to**

**Pollution:** Impacts of pollution on sea turtles have been less severe than on other marine and coastal flora and fauna, although accidental ingestion of plastics has been documented to indirectly cause death due to poisoning or starvation because of the inability to swallow food due to the blockage of the food passage by these materials. Further, changes in water temperature and quality results in changes in their offshore breeding congregation locations. Changes in salinity profile and levels of organic and inorganic pollutants in the vicinity of mass nesting sites will impact adults and hatchlings.

**Aquaculture:** Intensive and uncontrolled aquaculture expansions along the coast have resulted in the loss of sea turtle nesting and foraging habitats. In addition, aquaculture farms along the coast have become a major source of light pollution for marine turtles.

**Coastal tourism:** Vizag has emerged as a growing tourism hot spot in last few years.

Infrastructures near the beaches attracting tourists have become a major reason behind the loss of sea turtle habitat. Hundreds of people visit beach everyday and tourism supporting activities like joy rides have disturbed the nesting ground. Removal of vegetation, sand, etc., speedboat movement which may cause physical injuries to adults (propeller inflicted), damage reefs, and



release pollutants, littering of the beach by tourists, disturbance to nesting females, etc are the effects of coastal tourism.

**Beach lighting:** Big lights on the beach cause deep impact on the behavior of sea turtles who come to nest on the shore. The artificial lighting coming from beachside communities confuses turtles who normally follow the moon and stars' reflection off the waves to make it back to water, making them more vulnerable to predators, dehydration and road kill.

**Erosion:** The biggest problem faced by sea turtles on our coast today is beach erosion. There are many reasons causing beach erosion, among which human interference is the prime factor. Disobey of Coastal Regulation Zone (CRZ) rules and unauthorized construction near beach has caused severe trouble to the sea turtle habitat.

**Sand mining:** Coastal sand mining can change the entire beach geomorphology and restoration of the beach often takes years resulting in loss of available habitat for marine flora, fauna and sea turtles. The immediate deleterious impact of beach sand mining on sea turtles is to uncover and destroy nests. Raking can also leave ruts and ridges that disrupt hatchlings' sea finding behaviour.

**Pollution:** another big challenge affecting not only sea turtle habitat but also a major issue affecting the entire marine culture is pollution. Discharge of untreated sewage water and deadly residual from the industries has made marine life very difficult.

**Exotic plantations:** Plantation of exotic beach vegetation drastically alters the beach profile and may often be a deterrent for sea turtle nesting. Dense *Casuarina* and other plantations cause excessive shading of the nesting beach. Nests laid in shaded areas are subject to lower incubation temperature, which alters the natural sex ratio of turtle hatchlings, producing more males. Plantation of exotic vegetation on the beach also affects the natural beach formation process.



## ACTIVITIES SUPPORTING CONSERVATION

- Prohibition of discharge of crude oil, pesticides, heavy waters, heavy metals and other poisonous effluents to coastal areas and near turtle nesting beaches.
- Prohibition of discarding of fishing lines, nets, plastic bags other trash into the water or on the beach which results in ghost fishing and incidental mortality of sea turtles.
- Organised cleaning up of the beach and nearshore waters by local forest and fisheries departments and other governmental agencies in collaboration with likeminded organisations, coastal communities, and school and college students. This should particularly be taken up prior to the breeding season of sea turtles in an attempt to clean up the habitat as well as to educate people about marine turtles.
- Declaring no fishing zones, imposing seasonal fishing bans, encouraging use of Turtle Excluder Devices.
- The tourism department, beach resorts and other beneficiaries of beach tourism can involve local communities and schools to adopt a particular sea turtle nesting beach and demonstrate turtle friendly practices.
- Tourism infrastructure development should only be permitted beyond 200 meters from the high tide line or on the landward slope of the sand dune berm rather than the seaward slope.
- Environmental and ecological impact assessment studies must be conducted before taking up any afforestation programmes along the coast, with provisions set up to evaluate any post-project impacts on sea turtles.
- Plantation of exotic vegetation should be clearly avoided on beaches that are known to be sea turtle nesting grounds.
- Artificial illumination along important sea turtle nesting beaches during the nesting season must be turned off (depending on the species, the peak nesting season at any particular location usually does not exceed three months of the year).
- The number of lights near sporadic and secondary nesting beaches must be reduced to the minimum necessary and switched off during peak nesting nights.
- Illumination reaching the nesting beach can be reduced by lowering, shielding, and redirecting light sources onto immediate land rather than towards the sea. Even the glow on the horizon can affect sea turtles. Low mounted lights are better than lights that shine upwards from a high pole.



## CONSERVATION EFFORT BY VSPCA

### **THE SEA TURTLE PROTECTION PROGRAMME**

Generally, there are two main methods of protecting the sea turtle rookeries on the shore (Rookery refers to nesting/breeding ground) i.e. In-situ and ex-situ protection. In situ protection refers to protecting the turtle eggs without relocating them to another area. Ex situ protection refers to shifting the eggs to a protected hatchery, where they are safe from predators and careless beach walkers.

VSPCA has been doing in situ protection since the beginning of the program more than 15 years ago, but our ex situ protection program started in 2010-11. In situ does not provide adequate protection from the environmental dangers (excessive tourism development, beach activities, heavy lighting, pollution and predators such as crows, eagles, jackals and beach dogs) and so ex situ becomes necessary to implement. Its success led us to expand it further, and it now has become our favored method of protecting the turtles. **RK BEACH, JODUGULLAPALEM**, are the primary sites where the hatcheries are set up, the rest (Bhimli and Rushikonda) are we doing the INSITU protection as not much disturbance.



A mother turtle digging to lay eggs



## **THE SEA TURTLE PROTECTION FORCE**

VSPCA’s Sea Turtle Protection Force (STPF) is an 11 member team of extensively trained local fishermen and volunteers who comb the beaches night and day on patrol, fervently protecting the turtle rookeries from predators, poachers and generally careless beachgoers. The force protects not only the turtle eggs and the hatchlings, but also the mother turtles that come to nest.

Each 4 km stretch is assigned two members. We mark the eggs and monitor their progress on a regular basis. Further, we also rescue and safely facilitate the release of the turtles as soon as they are hatched, guiding the weaker ones to the ocean; knowing well that we are ensuring that the females among these hatchlings would return 15 years later by virtue of their inherent “nesting site fidelity” which means that adult turtles always, always go back to nest where they were hatched.

We owe a lot to the STPF whose dedication has made it possible to rescue so many sea turtles from poachers. The force also spreads awareness amongst the public by distributing educational materials and informing them by word of mouth about the turtles and the need to protect them.



**View inside hatchery (Eggs placed in our hatchery with safe measures)**





## EDUCATION AND AWARENESS

We always considered education and awareness programme as an important tool for consolidating the conservation effort. This time to educate and make general public aware of our conservation effort, we placed a separate hut at the beach to explain them the need and benefits of conservation. School kids along with elders looked very curious and were enthusiast to participate in conservation effort. We understand the need of awareness programme and always keep this in priority before peak nesting time. With ever growing tourism, the habitat of sea turtles is not much safe. With such outreach programmes we try to explain people how they can play an important role and contribute to our conservation programme.



Hut placed at beach showing details on Olive Ridley conservation





## MAJOR CHALLENGES THIS YEAR

**Beach erosion:** This year vizag witnessed beach erosion at the most crowded beach of urban visakha, which has proved that how quickly human interferences are eating away the habitat of sea turtles. The beach is shrinking at much faster pace; R.K beach now provides very limited space for nesting, the rest is either consumed for tourism development or destroyed due to erosion.



**Cyclone:** Visakhapatnam was hit by super cyclone HUDHUD which had maximum intensity in respect to all other cyclones vizag has ever faced. City was collapsed and beach was battered. Seeing the aftermath of disaster caused by cyclone, the hopes with nesting were very less this year. There were big doubts with many experts expressing poor nestings by the seaturtles in this coast which was destroyed by cyclone. But in spite of this we are very glad to announce that we received record nesting this year.







**INSPIRE OF SEVERAL CHALLENGES, WE RECEIVED NESTING ABOVE OUR EXPECTATIONS AND RELEASED 33,495 HATCHLINGS. BELOW IS THE DATA FROM THIS YEARS CONSERVATION RECORD.**

AREA	NESTS	EGGS RECEIVED	UNDEVELOPED EGGS	DEAD HATCHLINGS	HATCHLINGS RELEASED
<b>R.K. Beach</b> Area covered – Coastal Battery to Vuda Park	123	15,016	1,181	730	13,105
<b>Jodigullapalem</b> Area covered – Vuda Park to Rushikonda upto Bheemili	197	23,777	2,113	1,274	20,390
<b>TOTAL</b>	<b>320</b>	<b>38,793</b>	<b>3,294</b>	<b>2,004</b>	<b>33,495</b>



The District Collector Mr.Yuvraj, Mrs.Amala Akkineni, Chairperson Blue Cross Of Hyderabad , Pradeep Nath from VSPCA and Mr.B.C. Chaudhary from WTI helping the hatchlings move into the vast ocean



**Success percent of the release of sea turtles  
this season was 86.34%**

Every year where thousands of babies are released, the truth is that only handful of them survives in their life journey. Apart from the natural threats which prepare them for the survival of the fittest, we humans have made it even more hard for them. We are interfering with nature, disturbing complete oceanic biodiversity directly and indirectly. Strong action in the direction of change is the demand of time. To support us in this huge cause please extend your helping hands at [www.vspca.org/donate](http://www.vspca.org/donate)



*--THE END--*