

Students' Sea Turtle Conservation Network: A victory for volunteerism!

V. Arun

*Coordinator / Trustee, Students' Sea Turtle Conservation Network
8/25, 2nd Street, DP Nagar, Kotturpuram, Chennai – 600085, Tamil Nadu, India
Email: arun.tree@gmail.com*

Rising to the challenge

The Students' Sea Turtle Conservation Network (SSTCN) has risen to the challenge of a bumper turtle season in 2011 that has seen nest numbers matching highs last seen in the early 1990s. Being a voluntary group working with youngsters, this meant a quantum leap in terms of work and commitment, but it is a testament to the volunteers that the beach was patrolled every single night during the last season.

In 1991, SSTCN volunteers found 206 nests and released 12,465 hatchlings and in 1992, 175 nests resulted in the release of 16,643 hatchlings. However, nest numbers declined through the 1990s and just 17 nests were found in 1997. Although numbers started rising from 2000, volunteers were thrilled when a season yielded 5,000 hatchlings. The 2010 season, with 90 nests and 7,008 hatchlings, was the best in the previous decade. But 2011 has exceeded expectations. SSTCN volunteers collected 185 nests over a 14 km stretch and managed to release 14,238 hatchlings.

Table 1 provides a summary of the nests collected/protected and hatchlings released over the past 23 years.

The SSTCN

Established in 1988, SSTCN now works with a pool of around 30 volunteers. Some stay for several years while some work with the group for only a single season or even just part of a season. Some volunteers join the patrols or 'turtle walks' once in a fortnight, while some are willing to patrol three times a week. In general, volunteers are advised

not to patrol more than twice a week.

The group holds a meeting before the beginning of the season to draw up a schedule for the volunteers. Each volunteer commits to patrolling on a particular night or two nights in a week, though schedules can change during exams for student volunteers or other pressures for those who work. Detailed discussions are held about the rules to be adhered to including various 'Dos and Don'ts', especially for the benefit of fresh volunteers.

Every year, student volunteers graduate from college and may leave the city or have new responsibilities, leaving the group with fewer volunteers at the beginning of the season. During the last season, ten of SSTCN's best volunteers graduated from Anna University. However, the group was confident that if it could survive 22 years as a voluntary group, it could surely survive the 23rd year. However, at the time, we were not aware that we would be covering a new stretch of beach.

The SSTCN establishes a sea turtle hatchery each year on the Chennai coast. The group has traditionally covered the stretch of beach south of the Adyar estuary, a distance of about 7 km from Besant Nagar to Neelangarai. Some years, with additional volunteers, stretches of beach further south have been covered. Marina beach, north of the estuary, has not been covered in the past, as it is the oldest and largest public beach in Chennai, in the heart of the city, and with large numbers of people and lights, has not been known to receive significant nesting in the past.

The SSTCN starts its patrols at 12:30 am and if

volunteers do not find nests or tracks in the first two kilometres, they take a break and continue the walk after a couple of hours, thereby increasing coverage. At Marina beach, the patrolling is conducted around 3:00 am rather than at night. Both timings have their advantages and

limitations. Due to the high levels of disorientation of emerging hatchlings caused by lights on the beaches, volunteers have often stayed to patrol the beach the entire night over the last couple of seasons to ensure that all nests are relocated to the hatchery.

Table 1. Number of nests collected/protected and hatchlings released between 1989 and 2011

Year	Distance (km)	No. of nests	Density	No. of eggs	No. of hatchlings	Hatching success (%)
1989	6 - 15	68	~8	8,625	5,727	66.4
1990	15	55	3.7	6,635	4,240	63.9
1991	15	206	13.7	24,586	12,465	50.7
1992	15	175	11.7	19,626	16,643	84.8
1993	6	27 ^h + 33 ^w	10.0	3,198 ^h	2,974	93.0
1994	6	66 ^h + 20 ^w	14.3	7,621 ^h	4,938	64.8
1995	6	41 ^h + 26 ^w	11.2	4,920 ^h	3,134	63.7
1996	6	40	6.7	4,782	3,936	82.3
1997	6	17	2.8	2,166	1,488	68.7
1998	6	15	2.5	1,785	1,428	80.0
1999	6	47	7.8	5,664	4,871	86.0
2000	6	67	11.2	7,722	6,332	82.0
2001	6	105	17.5	12,705	7,623	60.0
2002	6	67	11.2	8,194	5,408	66.0
2003	6	57	9.5	6,580	4,982 (4,199 ^h + 783 ^w)	63.8
2004	6	56	9.3	6,656	4,828 (4,181 ^h + 647 ^w)	62.8
2005	7.5	65	8.7	7,061	2,207 (1,695 ^h + 512 ^w)	24.0
2006	7.5	51	6.8	5,656	3,077 (2,624 ^h + 453 ^w)	46.4
2007	7.5	66	8.8	7,483	2,461 (2,068 ^h + 393 ^w)	27.6
2008	7.5	69	9.2	8,015	5,473 (3,903 ^h + 1,570 ^w)	48.7
2009	7.5	64	8.5	6,991	5,552 (4,582 ^h + 970 ^w)	65.5
2010	14	90	6.4	10,223	7,008 (5,808 ^h + 1,200 ^w)	56.8
2011	14	185	13.2	20,204	14,238 (14,046 ^h + 192 ^w)	69.5

w- wild nests; h – nests in hatchery

In some years, a larger percentage of sterile eggs, high temperatures, or unexplained fungal attacks or attacks by a species of blind ants, caused low hatching of eggs.

Meet the volunteers

Prem, a weekend ‘turtle walker’ for two years, offered to walk twice a week through the entire season. He also offered to bring another volunteer. His friend **Vinod** and his wife – a young couple working in the IT sector played a very critical role this season, particularly on the Marina beach stretch, during both the nesting and hatching period. It would have been quite a struggle without them.

Harish joined the group on a public walk and subsequently offered to be a volunteer. Though the group gets many such offers each year, few of them deliver. Harish, however, while completing his final year in Engineering from the Regional Engineering College in Trichy, traveled 300 km every chance he got to join the ‘turtle walks’ – often every week. Straight out of the college, on to a long distance bus and straight off the bus for an all-night walk!

Shravan has been a regular volunteer with the group for five years now, from school days through college. He has remained fully involved and committed while playing high level cricket at the first division of Tamil Nadu State. Despite all the practice and matches, he has attended to the Besant Nagar hatchery for a large part of this season.

Karthikeyan has been involved with the group through school and several years of college while obtaining graduate and post graduate degrees. He committed an entire three months to sea turtles this season before beginning work. He was particularly instrumental in managing the patrols of Marina beach.

Ashok, an employee of IIT Chennai, had joined the group before on walks, but appeared mid-season with a group of colleagues and an offer to help, particularly when there was a crisis.

Diary of the season

By way of celebrating a successful season and reflecting on our experiences, we have created a diary of the season, which we hope will inspire other groups to share their experiences as well.

January 2011 – Total nests 27

SSTCN had a slow start to the year with only a few nests, apparently due to the unusual topography of the beach. Instead of the usual gentle slope, emerging turtles were confronted with a wall of sand running parallel to the water – in some places a foot high, but in most places more than three feet high. This accounted for about 80% of the beach covered by the group, making successful nesting impossible in all but a few short stretches. As January progressed, we noticed that a number of turtles were emerging, encountering the wall, crawling along it for a stretch, failing to find a way to get on the beach, and returning to sea. We wondered how the turtles would respond, and how long they would be able to hold the eggs before possibly abandoning them in water. We waited for the tides to smooth the profile of the beach, but we had to wait nearly a month before the beach returned to normal again.

Meanwhile, at Marina beach, after ongoing problems with recruiting paid staff to work alongside volunteers, we returned to our tried and tested formula of relying solely on volunteers. This meant we would need twice the usual number of volunteers every night, but we persevered and were successful to our great satisfaction.

February – Total nests 124

In the beginning of February, the high tides smoothed the beach and for the first two weeks, we collected a few nests as is usual during this part of the season. This was little warning for the bonanza that lay ahead.

On February 18th, we were joined by students of Asian College of Journalism and found 10 nests. This was the beginning of a very busy few days. 72 nests were collected in a matter of just 10 days – 36 on each side of the Adyar estuary.



Figure 1. A volunteer releases hatchlings.
Photo: SSTCN

Adhith Swaminathan, a long time SSTCN member and volunteer, who had just returned from a 3 month stint in Little Andaman Island tagging leatherbacks, encountered 11 nests on one of his first walks of the season. He suggested that this might be an indication of mass nesting in Orissa, and within a few days, mass nesting did begin in Orissa.

On weekdays, there are usually two volunteers on the patrols, but with such high nesting numbers, this could be a daunting task for volunteers. To compensate, volunteers worked additional nights and were available to help with the load. In addition to carrying multiple nests to the hatchery, relocation is time consuming and volunteers were often working well into the following morning. In addition, there were often nesting turtles to measure and collect data on. After two weeks, the euphoria of large numbers of nests began to wane and volunteers almost began hoping for a return to the normalcy of one or at the most, two nests a night. However, nesting did subsequently decrease, giving the group time to carry out the much needed expansion of the Besant Nagar hatchery.

Raising public awareness

The term ‘turtle walk’ is well established in Chennai today. Started by Romulus Whitaker and the Madras Snake Park Trust, it has been conducted by several groups over the years including WWF-India and other local NGOs. Hatcheries have been maintained over this period by the Madras Snake Park, Central Marine Fisheries Research Institute and the Tamil



Figure 2. SSTCN volunteers collect nest and egg data. Photo: SSTCN

Nadu Forest Department. The SSTCN established its first hatchery in December 1988 and has conducted these ‘turtle walks’ each season since then.

The group takes people with them on the patrols on Friday and Saturday nights throughout the season. Over the years, more than 25,000 people have joined the SSTCN on turtle walks, and this year, over 1,500 people participated in the walks.

In the last few years, the hatchery has become a place for education for the younger children who are unable to join the late night patrols. This year, more than thousand excited young children and their families visited the hatcheries and watched hatchlings being released.

March - Total nests 56, total hatchlings released 3,800

In the hatcheries, the first hatchlings of this year emerged on March 1, 2011 and emergences continued until May 16, 2011. Hatchlings do not always emerge from nests in the chronological sequence that nests were laid. Volunteers prepare by placing baskets over the next ten nests (or nests laid over the next week) that are expected to hatch. By mid-March, the Marina beach hatchery was also expanded and both hatcheries were covered with jute, which appears to have a positive effect on hatchling survival, perhaps by reducing temperatures towards the end of the season. The base of the hatchery walls was lined to ensure that no hatchlings escaped from the hatchery.



Figure 3. School children watch SSTCN volunteers in action. Photo: SSTCN

At this time, the workload increased on nightly patrols. Volunteers not only had to look for nests but also for hatchling tracks from 'wild' nests that had been missed and were not relocated to the hatcheries. This year, 192 'wild' hatchlings were located compared to 1,500 hatchlings two years ago. This may be due to improved strategies to reduce the number of nests missed.

Another huge achievement for the SSTCN this year was the passing of a Government Order requiring floodlights on the beach to be switched off during the sea turtle season (see Akila & Arun, this issue). This at least reduces the impact of one of the major threats to the hatchlings.

April – Total hatchlings released 7,953

Nesting appeared to have ended by April 1, 2011. At this time, the public 'turtle walks' were stopped to focus on the safe release of hatchlings. 185 nests had been relocated to the two hatcheries by this time and effort was required to ensure the careful release of hatchlings. A team was assigned to each hatchery on either side of the estuary to check on the emergence of hatchlings from 5:00 pm every few hours till the morning. This was in addition to two paid assistants from local fishing hamlets.

7,953 hatchlings were released in April. Rain showers during this period may have contributed to higher hatchling survival rates. In very hot years with no April showers, the survival rate of nests hatching later in the season is very low, probably due to very high sand temperatures.



Figure 4. Expansion work underway at the Besant Nagar hatchery. Photo: SSTCN

May – Total hatchlings released 2,278

When hatchlings began emerging, we hoped that we would cross 10,000, but the final numbers exceeded our expectations and we released a total of 14,238 hatchlings. By the third week of May, the volunteers dismantled the hatchery and stored materials safely for use again next year. The hatcheries are made of bamboo and the same material is used for about five years.

All the volunteers shared a sense of satisfaction and an understanding that the achievements resulted from the successful team work of people interested in sea turtles and the environment. Kudos to our volunteers and to volunteering!

Despite the positive story from this season, the beaches of Chennai continue to be vulnerable to major threats:

First, there is a proposed ten kilometer long elevated expressway (a thousand crore project) along the Chennai nesting beaches which is likely to have serious consequences due to vehicular movement and pollution, lights, destruction of habitat, displacement of fishermen and destruction of their homes and livelihood.

Second, as in previous years, numerous dead turtles were encountered, totaling nearly hundred this season. This of course is a larger problem along the east coast of India and needs to be addressed at a larger scale.