REPORT ON

SEA TURTLE PROGRAMME 1992-93

SUBMITTED TO

TAMILNADU FOREST DEPARTMENT

BY

STUDENTS'SEA TURTLE CONSERVATION NETWORK

A1/4/4,3rd MAIN ROAD,

BESANT NAGAR,

MADRAS - 600 090.

TABLE OF CONTENTS

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INTRODUCTION

The Sea Turtle Programme for 1992-93 commenced as usual with the Ridley Trail - turtle walks conducted every night from December to April. These walks were conducted along the Madras coast-line from Besant Nagar to Nilankarai with the objective of collecting and relocating the nests at the hatchery near Chinna Nilankarai fishing village ,thereby protecting them from natural and man-made hazards. Though the Ridley Trail continued to occupy a major portion of the season's activities,it was with a difference-beach management was introduced for the first time on the Madras Coast wherein the turtle walks were conducted merely to locate and monitor wild nests.

JUSTIFICATION

Hatching of the nests in the wild state can be achieved

1) by leaving the nesting habitat undisturbed
2) in the presence of human and feral animal predation and disturb ance, by early detection and monitoring of the nests.

As the Madras coastline supports a heavy human population, both urban and suburban, the wild nests require protection and continuous monitoring. Nests which are threatened inspite of protection available need to be relocated. Hence a partial beach management programme was adopted wherein only the wild nests threatened by factors beyond the control of the voluntary group were relocated at the hatchery. These parameters are described under Beach Management Programme.

BEACH MANAGEMENT PROGRAMME

Commencing with the construction of the hatchery at Nilankarai in December,we launched into the Ridley Trail. The walkers would start the search from Besantnagar from the Ashtalakshmi temple and continue uptil Nilankarai, an approximate distance of 5 km.

EQUIPMENT

Four cell torch

Mercury thermometer

One metre measuring tape

Five metre measuring tape

Wooden nest probes

Cloth bags and Backpacks for egg collection

METHODOLOGY

Walks commenced from Besantnagar Ashtalakshmi temple, usually after 2200 hours IST. Soil, tide line and ambient temperatures were taken at the beginning of the walk. On location of turtle tracks,up tracks and down tracks were identified and the nesting site at the junction of these tracks was probed using a wooden probe.On discovering the nest,temperature of the nest site and ambient temperature along with weather conditions,distance from tide line, vegetation line and habitat descriptions were recorded.The nest site was fixed against permanent markers such as local dwellings,lamp-posts and palm trees.

The tracks of the nesting turtle were then wiped out as far as possible by disturbing the sand in that area.At nest sites close to

fishing villages,shallow depressions were left in the sand a little away from the nest.This was a camouflage technique to simulate poaching.

At the end of the incubation period,the nests expected to hatch were located to determine if the hatchlings had successfully found their way into the sea or had been disoriented by the lights.Live hatchlings found disoriented or retained in the nests were released into the sea.

As the advantages of the Beach Management Programme have already been dealt with under justification only the disadvantages of this programme will be discussed here.All the natural and man-made problems already mentioned pose a serious handicap to the Olive Ridley.

The difficulties faced by the walkers was that of time and number of available volunteers. Hence close monitoring of the wild nests posed difficulties and lack of control over natural predation and disorientation caused by lighting.

A brief summary of the beach management programme is given below :

Total no. of wild nests : 32

No. of eggs in 9 wild nests : 1123

% live hatchlings from 9 wild nests : 90

% dead hatchlings from 9 wild nests : 10

Since monitoring of nests proved difficult due to limitations of time and number of personnel,data from only 9 wild nests is available.Moreover, though the hatching percentage for 9 wild nests has been estimated, the number of hatchlings which actually reached the sea could not be estimated.

HATCHERY MANAGEMENT PROGRAMME

The basic objective of the hatchery management programme is to protect the eggs by relocating wild nests to the hatchery simulating natural conditions as closely as possible.Until last year the hatchery management programme was the main focus of the SSTCN's activities.This year only nests with low chances of survival in the wild were collected for relocation.The potential threats to these nests in the wild are as follows:

1.High level of human activity especially by fishermen:Hence,nests in and around fishing villages were collected.The dragging of nets,ropes and catamarans by the fishermen is a source of danger to the hatchlings when they emerge.

2.High tide line:Nests very close to the high tide line were collected since temperature and moisture content of the nests would be adversely affected by the water.

3.Nests in vegetation especially Spinifex: A major threat in this stretch of beach is the spreading vegetation especially Spinifex and Ipomoea.Nests in vegetation were collected since in the past years it has been observed that upon emergence,the hatchlings get entangled in the vegetation or impaled on the thorns.

4.Nests located close to bright lights: Lights are another hazard on this stretch of beach.It is quite conclusively known that hatchlings are guided towards the sea which appears brighter than land due to greater reflection.With an increasin gnumber of lights on the beach,the hatchlings are disoriented and proceed in the wrong direction upon emergence.Therefore,nests close to bright lights

were collected.However, as the season progressed we found that hatchlings were affected by lights even a considerable distance away.Hence, as a part of beach management,it is absolutely necessary to control lighting up of beaches as far as possible especially in Besant Nagar.

A brief summary of the hatchery management programme is given below:

Hatchery constructed on : 20.12.92

No. of nests relocated in hatchery : 27

No. of eggs from twenty two nests : 2549

No. of hatchlings released from

fifteen nests : 1414

Total dead in fifteen nests : 87

Total unhatched in fifteen nests : 105

The discrepancies in the number of nests for which data is available is attributed to limitations of time and personnel.

Advantages of hatchery management programme:

1.It is possible to monitor nests more closely and accurately and a greater amount of data can be obtained especially about hatchlings.Eg.Number of live,unhatched,hatching percentage e.t.c.

2.There is no threat of disorientation of the hatchlings upon emergence since lighting is minimal and the hatchlings are collected immediately upon emergence and released into the sea.

3.There is no threat of poaching or natural predation by way of dogs and crows though predation by crabs cannot be controlled.

4.The number of personnel required is considerably less than in beach management programme.

5.There is no problem with regard to nest location.

Disadvantages:

1.Possible danger of releasing ecologically unstable population.

2.Since there is no regulation of nest temperatures,sex ratio of hatchlings from relocated nests could be adversely affected.

PROBLEMS ENCOUNTERED UNDER BEACH MANAGEMENT PROGRAMME

NATURAL : This season, the most serious problem posing a threat to the Olive Ridley seems to be a gradual decrease in nesting beach area due to rapidly encroaching vegetation and cyclic erosion of the sand by the tide to form ridges which could be deterrents to the nesting female.

Under the onslaught of large packs of feral dogs and hordes of crabs, the emerging hatchlings were rendered helpless. At present, there seems to be no ready solution to this problem as removal of the dog packs would only lead to rapid replacement.

MAN-MADE

Increased urbanisation and sand removal for construction purposes in lorry loads continues to occur throughout the 5 km stretch. Also poaching of wild nests by the locals although seemingly reduced still occurs.

The nesting female is faced with danger from the trawlers operating quite close to the shores. Dead adult turtles with cut flippers deep slashes on their carapace and other mutilation have been found washed ashore. Further the fishing nets used by such motorised vessels are also a death trap to these turtles as they are drowned in them.

Increased lighting along the beach not only seem to have successful in disorienting emerging hatchlings but have also disoriented some of the nesting females.

LOGISTICS:

Limitations of number of personnel, time and facilities to survey the area of study. Difficulty in location of the wild nests at the end of incubation period. Due to the unpredictability of the exact date and time of hatching and emergence of the hatchlings collection of wild nest data proved difficult.

REPORT OF SEA TURTLE PROGRAMME 1992 - 93

DATA FOR RELOCATED NESTS :

DATE	NEST NUMBER	NO. OF EGGS	NO. OF HATCHLINGS RELEASED
16.01.93	1	140	130
19.01.93	2	148	118
23.01.93	3	134	125
23.01.93	4	106	102
24.01.93	5	135	132
24.01.93	6	111	107
25.01.93	7	96	96
28.01.93	8	160	153
31.01.93	9	151	147
		TOTAL 1181	1110
02.02.93	10	146	141
04.02.93	11	108	93
04.02.93	12	137	124
05.02.93	13	69	0
05.02.93	14	115	-
05.02.93	15	122	-
10.02.93	16	117	-
10.02.93	17	115	-
12.02.93	18	128	-
12.02.93	19	132	-

16.02.93	20	130	-
20.02.93	21	53	-
20.02.93	22	142	-
23.02.93	23	92	87
26.02.93	24	83	-
		TOTAL 1689	445
03.03.93	25	112	-
13.03.93	26	128	-
14.03.93	27	91	-
22.03.93	28	-	-
		TOTAL 331	

TOTAL NUMBER OF EGGS = 3198

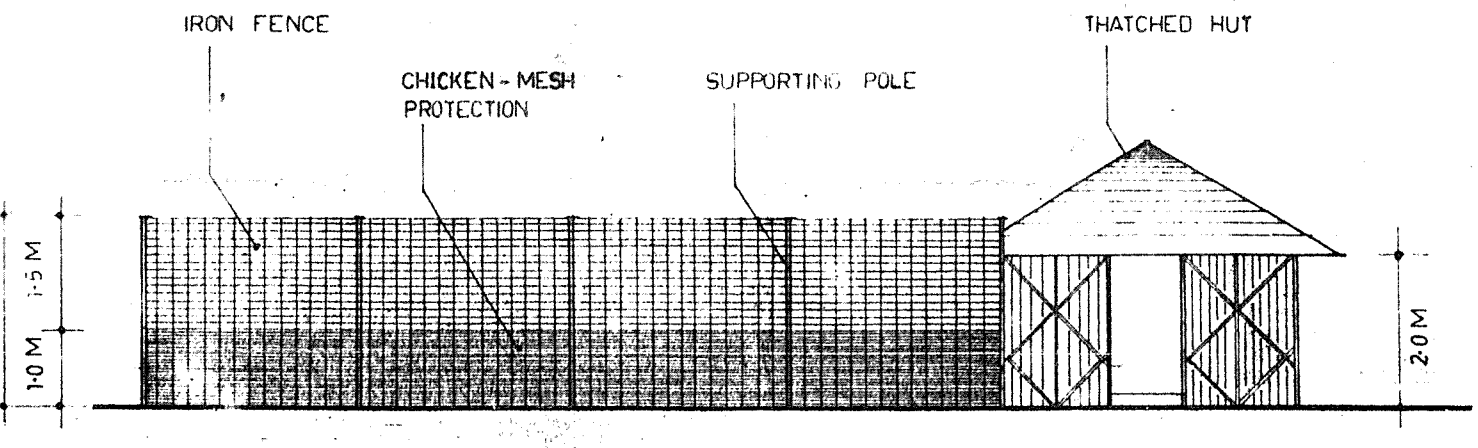
TOTAL HATCHLINGS RECORDED = 1555

DATA FOR WILD NESTS :

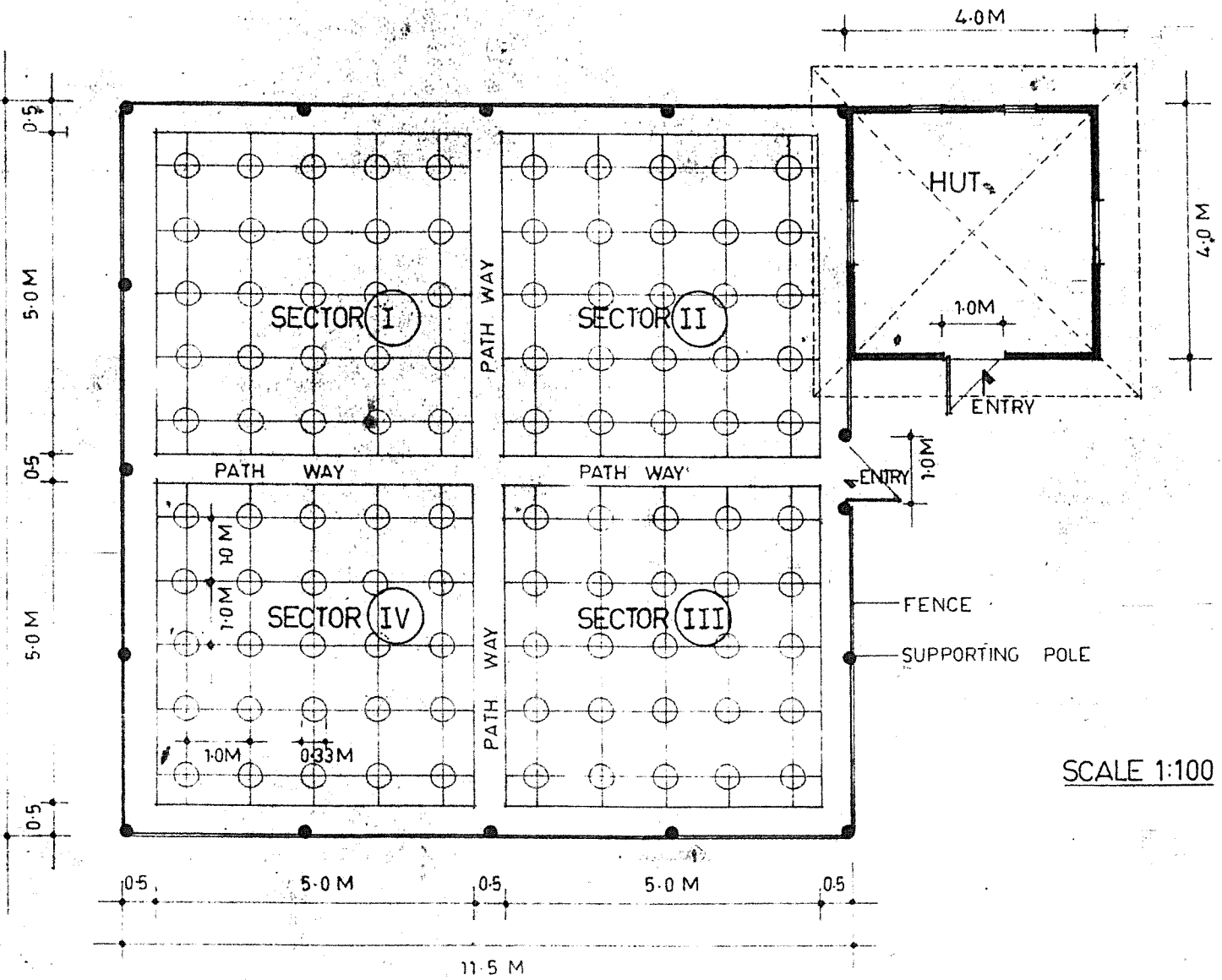
DATE	NO. OF NESTS
22.12.92	1
29.12.92	1
31.12.92	1
TOTAL	3
03.01.93	1
09.01.93	2
14.01.93	2
15.01.93	1
16.01.93	1
17.01.93	1
19.01.93	1
22.01.93	2
23.01.93	3
24.01.93	1
25.01.93	3
30.01.93	1
TOTAL	19
02.02.93	3
10.02.93	2
13.02.93	1
19.02.93	2
23.02.93	1
26.02.93	2
28.02.93	1
TOTAL	12

01.03.93	2
05.03.93	1
06.03.93	1
07.03.93	1
09.03.93	1
11.03.93	1
13.03.93	1
24.03.93	1
TOTAL	9

TOTAL NUMBER OF WILD NESTS = 33



ELEVATION



SCALE 1:100

HATCHERY PLAN

SSTC madras