

REPORT ON COASTAL ENCROACHMENTS AND BEACH USE CONVERSION IN CHENNAI

At the request of Save Chennai Beaches Campaign, a fact-finding tour of the coast of Chennai between Light House and Thiruvanmiyur was conducted on September 29, 2012, to document instances of Coastal and riverine wetland Encroachments and land use conversion. Leading the fact finding were T.K. Ramkumar, a lawyer and environmentalist familiar both with environmental laws and the environment, and Kartik Shanker, a marine turtle specialist and faculty at the Indian Institute of Science, Bangalore.

Further information regarding Neelangarai beach was also reviewed. The Fact Finding Team was accompanied by Mr. K. Saravanan of Save Chennai Beaches Campaign, Mr.T.R. Shashwath, an Image processing and Software Professional, Mrs. Shobana Vishwanathan, Geographer and Mr. Sridhar Rao Chaganti, Businessman and amateur photographer. Other inputs and submissions were received from Nityanand Jayaraman, also of Save Chennai Beaches Campaign.

The following report is based on the observations of the members of the Fact Finding Team.

METHODOLOGY

The Methodology adopted was:

- Comparing Google Earth images as of May 16, 2011 with Google Earth's historical imagery from January 12, 2001 to establish a rough 'base line' and trend from which to determine extent of encroachment and land use conversions.
- Sample site visits to
 1. The Beach at the junction of Foreshore Estate Road and Srinivasapuram Road
 2. The Beach from the Southern end of Srinivasapuram to the mouth of Adyar River
 3. Western side of Adyar Creek and north bank of Adyar River at the Adyar Estuary
 4. Northern Bank of the Adyar River near the MRTS structure
 5. Thiruvanmiyur beach between the 1st Seaward Road and 4th Seaward Road Road
 6. Neelangarai beach. (Details of this site were submitted to the Committee by Save Chennai Beaches Campaign)
- Photographing the sites
- Taking GPS readings of the longitude and latitude of the sites with a hand held GPS and comparing with longitude and latitude found on Google Earth
- Walking along the perimeter of encroachments and land use conversion spots with the

hand held GPS to calculate the area, using the area calculation option on the GPS

- Physical observation of the six sites and interviewing local residents.
- Incorporating information submitted regarding encroachments at other sites, including Neelangarai

1. Foreshore Estate - Pattinapakkam

[13° 01' 19.53" North; 80° 16' 41.92" East]

As per the Google Earth image from 2001 to 2004 the stretch of beach from the junction of Srinivasapuram Road, Foreshore Estate Main Road and Foreshore Estate promenade to the sea was plain beach with beach sand.

At the time of the site visit in September 2011, this portion was filled with construction debris to a height of about 2 meters, right upto the waterline. The debris had been compacted and made into a vehicle parking space. Enquires with the local fishermen revealed that each year, this beach was filled with debris to enable vehicles to drive up to the sea front and immerse idols post the Vinayaka Chaturthi Celebrations. Since our visit was conducted immediately after the Chaturthi celebrations, we witnessed piles of wood, plastic and other synthetic decorative waste washed up on the now constricted intertidal zone. Over the years, the filled-up site is being used for parking buses and other vehicles. The filled up portion of the beach as well as the surrounding stretches of sandy beach were littered with plastics. Dumping and compacting of debris right up to the waterfront has interfered with the South to North littoral drift and caused considerable erosion of the coastline just north of the land filled areas. **[See Photo 1]**

The area of this raised and debris-filled portion was calculated by walking around the perimeter with the hand-held GPS. As per the GPS reading, the area was about 2.6 acres, with a possible error of about 4 meters. This was cross-checked with the track app ver 1.1.16 on a Samsung Galaxy Cell phone Model GT 155100 which revealed the same error margin. The dumping of debris and conversion of this area of the beach into a vehicle parking area is unauthorized and clearly in violation of the CRZ notification. Once a sandy beach, this area is now also being used as a venue for driving tests by the Regional Transport Office. This stretch of beach is now unsuitable as a nesting site for the highly endangered Olive Ridley Sea Turtle, and for fauna such as crustaceans and flora as well, usually found within the intertidal and near-tidal areas of the Coastal Regulation Zone.



1. Beach erosion at Pattinapakkam caused due to dumping of debris close to the waterline (Sept 2012).

2. South of Srinivasapuram [13° 00'56.96" North and 80° 16'43.15" East]

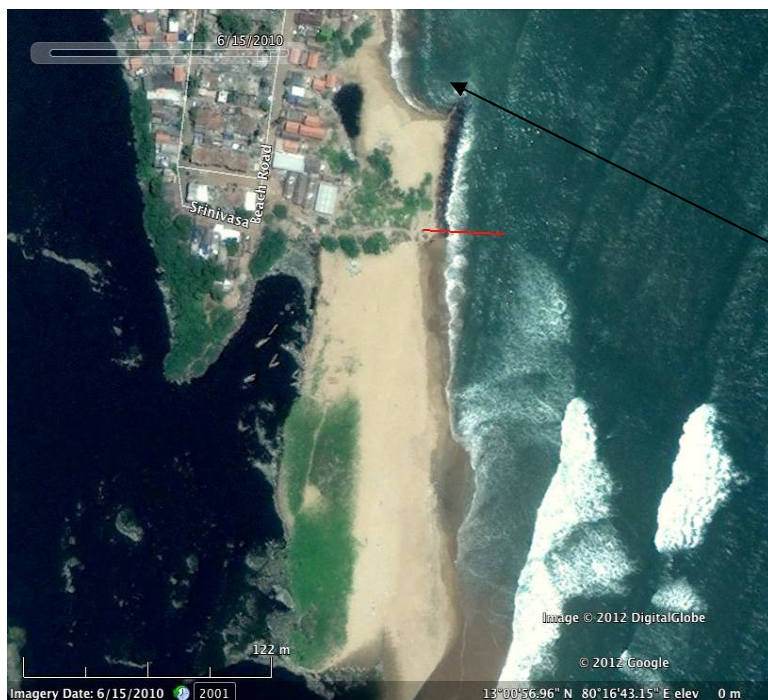
The second site visited was the stretch of beach south-east of Srinivasapuram abutting the Adyar Estuary. From a comparative study of the Google Earth historical imagery from 2001 to 2011, it can be seen that the coast at this point is very dynamic. The red-coloured line on the 2001 image indicates the width of the sandy beach. This had virtually disappeared in 2010, perhaps due to sea erosion. The 2011 image reveals a road running north to south. [See Photos 2, 3, 4] At the time of the visit, there was visible evidence of the road having been removed recently, with pieces of debris still mixed with the beach sand. The road had been removed, albeit improperly and unscientifically, pursuant to the interim order dated 7 August, 2012, of the National Green Tribunal in a case (Application No. 7/2012) filed by K. Saravanan. According to the local residents, construction debris was dumped by PWD contractors from the Srinivasapuram Beach Road to the water front to lay a road running North to South upto the mouth of the Adyar River to allow heavy vehicles to transport sand mined from the river and beach. The mining project was shelved after popular protests.

Our visit also revealed that a significant portion of the beach from Srinivasapuram Beach Road to the waterline was filled and compacted with construction debris to a height of about 5 feet above the surrounding beach sand. This area now houses several tin sheds that have been rented out to migrant workers. The sheds lack even the most basic infrastructure such as running water and toilets, and their flimsy and makeshift nature render them unsuitable and hazardous for habitation so close to the sea. The area of the debris-compacted portion was about 0.4 acres. There was also evidence of removal of sand with the use of earth moving equipment. The whole area was littered with construction debris, plastics and other wastes.

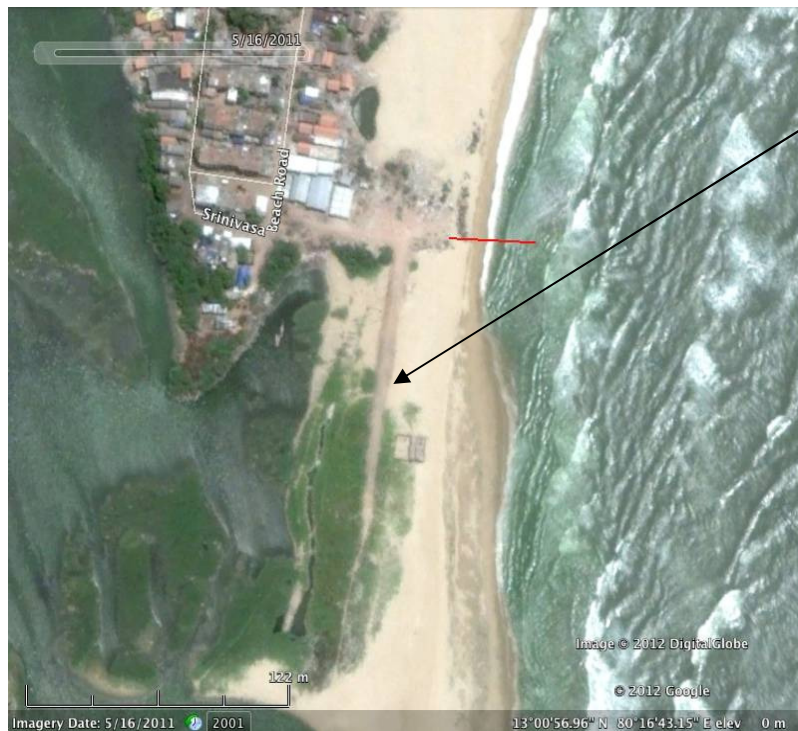
In addition, a seawall that was constructed several years ago to arrest erosion has characteristically resulted in erosion north of the seawall as can be seen from the 2010 google earth image below. [See Photo 3]



2. Google Earth image as on Jan 12, 2001



3. As of 2010 the pond has disappeared and significant sea erosion is noticeable in the northern half of the photograph.



4. 2011: A road has been laid running North to South, towards the river mouth.

3. Western bank of Adyar Creek and Northern bank of Adyar River at the Adyar Estuary

Site # 3 was the area West of and across the creek from Srinivasapuram, on the Western bank of the Adyar Creek. This tidal creek has experienced massive human intervention and land-use change over the past two decades. Till about 1997-98, the west bank of the Adyar Creek was partially a wetland and partially scrub, hosting a large variety of flora, and avian and terrestrial fauna. The features of the land started changing with the construction of a multi-storeyed building called Rani Meiyammai Towers on the southern end, near the Chettinadu palace. The Google Earth image from 2001 shows the southern portion *as vacant land* with scrub cover and the Northern portion as a wetland. The entire wetland portion has been reclaimed as can be seen from the Google earth image from 2011 and large multistoried constructions have come up on the reclaimed land [See Photo 5, 6].

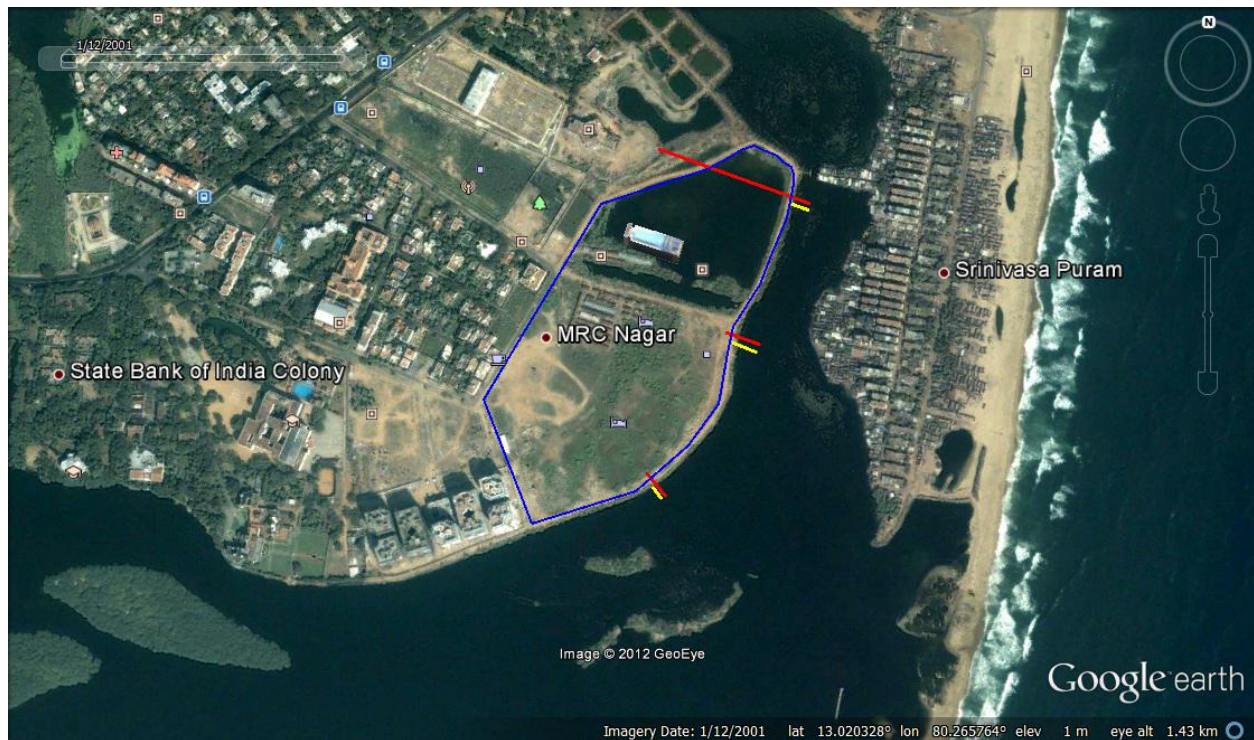
The road from MRC Nagar to the creek bund is now being used as an unauthorized dump site for construction and demolition debris by the Corporation of Chennai [See Photo 7]. Earlier dumping of debris along the creek has resulted in the construction of a 3 metre high bund. The natural banks of the creek have been destroyed and the bank now consists only of construction debris, and is compacted with blue metal and soil. During the site visit since the contour of the bank appeared to have changed, a comparison of the historical Google imagery was made with the most recent image of 2011 available. To facilitate comparison, red lines were drawn on the 2011 image from the nearest building to the water edge. When this image was compared with the

2001 image it was found that the red marker lines extended beyond the banks. To measure the difference, yellow lines were drawn from the tip of the red lines to the water edge in the 2001 image. It was found that the creek has been encroached to varying extents of about 1 meter at the first marker line in the North to about 8 meters at the last marker line in the south. It is estimated that the total area of the encroachment by the debris-filled bund on the creek is about 5.78 acres.

All the high rise buildings were found to be releasing untreated sewage into the Adyar Creek through pipe lines.

This portion of the Adyar creek harbored a large population of ‘Dhobi Crabs,’ bivalves and other crustaceans till about 2000, as well as a fair sprinkling of mangroves. These flora and fauna, characteristic of a healthy creek and estuarine ecosystem was missing at the time of the visit.

The waterfront area in front of Chettinadu Palace too appeared to have been recently built by dumping construction debris on the creek. According to Save Chennai Beaches campaign, that area was reclaimed by dumping debris and red mud in 2010 [See Photo 8]. The newly-created land using debris was covered with earth, and planted with a lawn, with access to that area blocked off by a newly installed gate.



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