ANDAMAN & NICOBAR SEA TURTLE PROJECT

PHASE V

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Satish Bhaskar

Research Associate,
Centre for Herpetology,
Madras Crocodile Bank,
Post Bag 4,
Mamallapuram,
Tamil Nadu 603 104.

Period of survey : 10 Feb - 24 Apr 1994.

Investigator : Satish Bhaskar. The investigator formed part of the Centre for Herpetology team which also included Dr. Romulus Whitaker who was involved in broader studies on amphibians and reptiles

Areas covered in this report : -Little Nicobar Island
-Great Nicobar Island
-Cuthbert Bay, Middle Andaman.

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1. SUMMARY.

1.1 Sea turtle survey on Little Nicobar Island

Two major nesting beaches, both used by the leatherback, the olive ridley and the green turtle , were surveyed, on 29 and 30 March 1994. The beaches are situated on Little Nicobar's south-western coast near the hamlets of Dahayu and Pulo Kiyang respectively (see map). A minimum total of 165 leatherback nests were counted on three beaches (which included the two major ones referred to above). Domestic dogs take a substantial, though unquantified, proportion of eggs and emergent hatchlings from these beaches. During a survey in 1991, 49 leatherback nests had been recorded on three beaches at Pulo Bahua, Monkauye and Pulo Kiyang on the island's south-west coast (Tiwari 1991). More beaches on Little Nicobar remain to be surveyed (see Art. 2.4.1).

1.2 Small arribadas of olive ridley turtles at Cuthbert Bay

The occurrence of small arribadas (of upto 205 nesting turtles in one night) on the east coast of Middle Andaman has been confirmed by the Andaman and Nicobar Forest Department (pers. comm., Sajan Paul, 1993). Departmental field staff counted 713 olive ridley nests on the 5 km stretch of beach where most of the nesting at Cuthbert Bay occurs, during the 1990/91 nesting season. The following information has also been obtained from Forest Department records :

During the 1990/91 season, 57.5 % of the total number of nests were made on only 4 nights (Table 3, Art. 4.1) in a nesting season that spanned 6 months, November 1990 to April 1991. Though nests have also been found in August, September and October, an average of over 94 % of a season's nests are

made during the months December, January and February. No nests have been found in May, June and July.

Still smaller arribadas also occur at Ramnagar, Smith Island and Coffeedera in North Andaman (pers. comm., Devraj, 1993). Earlier, Misra (1990) had recorded 338 olive ridley nests in the 1988/89 season at Cuthbert Bay and had published a week-wise breakup of nesting numbers, though arribada-type nesting was not referred to.

It will be valuable to learn whether or not olive ridley arribadas of similar proportions also occur at some or all of the prime leatherback nesting beaches in the Nicobars, viz. those at the mouths of the Dagmar, Alexandria and Renhong rivers on Great Nicobar, at West Bay and South Bay on Little Andaman and at the Dahayu and Pulo Kiyang beaches on Little Nicobar. The two species nest concurrently at all these beaches as well as at the Galathea beach on Great Nicobar, and are known to have done so in the past at Cuthbert Bay and at Karmatang, Middle Andaman, where leatherback turtles do not nest anymore.

1.3 Re-survey of the Galathea nesting beach.

On this important nesting beach where 19.5% of Great Nicobar's leatherback nests had been counted during the 1991/92 nesting season, the number of leatherback nests during the 1993/94 season was at least 237. This was 50 % higher than those made during the 1991/92 season (158 nests, Bhaskar 1992) and also higher than the number in the 1992/93 season (Wimbright, pers. comm., 1994).

At least one of the 25 leatherback turtles tagged during the 1991/92 season was seen nesting by Forest Department staff in 1993/94, proving that at least some of these turtles remigrate to nest every other year.

At this beach, nesting by the olive ridley during the 1993/94 season could not be quantified with any degree of accuracy, for reasons given later (see Art. 2.1.1).

During the period 1992-1994, feral and domestic dogs have been eradicated from the environs of the Galathea beach by the Forest Department. The major natural predators of turtle eggs and hatchlings viz. the Andaman wild pig (Sus andamanensis) and to a much lesser extent the Water monitor lizard (Varanus salvator) have now resumed their depredations. However, the policy of excluding or eliminating dogs from the nesting beach requires no re-assessment.

Stray cattle (which inadvertently compact nest sand) have also been excluded from the nesting beach by the Forest Department.

1.4 Revised estimates of the minimum numbers of leatherback and olive ridley turtles nesting in the Andaman and Nicobar Islands in one year :

1.4.1 The number of nesting leatherback turtles :

Tiwari (1991) had recorded 49 leatherback nests on Little Nicobar during an earlier survey. With 165 leatherback nests now recorded on the three freshly surveyed beaches on the island, and allowing for the fact that this season was 'above-average' by a factor of 2/3 (see Art.1.3) as regards the numbers of nesting leatherbacks, the population that nests in an average year in the Nicobars can now be raised by $\frac{165-49}{4.9} \times \frac{2}{3}$ i.e. 12 individuals (assuming that each leatherback nests 4.9 times on average during a season) since the last estimate in Bhaskar 1993. The new estimates are therefore 190 nesting females for the Nicobars and 210 for the entire Andaman and Nicobar group (see Table 2, Art.2

1.4.2 The number of nesting olive ridley turtles :

With fresh data obtained by the Forest Department (Art. 1.2 and Table 5, Art. 4.3) the number of olive ridley turtles nesting in a year in the Andamans can now be raised by $\frac{723 - 338}{1.5}$, i.e. 256 individuals (assuming that an olive ridley nests 1.5 times on average within a season) since the last estimate in Bhaskar 1993. The new estimates are 755 nests, i.e 503 turtles a year in the Andamans and 1052 nests, i.e. 701 turtles a year in the entire Andamans and Nicobars.

2. NESTING OF LEATHERBACK TURTLES.

2.1 Nest counts on Little Nicobar beaches.

Three beaches on Little Nicobar Island's southwestern shore that were freshly surveyed for sea turtle nesting included some of the largest expanses of sandy beach that now remain in the Andamans and Nicobars -- those near the hamlets of Dahayu and Pulo Kiyang. The beaches were surveyed on 29 and 30 March 1994, near the close of the main nesting season for leatherback and olive ridley turtles. A total of 165 leatherback nests were counted on the three beaches -- 115 at the Pulo Kiyang beach , 47 at the Dahayu beach and 3 in a cove in between, just south of the Dahayu beach. This sandy cove is hereafter referred to as Dahayu Cove.

2.1.1 The Pulo Kiyang beach :

On this, the most southerly of the three beaches surveyed, only 8 of the 115 leatherback nests seen showed visible tracks because the nesting season then being at its [illegible] and also unseasonal rains during this the 'dry' season had obliterated most tracks

and most of the early-season nests. Olive ridley and green turtles also nest here. No tracks of emerged hatchlings of any turtle species were found on any of the Little Nicobar beaches; this was probably attributible to compaction of sand by intermittent rain, rather than to the absence of emerged hatchlings. Monitor lizards and possibly wild pigs take eggs and hatchlings on this beach. Predation by domestic dogs from Pulo Kiyang appears to be heavier still. This hamlet, consisting of three huts , lies about 1 km south-east of the southern end of the nesting beach. The beach itself is about 3 km long and is oriented in a northwest- southeast direction. Its width in end-March averaged about 50 m. As is the case at every leatherback nesting beach in the Andaman and Nicobar Islands, a river-mouth opens onto the beach, though in this case, the river-mouth -- more appropriately the mouth of a creek -- was temporarily cut off from the sea by a sandbar, since the dry season prevailed. The creek opens into the sea near the northern end of the beach. North of this beach a ½ km stretch of rocky cliffs makes progress along the shore unsafe except perhaps for a mountaineer.

2.1.2 The Dahayu beach :

This approximately 4½ km long beach, one of the most extensive of any in the archipelago, was about 70 m. broad in end March 1984. Oriented approximately north-northwest and south-southeast, it is separated from the Pulo Kiyang beach lying to its south by the ½ km stretch of cliff mentioned earlier and also by a smaller (c.1 km long) beach that lies within a cove ('Dahayu Cove') adjacent to, and just south of, the Dahayu beach. The cliffs can be circumvented by following a hilly, infrequently used, 1 km long forest trail most of which borders a winding stream that has to

be crossed 6 times. As one goes south to north, the trail emerges onto the southern end of Dahayu Cove, where 3 leatherback nests were evident. Another small stream also empties into Dahayu Cove.

The hamlet of Dahayu, which consists of two Nicobari huts, is situated near the centre of the main nesting beach . Another hut also exists at the northern extremity of this beach.

The mouths of two creeks open onto the beach -- one at its northern end, the other about 1 km north of its southern end. A sandbar intervened between the mouth of the latter creek and the sea.

Only 4 of the 47 leatherback nests evident at the Dahayu beach had visible tracks associated with them. Olive ridley nests were also present, as were at least 2 nests made by green turtles, one of which had nested on the night of 30/31 March 1994. As is the case at the Pulo Piyang beach, domestic dogs number among the predators of turtle eggs and hatchlings.

The occasional presence, on this coast, of poachers based in Thailand is certain. Though the two creeks afford optimum habitat to the saltwater crocodile (Crocodylus porosus), Peter, an inhabitant of Dahayu, states that these reptiles were not then present in the creeks, a result, almost certainly, of poaching. Little Nicobar, despite its relatively large size (131.5 sq. km) is very thinly populated (population c.400, 1991 census). The few human settlements (numbering 13) all lie on the coast, the interior of the island being an intact rainforest.

2.2 Re-survey of the Galathea beach :

2.2.1 Nest counts on the Galathea beach :

The beach was surveyed twice in 1994, on 12 March and 5 April. Olive ridley nests were not enumerated because nesting evidence was obliterated in most instances by intermittent rain and by wind. The most recent of the olive ridley nests was made on about 31 March.

During the period 22 December 1991 to 22 March 1992 rain had fallen on only 2 days, and then only briefly (less than 0.5 cm totally). The corresponding period during the 1993/94 season saw much more frequent and heavier rainfall, though this was not quantified.

Table 1 Counts of leatherback nests, Galathea beach, 1993/94 season.

Location	Date(s) of survey	No. of intact nests visible	No. of nests opened by wild pigs	Total no. of nests
Eastern half of beach	12 March '94	132	79	211
"	5 April '94			92
Western half of beach	5 April '94			26
Entire beach	12 March & 5 April '94			237

Five sets of tracks made by adult leatherbacks were visible on 12 March , but only one on 5 April. Tracks of hatchlings from four nests were visible on 12 March, but none on 5 April.

The total of 237 nests, up 79 from the 1991/92 season's tally of 158 nests may reflect a 'natural' increase rather than one

resulting from any conservation action.

Based on 1991/92 data when each leatherback turtle nested 4.9 times on average within a season (Bhaskar 1993), the number that nested during the 1993/94 season was at least $\frac{237}{4.9}$ i.e. 48 turtles, as compared to 32 in 1991/92.

2.2.2 Predation of nests at the Galathea beach :

During the 1991/ 92 and 1992/3 seasons, dogs (both feral and domestic) have been eliminated from the vicinity of the Galathea beach, by action taken by the Forest Department. Wild pigs have now replaced dogs as the chief predators on turtle eggs and hatchlings here. Monitor lizards now also take a few nests.

Predation by these natural predators represents an improvement over predation by dogs. The latter also took more nests : four dogs that fed from the Galathea nests in 1991/92 were averaging one nest per night per dog during the peak of the hatching season (February and part of March) before they were shot. Not more than two wild pigs operated at night at the beach during the 1994 survey (12 March and 5 April).

2.2.3 Disturbance to turtles caused by human activities related to bridge construction at the Galathea's mouth:

About 300 m.from the Galathea beach two permanent buildings have been erected adjacent to a bank of the Galathea river, by the Andaman Public Works Department and the Andaman Harbour Works, to facilitate construction of a permanent bridge over the river. The buildings are situated near the Forest Department's camp at ' Km 41'. Major populations of several endangered animals -- among these [illegible] turtles, a megapode, the coconut crab and the saltwater

crocodile -- exist within a radius of 5 km of these permanent structures whose planners clearly did not include wildlife conservation among their priorities.

2.2.4 Impact on turtles from the projected oil terminal and free port in Galathea Bay :

The construction of these facilities will result in the summary elimination of the sea turtle nesting colonies at the Galathea beach, at Saphed Balu and at Indira Point, through human-related activities. Construction of a free port, in particular, will not only affect irreversibly the wildlife of this near-pristine area but will uproot and eliminate the culture and identity of the tribes -- the Shom-pens, the Nicobarese and the negritos -- of the entire archipelago.

2.3 Revised estimate of the minimum number of leatherback turtles nesting in the archipelago in one year :

The following figures take into account the higher degree of nesting during the 1993/94 season (as compared to the two previous seasons) and also the nest counts on the two major nesting beaches on Little Nicobar Island. Totals are composite figures obtained from discrete surveys of the various beaches, often in separate years. The most recent nest counts are the ones used.

Table 2 Minimum numbers of leatherback turtles nesting in the Islands in one year.

Island(s)	Source	Date(s) of survey(s)	No. of nests	No. of turtles*
Nicobars :			930	190
Great Nicobar	Bhaskar 1993	12 Dec '91 to 22 Mar'92	811	166
Little Nicobar	", this report	29 & 30 Mar'94	110**	22
Katchal	", unpublished data	7 - 11 Feb'79	5	1
Teressa	", " "	12 Mar'79	4	1
Andamans :			99	20
Rutland	Bhaskar, unpublished data	25 Aug'92	5***	1
Little Andaman (west coast)	" , 1984	12 - 14 Jan'84	84	17
Little Andaman (South Bay)	" , 1981	26 Feb'81	10	2
Andamans and Nicobars			1029	210

* Based on the assumption that each turtle makes 4.9 nests per season, on average.

✓** 165 nests were actually found, but the 1993/94 season having been exceptionally good, the figure was lowered to 110 (i.e. $165 \times \frac{158}{237}$, see Art.1.3).

*** 161 nests were found during a Forest Department survey between February 1990 and March 1991 (pers.comm., A.Saxena, 1994). This figure has not been included in computing nesting numbers.

2.4 Unsurveyed Nicobar beaches sighted from the sea :

2.4.1 On Little Nicobar Island :

- Two small beaches on the west coast north of Dahayu.
- A beach on the western side of the northward-projecting headland on the island's northeastern side facing Pulo Milo Island.
- A beach on the northern end of the headland mentioned above.

In addition, the beach surveyed by Tiwari in 1991 near the village of Pulo Panja on the island's north-eastern coast requires re-surveying.

2.4.2 On Bompoka Island :

- Two small beaches on the island's western coast.

2.4.3 On Chowra Island :

- Sandy beaches on both sides of the high plateaux on the island's southern side.

The turtle species that nest on theabove beaches may, or may not, include leatherbacks.

3. DATA ON THE HAWKSBILL TURTLE

3.1 Nesting by daylight at Saphed Balu, Great Nicobar.

A large hawksbill of Standard Carapace Curved Length 86¼ cm and Curved Width 79 cm -- the second largest of 58 nesting hawksbills seen by me in the archipelago) came ashore on the beach at Saphed Balu at about 5 p.m. on 13 March 1994, made and deserted an egg chamber among coconut trees, and finally nested. The size of its clutch, 198 eggs, was also very large, the fourth largest out of 120 hatched clutches examined by me in the Andamans and Nicobars. The turtle was

not tagged, but may be identified in future by the presence of a large barnacle (Chelonibia testudinaria) on the second vertebral scute, and a jagged hole at the junction of the first and second vertebral scutes and the first left costal scute.

This was only the third instance of daylight nesting in 165 recorded instances of nesting by this species in the archipelago.

3.2 Alteration of nesting habitat at Saphed Balu :

The three kilometre long beach at Saphed Balu is one of the few in the Islands where the hawksbill, the green turtle and the leatherback have been confirmed to nest. Pandanus and Scaevola, typical nesting beach vegetation on these islands, fringes most of the beach. Behind this, there exists a coconut plantation owned by Nicobarese from the village of Chingam distant about 4 km away. Several large, native buttressed trees have been left intact within the coconut plantation. Nooks and interstices among the buttresses were found by Dr. Indraneil Das and me to be populated by a colony of the endangered coconut crab (Birgus latro). Pending confirmation through detailed surveys, we believe this area to be the most important of Great Nicobar's coconut crab habitats.

On 14 March 1994, almost all the natural beach vegetation was hacked away on instructions from the owners of the plantation, by a Tamilian in their employ and by two Nicobarese. The object was to create more space for the cultivation of coconuts.

Once coconut trees take root in the cleared space, the three turtle species that nest here will find their nesting habitat

severely curtailed, and will also find it difficult or impossible to dig egg chambers in the remaining spaces.

Quite apart from these disastrous effects on nesting turtles, unrestricted human activity on a full-scale coconut plantation will inevitably render the coconut crab population untenable, as has occurred at every such plantation in the archipelago save those on uninhabited islands such as Meroe and Tillanchong. Coconut crabs (when available) are relished as food by several communities in the Nicobars. One of three coconut crabs encountered by us weighed over 4 kg, far heavier than the largest Mangrove crab (Scylla serrata), a species that is widely eaten in the Islands.

3.3 Consumption of hawksbill meat by Nicobarese :

On 1 April 1994, Nicobarese at Kondul Island consumed a juvenile hawksbill that had been speared at sea off Pulo Bet, a hamlet on neighbouring Great Nicobar Island, by Augustus, a young Nicobarese. Tribals of the Andaman and Nicobar Islands are exempt from the provisions of the Indian Wildlife Protection Act.

On Kondul, Nicobarese distinguish between edible (non-poisonous) and inedible (poisonous) hawksbills by the length of the intestine. The speared turtle which had an intestine 3.13 metres long was considered edible. Besides the meat and calipee, the cleaned intestine itself was also cooked and eaten. Hawksbills having short intestines -- approximately less than one metre in length for a turtle of the above size -- are considered poisonous to eat. Some Nicobarese claim that such short-intestined hawksbills can be identified from superficial characteristics even before butchering. Cases of

poisoning from the consumption of hawksbill meat are reported to have occurred at Pulo Milo and Car Nicobar islands several decades ago in each instance. On Katchal Island, I witnessed in 1979 the meat of a juvenile hawksbill being minced and eaten raw with coconut. The Nicobarese there did not appear to be aware of the possibility of being poisoned by doing so. In mainland India (in southern Tamil Nadu) it is known that thorough cooking renders otherwise poisonous hawksbill meat safe to eat.

3.4 Dogs and human activity in the Indira Point area of Great Nicobar Island :

Tracks of dogs, both feral and domestic, that search the beach methodically for hawksbill and green turtle eggs and hatchlings were found seaward of the beach vegetation (primarily Scaevola, Pandanus and Messerschmidia) at Indira Point, the southernmost land in India. Monuments that commemorate the visits of India's Presidents and Prime Ministers to this unique and environmentally sensitive area line part of the coast immediately landward of the beach vegetation.

4. DATA ON THE OLIVE RIDLEY TURTLE.

This section has been compiled almost entirely from data provided by the Andaman and Nicobar Forest Department.

4.1 Arribada-type nesting at Cuthbert Bay

Misra (1990) recorded 338 nests of the olive ridley on the approximately 5 km long stretch of beach at Cuthbert Bay during the 1988/89 nesting season. Most of the nesting occurs north of a creek at Betapur 'No.2'. Prior to the 1992/93 season

the Forest Department had been fencing in individual nests 'in situ' to thwart predation by dogs. During the 1992/93 and 1993/94 seasons nests were incubated at beach hatcheries.

Table 3. Total nests and nesting during peak nights at Cuthbert Bay, 1990/91 and 1991/92 seasons.

Nesting season	Period of nesting	Total nests	Peak nights and no.of nests		Total nests during the 4 peak nights	$\frac{\text{Total Peak nights}}{\text{Seasons total}} \times 10$
1990/91	16 Nov'90 to 30 Apr'91	706*	4 Feb'91	70	410	57.5 %
			6 "	37		
			11 "	147		
			12 "	156		
1991/92	1 Dec'91 to 26 Feb'92	711**	14 Jan'92	52	520	72.8 %***
			29 "	170		
			30 "	93		
			26Feb'92	205		

* This excludes 7 nests, one made in August, 2 in September and 4 in October 1990.

** Excluding 3 nests -- 1 made in August and 2 in September 1991.

*** The percentage is biased (high) because nests made late in the season after 26 Feb '92 have not been considered.

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4.2 Month-wise nesting data from Cuthbert Bay.

Table 4. Month-wise number of olive ridley turtle nests in different nesting seasons at Cuthbert Bay.

A	B	C	D	E	F	G
Month	Number of nests					% of nests w.r.t. total nests (723) for an average season
	1990/91 season	1991/92 season	1992/93 season	1993/94 season	Average	
May				0	0	0
Jun				0	0	0
Jul				0	0	0
Aug	1	1		1	1	0.14 %
Sep	2	2		2	2	0.28 %
Oct	4	0		4	3	0.41 %
Nov	13	3		5	7	0.97 %
Dec	87	73		71	77	10.65 %
Jan	145	394			269.5	37.28 %
Feb	427	241			334	46.2 %
Mar	15				15	2.07 %
Apr	19		10		14.5	2.01 %
Total year	713	714*			723	

*The total for the 1991/92 season was actually higher than 714, since nests made after the peak night of 26 Feb '92 were not counted.

Over 900 nests were made at Cuthbert Bay during the 1993/94 season (pers.comm., Paul 1994).

From column G, it is clear that the main nesting season for the olive ridley at Cuthbert Bay spans the months December, January and February, as is the case at Great Nicobar.

4.3 Revised estimate of the minimum number of olive ridley turtles nesting in the archipelago in one year.

The following figures take into account the larger numbers of olive ridley nests during recent nesting seasons at Cuthbert Bay, as compared to the number (338) given by Misra (1990) for the 1988/89 season. As was done in the case of leatherback turtles, the total number of nests arrived at are derived from composite data obtained from discrete surveys, often in separate years. The most recent nest counts are the ones used, as before.

Table 5. Minimum numbers of olive ridley turtles nesting in the Islands in one year.

Nesting areas	Source	Date(s) of survey(s)	No. of nests	No. of turtles*
Andamans:			755	503
Coffeedera (in North Andaman)	Bhaskar 1993	2-13 Apr'93	13	9
Cuthbert Bay	Forest Dept.	1990-1994	723**	482
Karmatang No.9	Bhaskar 1993	27 Mar '93	14	9
Little Andaman I.	"	29 Mar '78 to 5 Jan '79	5	3
Nicobars :			297	198
Katchal I.	"	7-11 Feb '79	9	6
Teressa I.	"	12 Mar '79	8	5
Great Nicobar I.	"	12 Dec '91 to 22 Apr '92	280	187
Total			1052	701

* Based on the assumption that each ridley nests 1.5 times within a season.

** The figure used (723) represents the theoretical number of nests during an average season at Cuthbert Bay. (See Table 4, Art. 4.2).

5. RECOMMENDATIONS.

5.1 Recommendations for the Galathea beach :

5.1.1 Control of animal predation on turtle eggs and hatchlings.

Two options are available :

(a) Trapping and subsequent translocation of wild vertebrate predators (primarily wild pigs; less importantly, water monitor lizards) to areas well away from the nesting beach. These could be caught with relatively harmless bent-sapling traps set on the beach adjacent to the vegetation line during the forthcoming nesting season beginning in November 1994. Two such traps, placed, respectively, 500 metres east of and 200 metres west of the Forest Department's camp at 'km 41' on the North-south road will suffice.

(b) Patrolling of the nesting beach by humans (personnel from the Forest Department or from concerned non-governmental organizations), to be undertaken 4 times each night throughout the main nesting and hatching seasons (December to April). Recommended times for the commencement of each patrol are 9 p.m., 11 p.m., 1 a.m. and 3 a.m. The use of a dog on a leash by the patrolling party may inhibit wild pigs still further. The presence of dogs (domestic and feral) on the beach at all other times should continue to be srtongly discouraged, as is being done at present.

5.1.2 Permanent buildings near the bridge over the Galathea river at 'km 41'.

Once the bridge is completed, it is important that these

buildings --- built within the limits of the Galathea National Park --- be either deomlished or, alternatively, be handed over to the Forest Department for use as a checkpost to help in protecting sea turtles, megapodes,coconut crabs, saltwater crocodiles and other endangered fauna and their habitats. A checkpost here would be invaluable in controlling poaching both by foreign poachers (who operate from Thailand) and, after the construction of the bridge, by Indians.

5.1.3 Removal of beach debris :

It is recommended that flotsam consisting of logs and branches be cleared from the beach in November just before the start of the main nesting season for leatherbacks and olive ridley turtles. The debris could be dumped just landward of the beach vegetation. Glass bottles and synthetic debris, some washed up by the sea but most left behind by beach picnickers also need to be removed.

5.1.4 Regulation of tourist activities during the nesting and hatching seasons :

Large scale tourism, if allowed on the nesting beach in future, will result in the compaction of beach sand and thus reduce hatching and emergence success of hatchlings from compacted nests. At night, nesting turtles especially leatherbacks will also be disturbed unless tourists are accompanied by experienced guides deputed by the Forest Department.

5.1.5 Oil terminal and free port :

Plans for the construction of an oil terminal and free port in Galathea Bay (South Bay) urgently need to be scrapped, for reasons given in Art

5.2 Recommendations for Saphed Balu beach and environs :

The 1993 status quo at Saphed Balu requires to be revived by the Forest Department, after consultations with the captain of Chingam village and with the village elders who own the plantation. If coconut saplings have already been planted in the cleared space, the Nicobarese need to be convinced of the importance of uprooting them and of reallowing the growth of natural beach vegetation, to attract nesting turtles. They also need to be apprised of the fact that in the area immediately behind the beach, trees with branched buttresses (i.e. those having arches, passageways and holes between the buttresses) form excellent habitat for the coconut crab, which could eventually become a major source of income for the Nicobarese through regulated wildlife tourism. Surveys of such trees to census the adult coconut crab population in this area between kilometres 46 and 49 are urgently needed.

5.3 Recommendations for the Indira Point area :

5.3.1 Control of dogs :

Lighthouse Department personnel who man the lighthouse at Indira Point should be discouraged from keeping dogs. Chaining these dogs appears to be the only other means of controlling predation on turtle eggs and hatchlings here. To prevent their becoming feral, these dogs need to be taken away by the owners when the latter are transferred, instead of being let loose in the wild.

Feral dogs presently operating on the beach at Indira Point need to be eliminated by the Forest Department.

5.3.2 Monument construction at Indira Point :

The construction of monuments degrades nesting beach habitat

by the removal of beach sand used in their construction, by the alteration and removal of beach vegetation and by encouraging disturbance to nesting turtles, caused by human activity such as unregulated tourism. It is strongly recommended to forego all construction at Indira Point.

5.4 Recommendations for Little Nicobar :

5.4.1 Control of poaching by crews of foreign boats :

It is urgently recommended that effective action be speedily undertaken by the Indian Coast Guard and/or the Indian Navy to halt the infiltration of foreign boats into Indian coastal waters and poaching on Indian soil. Among the protected species now confirmed as being exploited are : the saltwater crocodile, sea turtles, the coconut crab, red coral and nests of the 'edible'swiftlet. In addition, sea cucumbers, marine molluscs and sea kraits number among the fast-depleting forms of marine life being exploited illegally.

5.4.2 Surveys

Sea turtle surveys need to be undertaken in the areas listed in Art. 2.4.1.

5.4.3 Control of dogs

Nicobarese residing at the hamlets of Dahayu and Pulo Liyang need to be convinced of the importance of control or removal of their domestic dogs, in order to conserve sea turtles.

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