

Protection
And
Conservation
of
Sea-Turtles
(Olive Ridley).
- a report by VSPCA.



1996 - '97.

A C K N O W L E D G E M E N T

The objective and aim underlies the priority of protecting all kinds of living species. This is the utmost and primary aspect in the V.S.P.C.A's endeavour.

Keeping the basic fundamental duty embedded in our constitution, this V.S.P.C.A. would definitely want to give the best of service in embarking to ensure a wholesome protection to the Sea-Turtle which began to frequent the coast of Visakhapatnam in large numbers from 1997/January to May /1997.

The V.S.P.C.A. have been fortunate to have the towering support of V.U.D.A., Vice Chairman, Sri K.Praveen Kumar, I.A.S., a keen lover of nature, and record my deepest of appreciation in providing the 'OLIVE-RIDLEYS' a safe home.

In this regard, the guidance and erudition of Prof.M.V.Subba Rao and Dr.Rajasekhar of the Environmental Sciences, Andhra University, are immense and my special gratitude to Dr.Rajasekhar who has been very encouraging and a pillar of strength for this sensitive project.

My intense affection go out to all the active members of V.S.P.C.A. who have provided timely assistance in making the project a success.

The V.S.P.C.A. has set a precedent and made this a most successful project in India with 80% to 90% success rate. With the coming seasons, there is every likelihood of these rare friends coming to nest, and I fervently wish that once again we all, like minded human-beings come together to prepare a fitting welcome to these humble creatures.

With Love

Yours sincerely,



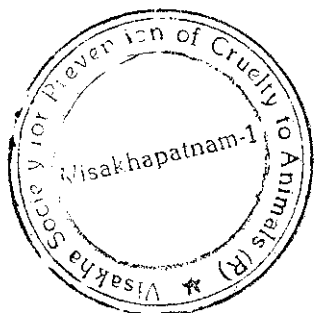
~~PRADEEP KUMAR NATH~~
Founder/Secretary

Reg. off: V.S.P.C.A.

26-15-200,

Main-Roads

Visakhapatnam-1.



PRADEEP KUMAR NATH
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Visakhapatnam-1

PROTECTION AND CONSERVATION OF SEA TURTLES

(Olive Ridley)

I. Introduction:-

The Visakha Society for Prevention of Cruelty to Animals which has come into existence on 30th June 1996 has enshrined in the objectives the common sense, prevailing, that is to save and conserve all kinds of species/creatures/animals and plants and trees on earth. To conserve nature is our goal.

We have been fortunate to have been drawn towards the cause of the endangered sea-turtles, by, Sri K.Praveen Kumar, Vice-Chairman, Visakha Urban Development Authority, Visakhapatnam, who as the chief-guest at our valedictory function on 28th January 1997, stressed the immediate need to protect these very serene species.

In keeping with the basic rationale to render service to the helpless species and that too endangered ones, we and other active volunteers from 29th January 1997 morning instant started to patrol the coast of Visakhapatnam covering more than 40 km.

II. Protection and Conservation (Historical data of 1997):-

(a) Location - dates - of the eggs:-

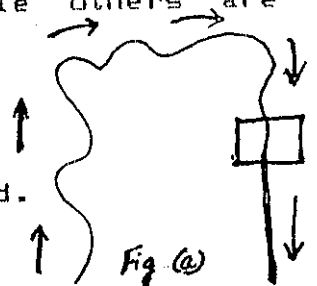
1. Coastal Guard
2. Ramakrishna Beach,
3. Appu Ghar,
4. Jodugullapalem,
5. Sagarnagar,
6. Chapulupadda

Annexure-I

(b) Tracks:-

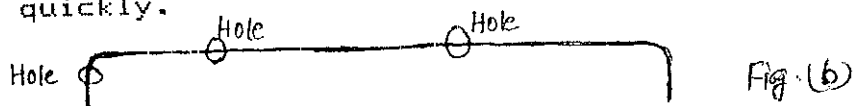
Learning from the fishermen some noticeable facts as regards the tracks of the turtles was seen. There were tracks which seemingly indicate the laying of eggs while others are false.

(i) The egg-laying tracks consist of U shaped.



The above shown track is a sure indication of eggs laid. Especially, when entering the shore the turtle moves criss-cross due to the heaviness of the eggs in her and as soon as the eggs are laid the track becomes straight, indicating the lightness of the turtle and her relief in laying the eggs and going back to the sea quickly.

(ii)



In this type of track I found only a few of them and

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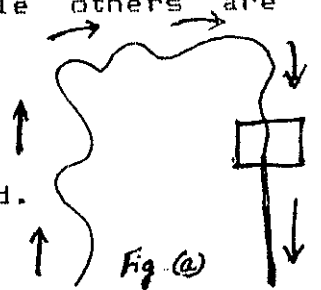
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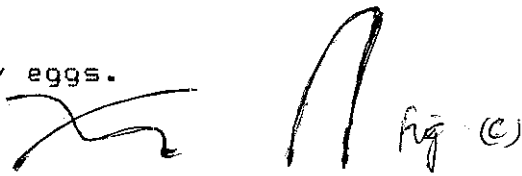
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(ii)




In this type of track I found only a few of them and

all of them did not have any eggs.



(ii) This criss-cross type of tracks were many. And this type of track was prevalent and predominant in unsuitable areas indicating the search for a suitable area these tracks also were devoid of any eggs.

Only fig.(a) that is  shaped tracks had the positive indication of eggs laying.

Some tracks are wide and deep and some narrow and not so deep indicating the size of the turtles. Also the return tracks are bit different from the entering tracks proving that the turtles have laid or not laid according to the return tracks.

(c) The Nest:- The turtles' (Olive Riddley's nest) is one to one and one-fourth feet deep and 1/2 foot wide. This is the actual laying area or where the eggs are placed. But she occupies and sits at a radius of 2 1/2 feet. The nest is covered and the nest can be seen easily different from the others because of the break in soil and the innocent cover up of the soil which is undisturbed and loose.

(d) The Eggs:- The eggs are very milky white. They are the size of table-tennis ball. But some turtle's eggs are small and some are big. The freshly laid eggs are soft and the entire egg is filled with orange liquid and a little gap is left which is the upper portion of the egg clearly showing the position of the

egg how they are to be located at times of relocation. The turtle (Olive Ridley) lays 60 to 144 eggs at a time. She lays them at a distance of 10 feet to 30 feet from the banks of the sea.

(e) Behaviour of the mother turtle:- It is observed that the turtles come to lay eggs more where the harbour lights/beach lights are there instead of in total darkness underlying the factor that they believe that land is there where the lights are there. This particular observation was made and compared in the coastline of Visakhapatnam.

It is observed that the incidences of laying eggs are much more four days before the arrival of full moon and four days after the full moon and not on the full moon day as was suggested by specialists.

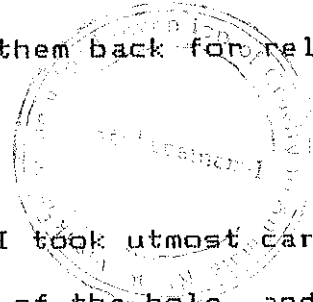
Even, it was seen that on any tide they come ashore.

Also, observed in one incident, I confronted a mother turtle who came to lay ashore at 8 A.M in the morning during March 97. It was a wonderful sight, though she went back in a hurry. This follows that if necessary they come ashore during daylight also. Of course not in the high-noons.

I often came across turtles floating at the front of the shore during daylight. I felt that she was probably sighting for safe laying in the dark.

They come ashore to lay generally from 10.00 P.M to 5 A.M. The mother turtle is totally oblivion to her surroundings while laying the eggs but very sensitive while searching for the proper place to lay. At every stage of her movements she surveys her surroundings very clearly and calmly raising her head to satisfy her motherly feelings.

(f) Relocation of the eggs:- Having closely interacted with the fishermen throughout the entire coast of Visakhapatnam and the necessity to save these eggs to increase their population, I appeased them with some amount as incentives in drawing their attention in finding these eggs and inform me and I used to rush immediately at any hour and bring them back for relocating in the enclave.



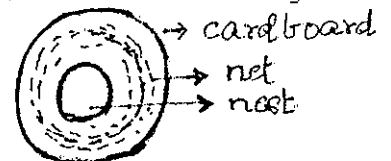
The relocation process, I took utmost care in measuring the depth of the hole, the width of the hole, and the distance from the sea. I would have been happy to even record the moisture content where the turtle had originally laid, but due to financial constraints I could not do that aspect. However, the temperature was recorded by the ordinary thermometer.

The same readings and measurements I implemented while relocating the eggs. Using my bare fingers, taking care of keeping them clean, I removed the eggs from the pit by placing the index on top and thumb down and the middle-finger sideways for preventing any tilt and put them in the basket. Care was taken to

keep the basket clean and using the same sand from the original pit to maintain the temperature.

Process:-

1. Measuring the pit
2. measuring the width of the pit
3. Recording the temperature
4. measuring the distance from the sea
5. covering the box meant to carry the eggs with the sand from the original pit.
6. placing the eggs one by one in the box taking care that the eggs do not tilt and kept in the same position as originally.
7. covering the eggs with the sand.
8. using a transport which has good shock-absorbers and driving slowly.
9. At the relocating site, the entire readings and measurements done, then the hole is dug. Most of the soil from the original is put in and the eggs relocated by the same method.
10. A long stick is put on the nest.
11. A small hooked net is put at a height around the nest but at a distance and then barricading the nest with four feet height cardboard around the nest about 2 feet away.



The reason for such barricading is to ward off predators, especially shore-crabs and rats, to collect and keep them in a large tub filled with sea-water daily, because, often it is

seen that the hatching come out from 11 P.M. to 4 A.M. and move towards the street-lights onto the land and not towards the sea. Even though volunteers were there, yet there were chances that many would escape when all the nestings come out a time, and every night the volunteers may not be available. It is difficult for me alone to keep vigil every night. Even though I keep coming every two or three hours gap and when there is heavy rain.

I studied in some articles and in conversation with professors from Environmental Sciences, Andhra University, the idea being to give exercise to these small hatchlings in the tubs for two days and leave them into the ocean or when the conditions are good to do so. Conditions include the roughness of the sea and the weather.

Amateur in this field I am proud to record the immense success of this very important project. The success rate I am to say has ranged from 93% to 99%. I am very happy to be part of this success.

(g) Hatchings:- The hatchlings ranged from 43 days to 65 days. When the conditions were perfect for the eggs to be hatched, the hatchlings were out on the surface by 45 days.

The conditions include:-

1. Soil,
2. the distance from the sea,
3. climate

(i) Soil:- The success rate of hatchings into baby turtles is wholly dependent upon the soil conditions.

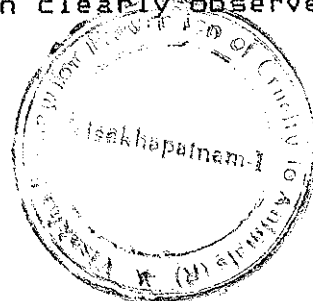
The best rated soil for sure success is the loose brownish white and yellowish colored soil. This soil is situated mostly 40 feet away from the shore.

Whereas, the black coloured soil is not suitable for hatchings. They are tight and hard and highly polluted. Unfortunately, this soil is located about 10 feet to 20 feet from the shore and this distance or in the border of 30 feet they lay their eggs when the tide becomes low.

It has been observed that this black soil becomes hard when the rain falls and when due to high-tide the sea water covers these areas. It has also been observed that due to high pollution in this type of soil the hatchlings are highly prone to contact unknown germs and bad odour emanates.

Due to the combination of the pollution, infections and tightness of the soil especially the middle and lower level hatchlings are effected. They, no doubt hatch, the hatchings are 100% success, but by the time they make their way to the top they becomes infected and also suffocated midway.

(ii) Distance from the sea-shore:- It has been clearly observed that



the hatchings success was more when the distance was 30 feet to 40 feet from the sea shore. Given below is the table of success rate at various distances:-

Distance	Success rate in per centage
10 to 20 feet	70%
20 to 30 feet	80%
30 to 40 feet	95 to 100%

This analysis is also based on the soil factor.

- (iii) Climatic conditions:- The conditions of the climate play an important role in getting the eggs hatched. The eggs laid in the months of January and February have been duly hatched within a period of 43 to 50 days. Whereas the eggs laid in the months of March and April have taken more 60 days to hatch. Other conditions remain the same.

Taking into other conditions being favorable for hatching the difference in days of hatching can be attributed to the weather factor. As the sun gets hotter, contrary to advises from experts that hotter climate mound hasten the process of hatchings, I noticed and recorded that it takes longer to hatch as the days get hotter and also the success rate is less.

Thus December to February is the ideal period for nestings by the mother turtles and beyond that the nestings require our intervention in providing a cooler temperature to make the hatch-



ings a ~~success~~ even if laid beyond March.

It ~~has~~ been often seen that, wherever there is rain at the stroke of midnight the babies are out of their nests these which are ready. This indicates their preference for a cooler atmosphere.

Also, that, whenever the atmosphere is dark or when the nest is covered providing a dark and cool atmosphere the babies keep coming out during the day also. Thus, what keeps them in the hole till night is the weather factor. It is remarkable their instinct to time for their arrival outside.

(h) The hatchlings (Baby turtles - Olive Ridleys):- On 7th April 1997 I could not conceal my joy when a baby turtle belonging to the Olive Ridley was out of the ground.

My observations of the small hatchlings are:-

1. they are black in color,
2. they weight between 11 to 13 gms.
3. the eggs which are originally bigger in size have produced larger baby Ridleys and weighted more, ranging from 13 to 15 gms.
4. the hatchlings start to come out of their nest anytime from 11 P.M. to 3 A.M.
5. Generally, the hatchlings face is attached with a slight upward while coming out, but there have been instances where the face was downward and these had to be helped out. Thus, while

relocating, the eggs should be shifted very carefully. But an interesting fact here is that even while shifting any change in the position of the eggs, they do not get spoiled but do get hatched.

• These hatchlings which come out during midnight move towards the street lights and onto the roads but not towards the sea. It means they are attracted by sight and the instinct of light they move towards that. Thus, it is indeed very difficult and needs lot of protection. The street lights should be blocked out when the hatchlings are due. And also they should be barricaded, so that at our checkings/rounds these hatchlings could be gathered and kept in a large tub filled with sea-water before releasing them early in the morning.

• It is really remarkable that the timings and the depth of the nest is such that generally the hatchlings are out in the night.

• After the baby is out of the nest the body is bent and curled up with a slight embryo attached. The hatchlings gathers strength, body toughens, embryo is absorbed leaving a scar, the baby is active and when outside is all force to walk towards the sea. A wonderful experience.



• Baby turtles are found to be very active for the first 48 hours after which they are still, but after another two days they are very active and continue to do so.

• They eat live fishes and sea weeds after the seventh day.

• They change slight color to ash color after the tenth day. They also increase in size after the tenth day.

• Keeping them in the tub, I think helps in strengthening their instincts for a battle to live in the sea, because as soon as they are out, they are quite weak to battle the waves.

• Here the waves are high and brutal. It has been seen that the hatchlings are fatally hurt and come back to the shore bruised from the battering of the waves.

• Therefore, I had released the turtles in the sea after traveling deeper where the waves are less.

• The experts say that the baby turtles should walk by themselves into the sea so that they develop and flex their muscles to have a better preparation to live in the sea, yet, in our conditions where the waves are high and with force none of them would survive as the hatchlings move with their heads up and do not go below the waves to save the battering of the waves. Thus, in these conditions it is better to preserve in the tub for a few days before releasing them into deeper sea where waves are not there.

• The eggs become round and hard, coarse, milky-white and crack open slowly. This operation continues ten to twenty days before the entire embryo is sucked inside and the turtles are

strong enough to be out.

1. Releasing of the hatchlings into the sea:-

It has been discussed and written that the baby Olive Ridleys be allowed to go naturally into the sea on its own by traveling the small distance from the land to sea they developed a flexibility in their body which is useful for their journey and habitation in the sea.

But, my pertinent and factual point based on careful observation is when we think of conserving, preserving, increasing and protecting these rare species, then the question here is how do they combat the severe waves that are in the form of the shore. On three occasions I tested their resilience and came disappointed.

Especially in India where the Olive Ridleys frequent the shores in more than 100,000,000 and lays their eggs, there is need to create a safe passage into the sea, because our seas are quite rough at anytime of the season and more during April onwards.

Thus, the more practical way would be to release them into calmer areas and into the sea beyond the waves. For this, it is necessary that they be given the right environment artificially in our tubs for one or two days and have them released slightly deep in the sea. As they start to peck and eat after the eight day, there is ample time to search for themselves after honing

our quests for two days in the tub.

After three instances of releases naturally in the sea I have used the above said process. I fervently hope and wish that my efforts bear fruits in having these hatchlings as grown ups here after 10 years to 15 years to lay eggs.

J.Predators:- It is terribly ironical and paradoxical and also a common question asked by many that when each mother turtle lays around 60 to 150 eggs that too three visits in each season, they why they are under the category of endangered species.

After having been associated with this exciting project for four months day and night, I can blindly vouch the reasons and they are many.

It is extremely unfortunate that it is the most sought after 'being' from other living-beings. For the eggs from day one till it is hatched they are in mortal dangers from:

1. human-beings,
2. dogs,
3. hyenas,
4. jackals,
5. crows,
6. eagles and vultures,
7. shore crabs,
8. rats/mice/dormouse,
9. insects and germs in the soil.

The above said predators attack from day one. The human-beings after the second day however do not touch. They grab the eggs on the first day itself. I have come across them where they boil the eggs in a pot and dry and pile them for days. Even the civilized persons purchase them at a rate of 50 paise per egg. Even the baby turtles are being sold in the market.

For the hatchlings the predators are:

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2. crows,
3. dogs,
4. jackals,
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6. rats/mice/dormouse,
7. eagles/vultures
8. insects and germs in the soil
9. shore crabs.



Each of the above predators are potential killers of the hatchlings. Left naturally I am absolutely sure none will reach the sea.

For the mother turtles the main predators are the human-beings especially fisher mongers. Even though I have been advocating to them about the futility of this race and hitting them on their sentiments and religious feelings that the turtles belong to a sect of religion, the hard core people would not

listen. For them the threatening of law only will work which we are trying to do.

It is seen that it is relatively easy for them to catch the mother turtle when she is at the shore to lay eggs as she is oblivion to surroundings. Also, many a times they are caught in the nets because the turtles come to eat fish where these people put their nets. And also during mating I have seen them catching both male and female directly from the waters. The poor creatures are so happy in their avocation that they do not realize the luring danger.

The fisher mongers eat them because it seems that flesh of the turtle is very tasty, very sumptuous and good for the old people. They are caught and left in the open sun upside down for days after which the turtle is dead after the third day. Some slit the neck as soon as they are caught while some burn the turtle live. They are all for the shell which they use it as containers. They are sold in the market at the rate of Rs.400 per kg to Rs.1000 per kg.

The human predators are the main enemy of this race. They eat the eggs as omelettes and pickles, eat the flesh of big turtle and sell the eggs, turtles and baby-turtles. Even their children play with the baby-turtles with a rope round the neck. Now a days it is learnt that the baby-turtles are being exported for medicinal values. Every action of the human-beings are destructive and very sinful.



The dogs, jackals and hyenas are the next important predators for the extinction of sea turtles. They, also are dangerous, because from day one they lose no opportunity to hunt down the eggs. Especially, after a rain smell emanates from the nests and hence I found pack of dogs and jackals going down to the beach and dig their wanted nests. I rescued some nests this way after following them. After chasing them away, I dig those half-dug pits and I did find eggs inside, some of them freshly laid while some are days old. They aware a real menace, because, unlike human-beings, these animals are awake all the time, waiting for an opportunity and have the intelligence of smell to identify their victims. They however eat only the egg yolks but not their babies.

Crows/Eagles/Vultures:- These predators depend on the four-legged animals to dig and when the dogs etc, do not touch the ones that have babies formed, these crows etc., peck on the hapless baby turtles to finish off a delicious meal. Even when everything is as per the rules with no interference, the young ones which are hatched have yet to cross a major hurdle. That is from the time they move to the sea which takes around one hour and thirty minutes early in the morning, they become easy prey to this crows and eagles.

Insects and various germs:- have a major share in the eggs and also the babies when in the soil after coming out of the eggs they attack them immediately. They are capable of polluting the

entire nests and hence the soil should be clean and carefully investigated before relocating the eggs.

Shore-crabs:- also contribute in spoiling the eggs by digging their way into the nests and cut open the eggs with their powerful spinghers. This opened egg pollutes and brings in other germs and insects which totally spoils the entire nests. The enclosure for relocation should be covered with some obstruction all round dug 4 feet deep to stop the shore-crabs.

It is a difficult task to ward off so many potential predators but not impossible.

K. The encounters:-

I have been watching and reading the extraordinary phenomena of the sea turtles and their habitats, their predators. The most fascinating display was in the Discovery channel followed by BBC, Star News and Doordarshans and some magazines. I used to always wonder why not in our beach, when the Orissa Coast is being frequented with them.

To my delight this year has been frequented by them in large numbers. Last year there was one recorded evidence of mother turtle laying her eggs near Ramakrishna Beach.

From 29th January 1997 onwards, encouraged by V.U.D.A. Vice-Chairman, Sri K.Praveen Kumar, IAS, we had been on the move

day and night. At this instance, I had not expected even in my wildest of dreams to come across such large number of nests. I decided to frequent the beach like a mad man waiting for a lottery on my name or in our organisation's name.

Then, on 17th February 1997 at 2.00 P.M. one our active member, Mr.Ganesh(Executive Member), excitedly came to my house and broke the news of having located the eggs of sea turtle at 11.00 A.M, opposite to Visakha Aqua, R.K.Beach Road, with the help of some fisher mongers.

I immediately contacted Indian Navy(Mr.Sampath of 'The Hindu' gave me idea to contact the Navy) keeping in mind their thrust in conservation of sea turtles. But, I was terribly disappointed with their enthusiasm and their reply left me still more depressed. Their statement read that they would provide protection at sea only and advised me to seek the protection of police.

Then, I contacted, Environmental Sciences, Andhra University. The head of the department, Prof.M.V.Subba Rao, threatened our volunteers that we would be arrested and should return the eggs back into the nest. Incidentally, Mrs.Padma one of our volunteers after contacting some friends in university had taken 40 eggs in a basket filled with sand to Prof.M.V.Subba Rao to be hatched in their incubator.

However, to our horror, the incubator was not working and it seems was out of use for years. We even brought a plug and made it function, but they did not have the petridishes where the

eggs could be kept. This went on for four days and I decided to take back the eggs and relocate them in our fence.

Meanwhile, I convinced VUDA Vice-Chairman, Mr. Praveen Kumar, the immediate need of an enclosure to protect the eggs. Some instinct made me to realize this as I expected some more nests. Despite his busy schedule in organizing the Visakha Utsav 1997, he instructed the D.F.O and we got a 30 x 30 feet enclosure surrounded by wood and palm leaves. The D.F.O./VUDA had in fact discouraged me and also suspected our faithfulness in protecting the eggs and that it was a mere publicity. At that moment I took it as a challenge and indeed how glad I am to have succeeded to a large extent.

Thus having learnt the apathy and lack of responsibility by the concerned authorities who had the capacity to protect the eggs, our organisation and V.U.D.A had decided to organize and participate as the perfect hosts and welcome the silent guests to our shore with the assurances of safety.

Along with the Chairman of VSPCA, Mr. K. Prabhakar and the other active volunteers we travelled along the coast especially during the nights in full moon days. However, due to the disappointment of not finding the eggs, for some days, the enthusiasm among our boys disappeared. However, I continued relentlessly early morning from 5 A.M to 8 A.M and in the night from 10 P.M to 1 A.M.

Also along with Mr. Bhaskar, Vice-Chairman of VSPCA, I travelled along the Vizag coast upto Bheemunipatnam and advised them to inform us about any turtles nest and they would be paid suitably. They were not to touch them. The entire relocation would be done by us.

From February 23rd 1997 I started to find the eggs. I went to the various fishermen colonies and tried to explain in their dialect the need to protect these Olive Ridleys and other species. I tried to explain to them the usefulness and need for their existence. As the sea turtles thrive on live fish they act as the guide to the fishermen as to the availability of the fish. Also, I tried to explain to them in terms of religious sentiment. There is a saying that the turtles are a form of God. I used that to the maximum. And finally I warned them against poaching of eggs and turtles which are against the law.

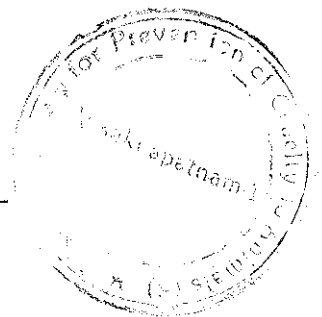
Towards this extent, I along with others and Dr. Rajasekhar of Environmental Sciences, Andhra University had been to Pudimadaka. There besides the killing of Olive Ridley's the fishermen are using Dolphins as bait for the sharks. We put up a board, explained to them and are paying Rs.200 per month to a boy who is faithful enough to inform us or stop the process these itself. Also, in this regard, we had been to Bhimili, Tagarapuvallasa, Chapalauppada, Jodugudlapalem and New Jalaripet.

In the process of searching for the eggs, I repeatedly encountered very hostile crowds saying that this beach belongs to them, and everything in it is theirs. They are not bothered about any official to come and arrest them. Many a times a I saw the turtles getting stuck in their nets. I had to run and push the turtles back into the sea, but not before being jostled by them. They demanded Rs.300/- to Rs.1000/- but risking myself I pushed my way in getting the turtles back into sea. These fishermen threatened to my life and also warned the watchmen in our enclosure to go away. However, I continued with utter determination and I am happy for such a resounding success. The fisher mongers do ask some pertinent questions as what is th use of collecting and hatching the eggs? what is the use of saving the big turtles? why should we intrude into their affairs? whose beach and sea it is? when all living beings in the sea can be eaten why not the turtles? why should we upset their business?

In fact they also asked for compensation in order to stop catching turtles. I have also visited the major markets and did witness the selling of turtles eggs and meat. It is very clear that they are not aware of the rules and regulations of the protection to such species. Hence, they require immense awareness to not buy and sell these poor beings. It is a very sensitive task and require patience but on war-footing.

L.Suggestions:-

i) Some facts in brief(some startling facts):-



a) they are four types frequenting this coast namely, Olive Ridley, Logger-~~Head~~, Hawks bill and Green turtle of which the mother turtle lay the eggs during 8.00 A.M in the morning also.

b) they frequent those places where there are harbor lights.

c) they lay eggs ranging from 60 to 150

d) the eggs are milk-white in color.

e) they frequent the shores to lay more during the months of January, February and March and these are predominantly more successfully hatched.

f) the turtles have come to lay even during the month of May and June.

g) they lay more four days before and after a full moon

h) they come to lay from extremely low tide also

i) they are oblivious to surroundings when laying the eggs though, they are sensitive to distractions that is risky to her.

j) the eggs have hatched in 43 to 50 days maximum.

k) the eggs that have been laid 40 feet away from the shore are highly successful in getting hatched.

l) the white and brown and loose soil are best suitable for hatchings

m) the baby Olive-Ridleys hatch and come out mostly during midnight and move towards the harbor lights. Hence, here, careful monitoring is required.

n) it has been noticed that after a bout of rain and thunder, it hastens the babies to come out into the open.

o) when nearing the hatching days, a shade provided to the nest, then the hatchlings come out during the full day time also, indicating that time is not the factor but the cooling of the atmosphere is more important for negotiating to travel to the sea.

p) the eggs break open 7 days before the actual date and yolk vanishes within these 7 days and the hatchling emerges fully fit from the egg 2 days before they are out.

q) from the egg they are out in curled up position and they gain strength and straighten within two days before they come out.

r) eggs relocate even though they are 5 days old, have been successfully hatched.

s) the waves of the sea are one of the biggest irritants to the baby turtles going into the sea.

→
↓
□ egg laid
↓
↓
↓

t) this type of track is a sure indication of eggs being laid. From the place she travels into a straight line whereas she enters and lay moving in zig zag way.

BEACH

u) the hatchlings have also born face facing downwards indicating that despite wrong relocation of the egg they were born that way. Of course, this is of academic interest but, yet they can be born this way also.

Improvements:-

Looking into the factors that go to make the conservation of these sea-turtles from being extinct we have to take stock of the misleads and use our intelligence to help these poor turtles preserve by themselves from the predators because they are unaware of certain natural consequence like:

1. the weather conditions,
2. the sea waves,
3. the under current factors,
4. the soil conditions,
5. hatching timings (they come out in the middle of night and move towards the lightings)

1. The fence:- could be made of fibre glass material with aluminum mesh all round. The structure should be put 5 feet inside which would contain no holes and 5 feet above the ground to ward off mainly pests, rodents, shore crabs, dogs and jackals. From the 5 feet structure aluminum mesh could be covered all round even at the top to have a full proof structure. The top mesh will put an end to the crow and eagle menace.

2. The soil:- should be the loose, fine, soft, brown and yellow. The soil could be selected and brought in. After every season the soil should be mixed from down and some changes could be done to ward off any insects. To prevent the attack of any kind of virus and other insects, before the season there should be a thorough upheaval of the soil. Round the fence some anti-insects medium could be sprayed.

3. There should be a regular check-up of the eggs relocated. The unfertilized and infections should be located and carefully removed, otherwise this egg could invite infection to the others also.

4. The system relocating the eggs should be carefully studied. As far as possible the way the mother turtle has laid the eggs, the relocation should be done in the same way. If possible the sand could be dug right round the eggs deep and lifted from down by a shovel in a tub and relocated the same way. But this requires a lot of experience. The other way being to put the eggs with the fingers without any movement.

5. The depth and circumference of the hole, the moisture, the distance should be as the original one.

6. The sea current should be studied before leaving them into the sea because, the currents coming in and moving criss-cross will create havoc to the baby-turtles where the flow is straight and outward they should be released there. Further, the sea should be calm with no waves or waves. To avoid the front waves the turtles could be left a slight deeper. As they move eastwards to the sun they are prone to be still near the shore. As such the fisherman near the shore catch many of these turtles in their nets and destroy them or give them to their children to play. In this regard massive awareness followed with penalty and imprisonment to the offenders. Also, there should be the TED system for these shore fishermen also just as for the travelers to ensure a better survival chances for these sea-turtles.

7. It is prudent to allow these baby turtles 24 hours exercise in a large containers before being allowed into the sea. But the release should be before 7 days as they should have time to settle down in their new environment and search for foods which they normally start eating from the 8th day onwards.

8. The hole depth and circumference and the moisture should be the same as the original. Also, the condition of the soil should be perfect and hygienic.

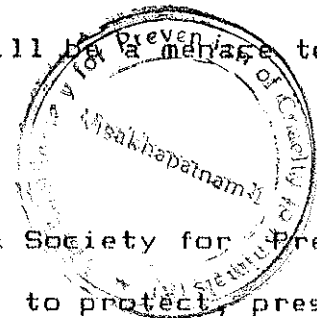
9. To attract the mother turtle to lay her eggs the shorelights should be on, but when nearing the stage of hatchings at a probable date, it is better to put-off the lights, because most of the time the baby turtles are out during midnight and keep moving towards the lights.

10. While keeping the hatchlings in the tubs care should be taken to change the water every 12 hours and the tubs be surrounded by small mesh coverings to ward off any possibility of rats menace.

11. When nearing May/June hatchings should be protected also from the sun by providing a mesh at the top as the heat is too much for the eggs.

12. The most important part is the relocation of the eggs. There should be a model as to how to keep the eggs first as the mother turtle puts, because not only the metabolic heat of each egg is required but the height and weight and one on top of the other. The egg placing should be such that the hatchlings should have the mobility to move upwards and not being squeezed or crushed or not being able to move upwards. This is important. Any delay in their coming up could attract the germs in the sand which are ready for the dead ones and which in turn will be a menace to the other also.

The Future:- The chief objective of Visakha Society for Prevention of Cruelty against Animals (VSPCA) being to protect, preserve



and conserve all living creatures to live their lives in peace, harmony, in co-existence with other beings while and respecting their right to like by nature and by constitution.

Within the necessity and ambit of the animals and VSPCA respectively, I want to pursue vigorously for the purpose of firstly protecting and then conserving especially endangered species like the sea-turtles and dolphins.

The VSPCA'S role for the sake of any animals welfare is of utmost priority.

From, sterilization and immunization of dogs, providing shelter to cows, buffaloes, bulls, providing shelter and medical attention to the sick and wounded ones, to prevent poaching of wild animals birds and sea creatures to prevent animal sacrifices, to stop selling wild animals, birds, stuffed squirrels, birds etc., to stop overloading of bullocks, to halt slaughtering of cows, to conduct seminars in schools, to protest against dissections in schools, colleges and universities, to scree movies relating to animals to children to create awareness among public and to create model place to bring out and show the beauty, comfort and natural living with the animals in nature. The VSPCA's future programs are noble, holy and conscious.

In this regard, I fervently call upon all like minded institutions, corporations and philanthropists to come forward and extend their might for this holy cause. The protection and con-

ervation of sea-turtles have been done with huge success and with your support I wish to continue every year. Similarly, on my mind is the protection of dolphins which is the foremost respected and desiciplined mammal. This mammal is being unabashedly trapped and killed by fishermen not for consuming but for baiting sharks.

I want to extend the role of VSPCA in protecting and conserving the sea turtle and dolphins to Pudimadaka, Gannavaram, Chepalaupada, Bhimavaram, Kakinada and of course Visakhapatnam stretch.

But this is possible with your noble gesture and I appeal to you all to join in this holy quest.

The Visakhapatnam Urban Development Authority under the efficient stewardship of Sri K.Praveen Kumar, IAS, Vice-Chairman who has been relentlessly striving to transform and bring out the natural splendour underlying Visakhapatnam's potentialities has provided the much needed permission and support to conduct the sea-turtle project. I am very optimistic of his affirmation in continuing to do with us this noble project. I do require his guidance and co-operation in saving the lives of these beautiful creatures.



ANNEXURE - I

Date on which eggs laid	Relocation date	hatching date	no.of days of hatching
17.02.97	17.02.97	03.04.97	45
17.02.97	17.02.97	03.04.97	45
17.02.97	17.02.97	03.04.97	45
18.02.97	18.02.97	04.04.97	45
25.02.97	25.02.97	04.04.97	43
26.02.97	26.02.97	09.04.97	43
26.02.97	26.02.97	07.04.97	41
27.02.97	27.02.97	09.04.97	42
28.02.97	28.02.97	11.04.97	44
28.02.97	28.02.97	13.04.97	46
02.03.97	02.03.97	14.04.97	44
03.03.97	03.03.97	15.04.97	45
06.03.97	06.03.97	18.04.97	49
09.03.97	09.03.97	23.04.97	46
11.03.97	11.03.97	27.04.97	48
11.03.97	11.03.97	28.04.97	49
13.03.97	13.03.97	29.04.97	49
13.03.97	13.03.97	28.04.97	48
13.03.97	13.03.97	29.04.97	48
29.03.97	29.03.97	16.05.97	49
30.03.97	30.03.97	18.05.97	49
30.03.97	30.03.97	19.05.97	50
10.04.97	10.04.97	27.05.97	48
11.05.97	11.05.97	30.06.97	51

PS:- July 7th 1997, 120 eggs found in the beach. This could belong to the "Hawks Bill" category which lays eggs during the months of June and July every year. This would be a very rare incident if it is the Hawks Bill and we are guarding and awaiting the finality with sincere hope.

ANNEXURE- II

Success Rate

Date on which no.of eggs laid	No.of eggs hatched and come out	No.of eggs unfinished <i>unfertilised</i>	No.of eggs spoiled due to germs/soil conditions
17.02.97-90	85	5	-
17.02.97-65	63	2	-
17.02.97-110	101	8	1
18.02.97-125	110	10	5
25.02.97-113	109	4	-
26.02.97-112	101	10	1
26.02.97-130	119	10	1
27.02.97-120	97	20	3
28.02.97-85	76	8	1
28.02.97-111	98	12	1
02.03.97-90	83	7	-
03.03.97-125	110	13	2
06.03.97-135	114	17	4
09.03.97-120	107	9	4
11.03.97-115	101	8	6
11.03.97-98	90	7	1
13.03.97-117	101	9	7
13.03.97-88	78	7	3
13.03.97-110	103	6	1
29.03.97-150	130	17	3
30.03.97-100	93	7	-
30.03.97-95	89	5	1
10.04.97-113	98	11	4
11.05.97-100	to be hatched (June 15th to 20th)		

(since hatched)
00 . 00 . →

ANNEXURE - III

Predators classification in order of their destruction

	EGGS	TURTLES
1. Human beings	40%	50%
2. dogs/hyenas/jackals	20%	-
3. crows/eagles	20%	30%
4. insects/warms etc	10%	10%
5. shore crabs	5%	-
6. rats	5%	10%

